

Bahaaeddin Alareeni  
Allam Hamdan *Editors*

# Sustainable Finance, Digitalization and the Role of Technology

Proceedings of The International  
Conference on Business and  
Technology (ICBT 2021)

# Lecture Notes in Networks and Systems

Volume 487

## Series Editor

Janusz Kacprzyk, Systems Research Institute, Polish Academy of Sciences,  
Warsaw, Poland

## Advisory Editors

Fernando Gomide, Department of Computer Engineering and Automation—DCA,  
School of Electrical and Computer Engineering—FEEC, University of Campinas—  
UNICAMP, São Paulo, Brazil

Okyay Kaynak, Department of Electrical and Electronic Engineering,  
Bogazici University, Istanbul, Turkey

Derong Liu, Department of Electrical and Computer Engineering, University  
of Illinois at Chicago, Chicago, USA

Institute of Automation, Chinese Academy of Sciences, Beijing, China

Witold Pedrycz, Department of Electrical and Computer Engineering, University of  
Alberta, Alberta, Canada

Systems Research Institute, Polish Academy of Sciences, Warsaw, Poland

Marios M. Polycarpou, Department of Electrical and Computer Engineering,  
KIOS Research Center for Intelligent Systems and Networks, University of Cyprus,  
Nicosia, Cyprus

Imre J. Rudas, Óbuda University, Budapest, Hungary

Jun Wang, Department of Computer Science, City University of Hong Kong,  
Kowloon, Hong Kong

The series “Lecture Notes in Networks and Systems” publishes the latest developments in Networks and Systems—quickly, informally and with high quality. Original research reported in proceedings and post-proceedings represents the core of LNNS.

Volumes published in LNNS embrace all aspects and subfields of, as well as new challenges in, Networks and Systems.

The series contains proceedings and edited volumes in systems and networks, spanning the areas of Cyber-Physical Systems, Autonomous Systems, Sensor Networks, Control Systems, Energy Systems, Automotive Systems, Biological Systems, Vehicular Networking and Connected Vehicles, Aerospace Systems, Automation, Manufacturing, Smart Grids, Nonlinear Systems, Power Systems, Robotics, Social Systems, Economic Systems and other. Of particular value to both the contributors and the readership are the short publication timeframe and the world-wide distribution and exposure which enable both a wide and rapid dissemination of research output.

The series covers the theory, applications, and perspectives on the state of the art and future developments relevant to systems and networks, decision making, control, complex processes and related areas, as embedded in the fields of interdisciplinary and applied sciences, engineering, computer science, physics, economics, social, and life sciences, as well as the paradigms and methodologies behind them.

Indexed by SCOPUS, INSPEC, WTI Frankfurt eG, zbMATH, SCImago.

All books published in the series are submitted for consideration in Web of Science.

For proposals from Asia please contact Aninda Bose ([aninda.bose@springer.com](mailto:aninda.bose@springer.com)).

More information about this series at <https://link.springer.com/bookseries/15179>

Bahaaeddin Alareeni · Allam Hamdan  
Editors

# Sustainable Finance, Digitalization and the Role of Technology

Proceedings of The International Conference  
on Business and Technology (ICBT 2021)



*Editors*

Bahaaeddin Alareeni  
Middle East Technical University,  
Northern Cyprus Campus, KKTC,  
via Mersin 10, Kalkanlı, Güzelyurt, Turkey

Allam Hamdan  
College of Business of Finance  
Ahlia University  
Manama, Bahrain

ISSN 2367-3370

ISSN 2367-3389 (electronic)

Lecture Notes in Networks and Systems

ISBN 978-3-031-08083-8

ISBN 978-3-031-08084-5 (eBook)

<https://doi.org/10.1007/978-3-031-08084-5>

© The Editor(s) (if applicable) and The Author(s), under exclusive license  
to Springer Nature Switzerland AG 2023

This work is subject to copyright. All rights are solely and exclusively licensed by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors, and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, expressed or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

This Springer imprint is published by the registered company Springer Nature Switzerland AG  
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

# Foreword

I am delighted to write this foreword for The International Conference on Business and Technology (ICBT 2021) proceedings. I deeply believe in the role of such a conference and other similar scientific forums in bringing together leading academicians, scholars, and researchers to share their knowledge and new ideas as well as to discuss current developments in the fields of economics, business, and technology. ICBT 2021 provides a valuable window on the implementation of technologies such as artificial intelligence, IoT, and innovation in business development. For two days, a large number of distinguished researchers and guest speakers discussed many contemporary issues in business and technology around the world. It is a great privilege for the College of Business and Economics at Palestine Technical University-Kadoorie, Palestine, to co-publish this book for the sake of promoting excellent and cutting-edge research by scholars from around the globe. I have a strong faith that this book will be of great benefit for many parties, especially those aspiring to develop buoyant strategies that will lead to positive impact on any future endeavors. Finally, I hope that the ICBT'21 continues as a destination for researchers, postgraduate students, and industrial professionals.

Khalid Sweis

# Preface

The present business environment has been tumultuous due to the emerging new challenges resulting from innovative development and disruptive technology. Consumer demands for innovative products and services have urged business fraternity to be responsive and resilience in combating those new requirements.

The Fourth Industrial Revolution is characterized by the combination of physical and digital technologies, such as analytics, artificial intelligence, cognitive computing, machine learnings, and the Internet of Things (IoT). This would certainly impact the company's business direction, the future industries, the customers, the employees, and the society at large. The advancing technologies are bringing about social changes and economic development. As such, organizations are required to adapt to the new environment and strengthen their strategies despite the risk and uncertainty in the environment. New business integration strategies must be leveraged to ensure companies continue to sustain.

To anticipate the rapid change, education is set forth to be more innovative in offering the future ready curriculum. As such, education organizations and scholars are expected to be malleable and creative in designing new curriculum that embrace new technologies, integrating strong entrepreneurship values, fostering positive values and socio-emotional skills throughout the curriculum in order to produce quality and competent future human capitals that are ready to serve the future industries.

The integration between technology and business should be well managed so to provide a wide range of high-quality and competitive products and services in societies and countries. Therefore, the objective of this book proceedings is to conduct a review, examine, analysis, and discussion relating to the fields of business and technologies and their opportunities and challenges. We attempt to address a range of topics in the fields of technology, entrepreneurship, business administration, accounting, economics that can contribute to business development in countries, such as learning machines, artificial intelligence, big data, deep learning, game-based learning, management information system, accounting information system, knowledge management, entrepreneurship and social enterprise, corporate social responsibility and sustainability, business policy and strategic management,

international management and organizations, organizational behavior and HRM, operations management and logistics research, controversial issues in management and organizations, turnaround, corporate entrepreneurship, and innovation, legal issues, business ethics, and firm governance, managerial accounting and firm financial affairs, non-traditional research, and creative methodologies.

This book constitutes the refereed proceedings of the International Conference on Business and Technology (ICBT 2021) organized by EuroMid Academy of Business & Technology (EMABT), held in Istanbul, between 06 and 07 November 2021. The ICBT 2021 partners and supporters were: Universiti Malaysia Kelantan–Malaysia; National University of Life and Environmental Sciences of Ukraine–Ukraine; ARCIF Analytics; E-MAREFA–Jordan; Palestine Technical University–Kadoorie, Palestine; and the Palestinian Community Association For Ph.D. Holders in the Public Service, Palestine.

In response to the call for papers for ICBT 2021, 485 papers were submitted for presentation and inclusion in the proceedings of the conference. After a careful blind-refereeing process, 292 papers were selected for inclusion in the conference proceedings from 40 countries. Each of these chapters was evaluated through an editorial board, and each chapter was passed through a double-blind peer-review process.

These chapters are reflecting quality research contributing theoretical and practical implications, for those who wise to apply the technology within any business sector. It is our hope that the contribution of this book will be of the academic level which even decision-makers in the various economic and executive levels will get to appreciate.

Finally, we express our sincere thanks to the plenary speakers; Prof. Carolyn Strong, Editor in-Chief, Journal of Strategic Marketing from Cardiff University-UK; Prof. Khaled Hussainey, Co-Editor in-Chief, Journal of Financial Reporting and Accounting, from University of Portsmouth-UK; Prof. Timothy Mescon, Executive VP and Chief Officer-Europe, Middle East and Africa at AACSB International AACSB International–USA; Prof. Roselina Ahmad Saufi from Universiti Malaysia Kelantan–Malaysia; Prof. Munira Aminova, Experienced Higher Education management leader with a demonstrated history of working in the research industry, from United Business Institutes-Belgium; Prof. Mohammad Kabir Hassan, Editor in-Chief, International Journal of Islamic and Middle Eastern Finance and Management, University of New Orleans-USA; and Prof. Derar Eleyan, President Assistant of Palestine Technical University Kadoorie-Palestine.

Bahaeddin Alareeni  
Allam Hamdan

# Contents

<b>Corporate Finance, Digitalization of Accounting</b>	
<b>CatBoost: The Case of Bankruptcy Prediction . . . . .</b>	<b>3</b>
Mário Papík, Lenka Papíková, Jana Kajanová, and Michal Bečka	
<b>Review of the Public Sector Organizations' Environment: Accounting and Internal Control Systems, and Audit Quality . . . . .</b>	<b>19</b>
Husni Ibrahim Asad Rabaiah, Mustafa Mohd Hanefah, Rosnia Masruki, and Nurul Nazlia Jamil	
<b>The Impact of Accounting Information System on the Organizations Financial Performance . . . . .</b>	<b>41</b>
Thabet Yusuf AlBastaki and Allam Hamdan	
<b>Asset Management Performance: Evidence from Ukraine . . . . .</b>	<b>51</b>
Maksym Slatvinskyi, Tetyana Demchenko, Inna Kosmidailo, and Nadiia Reznik	
<b>Factors Affecting Investor Switching Intention to Fintech Peer-To-Peer Lending . . . . .</b>	<b>63</b>
Shadiq Shakur Ahmad Baruna, Zuliani Dalimunthe, and Rachmadi Agus Triono	
<b>Contemporary Management Accounting Practices, Innovation and Organizational Performance of Service Organizations in Malaysia . . . . .</b>	<b>75</b>
Marwan Assim Alhasani, Ruhanita Maelah, and Amizawati Mohd Amir	
<b>Latest Challenges of International Migration for Ukraine: Theoretical and Empirical Aspects . . . . .</b>	<b>93</b>
Fedun Igor, Kudyrko Liudmyla, Shnyrkov Oleksandr, Novak Olena, Oleinikov Yuriy, and Uzba Valeriy	

<b>Optimization of Bank Lending in the Context of Modern Realities and Prospects of Financial Market Development</b> . . . . .	103
Nadiia Reznik, Galina Palchevich, Tatiana Melnyk, Valerii Podplietnii, and Volodymyr Shalimov	
<b>Management Accounting Information Usefulness, Digital Inclusion and Performance of SMEs</b> . . . . .	125
Haslina Hassan and Ruhanita Maelah	
<b>Capital Adequacy and Profitability Indicators: An Empirical Study on Palestinian Banks</b> . . . . .	145
Bahaa Abo Awwad	
<b>Market Reaction to an Audit Firm Change Decision</b> . . . . .	161
Dorine Mattar, Rim El Khoury, and Melissa Chaanine	
<b>Stakeholders of Yogyakarta Special Region and the Way They Manage Privilege Fund</b> . . . . .	185
Dessy Isfianadewi, Unggul Priyadi, and Lak Lak Nazhat El Hasanah	
<b>How Airline Service Quality (AIRQUAL) Affects Customer Decision Making in Airline Choices—A Conceptual Paper</b> . . . . .	201
Muhammad Izwan Mohd Badrillah, Adibah Shuib, and Shahrin Nasir	
<b>Impact of Audit Quality on the Firms Performance and the Mediation of Accrual Earning Management—Conceptual Paper</b> . . . . .	217
Osama Khader	
<b>Model of Relational Capital, Networking Customer Capability and Customer Retention to Increase Marketing Performance of SMEs</b> . . . . .	229
Naili Farida, Ida Bagus Nyoman, and Mochamad Taufiq	
<b>Organization of Management of Moral Risks of Banking Activity in a Modern Business Environment</b> . . . . .	243
Raisa Kvasnytska, Inna Dotsenko, Lesia Matviychuk, and Larysa Oliinyk	
<b>The Links Between Banking Theories and Financial Inclusion: A Theoretical Framework</b> . . . . .	251
Fadi Hassan Shihadeh	
<b>Examining the Practice of Tawarruq Credit Financing in Malaysian Credit Co-operatives</b> . . . . .	259
Rusni Hassan and Harith Hamidi	

**Corporate Governance, IT Governance, Financial Markets and Performance**

**The Impact of Robotic Process Automation (RPA) Technology in Banking Sector in Bahrain** . . . . . 273  
 Abdulrahman Rashed, Mohammed Alchuban, Allam Hamdan, and Bahaeddin Alareeni

**The Role of Governance in Analysing Waqf Performance** . . . . . 283  
 Nur Azni Mohd Zeni, Mohd Rizuan Abdul Kadir, and Noraina Mazuin Sapuan

**The Earnings Management in Jordanian Banks: Do Profitability Measures Matter?** . . . . . 305  
 Abdul Razzak Al-Shahadah, Dea’a Al-Deen Al-Sraheen, and Mohammad Khudari

**Study of Impact of Dematerialization of Shares on the Indian Stock Market** . . . . . 319  
 Shreya Bhadra and Ashok Chopra

**Performance Analysis of Indian Mutual Funds During Covid-2019** . . . . 337  
 Rekha Nagarajan and Ashok Chopra

**Psychological Contract Breach as Moderator to the Influence of the Organizational Justice on Job Satisfaction and Employee Procrastination** . . . . . 357  
 Sunarta Sunarta, Heru Kurnianto Tjahjono, Muafi Muafi, and Wisnu Prajogo

**The Impact of Working Capital Management on the Financial Performance of Industrial Companies Listed on the Palestine Stock Exchange** . . . . . 369  
 Alaa Akram Hosni Sulaiman and Hosni Shareif Hussein Shanak

**The Impact of Ownership Concentration on Stock Performance in the Palestinian Firms Listed in the Stock Exchange** . . . . . 385  
 Suhair I. Shumali and Mohammad K. Abuamsha

**The Importance of Compliance Management in SMEs Ambidexterity Towards Innovation Performance Aside of Corporate Openness: Theoretical Framework** . . . . . 403  
 Ari Pranaditya, M. Trihudiyatmanto, Heri Purwanto, and Alfian Yuda Prasetyo

**World Experience of Investing and Human Capital Development** . . . . . 417  
 Antonina Bazyliuk, Viktoria Khomenko, and Victoria Ilchenko

<b>Application of the Balanced Scorecard and Costing System Relying on Activities to Reduce Costs of Bank Services</b> .....	431
Marwan Rushdi Yousef and Asaad Ali Karam	
<b>Principal-Agent or Patron-Client? The Unspoken Concord of Indonesia’s Two-Tier Corporate Governance</b> .....	453
Novita Ikasari, Umanto, and Ika Sri Hartantiningsih	
<b>How Do Human Capital Empowerments Constitute the Organizational Performance?</b> .....	467
Saeed Nosratabadi, Parvaneh Bahrami, Hamed Motaghi, Mohar Yusof, and Azrul Fazwan Kharuddin	
<b>Corporate Social Responsibility and Organizational Culture</b>	
<b>The Impact of Ownership Structures on Corporate Social Responsibility Disclosure in Palestine</b> .....	485
Nafieh Assaf and Mohammed W. A. Saleh	
<b>Antecedent and Consequence of Work Life Balance in Islamic Perspective: Cases in Indonesia</b> .....	495
Muafi Muafi, Yuni Siswanti, and Wirman Syafri	
<b>A Qualitative Approach to Develop an Assessment Instrument for Homestay Operators’ Environmental Behaviour</b> .....	507
Nur Farihin Abd Hadi Khan, Yuhanis Abdul Aziz, Azmawani Abd Rahman, Rusmawati Said, and Nik Madeeha Nik Mohd Munir	
<b>Real-Time Dream House Decorator in the Virtual Reality Environment</b> .....	525
Muhammad Nur Aiman Bin Doktah Mokhtar, Ismahafezi Ismail, Wan Mohd Amir Fazamin Wan Hamzah, Syadiah Nor Wan Shamsuddin, and Mohd Azhar M. Arsad	
<b>The Determinants of Cooperative Sustainable Development: A Case Study of Malaysian Cooperatives</b> .....	539
Mohammad Ismail, Nurul Ashykin Abd Aziz, Noor Raihani Zainol, Mohd Nor Hakim Yusoff, and Rooshihan Merican Abdul Rahim Merican	
<b>Impact of Employee’s Engagement and Task Identity on Employee’s Retention Strategy Mediated by Job Satisfaction</b> .....	559
Ishaq Ibrahim, Kalsom Ali, Ibrahim Azzam Alzoubi, Mohammad Mahmoud Alzubi, Ali AL-Tahitah, and Kadhim Ghaffar Kadhim	



**Corporate-Community Engagement—The Case Study of Malaysian Palm Oil Companies in Indonesia** . . . . . 575  
 Mohd Rafi Yaacob, Siti Amaliya Mohd Radyi, Azwan Abdullah, Juliansyah Noor, Ahmad Firdause Fadzil, and Faizu Hassan

**Does Environmental, Social, and Governance (ESG) Disclosure Add Firm Value? Evidence from Sharia-Compliant Banks in Jordan** . . . . . 585  
 Ammar Daher Bashatweh, Thaer Ahmad Abutaber, Mohammed Jamal AlZu’bi, Laith Faris Abu KHader, Saad Ahmed Al-Jaghbir, and Islam Jamal AlZoubi

**Dynamics of Living Standards Based on Factors of the Remuneration System** . . . . . 597  
 Vasyly Brych, Nadiia Kalinichuk, Nataliya Halysh, Olena Borysiak, Dmytro Shushpanov, and Oleksandr Zagursky

**Influence of the Changing Organizational Culture on the Work Outcomes of Agile Teams in the Pandemic Era** . . . . . 609  
 Badri Srinivasan and Debarshi Mukherjee

**Formation of Stakeholders’ Interaction of Agricultural Insurance on the Basis of Corporate Social Responsibility** . . . . . 623  
 Oleg Skydan, Oleksandr Vilenchuk, Nataliia Valinkevych, Nataliia Kurovska, and Nadiia Reznik

**The Application of Planned Behavior Theory to the Adoption of Food Bank Program Among University Students** . . . . . 641  
 Nurul Hafizah Mohd Yasin, Nur Haiza Nordin, Nur Naddia Nordin, Nik Noorhazila Nik Mud, Siti Zamanira Mat Zaib, Fadhilahanim Aryani Abdullah, Nur Dalila Mat Yusoff, and Nurul Fardila Abdul Razak

**Understanding Green Environment Practices Through Local Authorities Perspectives** . . . . . 655  
 Muhamad Saufi Che Rusuli, Noraani Mustapha, Anis Amira Ab. Rahman, Norshahila Ibrahim, Jati Kasuma Ali, and Mohd Baharudin Ridzuan

**The Case of Malaysian Working Women: A Discussion on Glass Ceiling Phenomenon Towards Career Advancement** . . . . . 663  
 Nurul Azwa Mohamed Khadri, Norehan Abdullah, Cheah Yong Kang, Yusrinadini Zahirah MD Isa Yusuff, Syamsuriana Sidek, and Hazrina Hasbolah

**Financial Profiling and Possible Financial Inclusion of Rohingya Refugees in Malaysia** . . . . . 671  
 Mohd Safwan Ghazali and Tan Peck Leong

**Bibliometric Analysis of Optimization in Sports from 2011 to 2020 Using Scopus Database** . . . . . 689  
 Nurul Izyan Mat Daud, Fatihah Mohd, Noorshella Che Nawi, Mohd Asrul Hery Ibrahim, Wai Hong Tan, Zaifilla Farrina Zainuddin, and Nurul Hajar Mohd Yusoff

**The Quality of Corporate Social Responsibilities Disclosures in Malaysian Companies** . . . . . 703  
 Abdul Wahid Bin Mohd Kassim, Raman Bin Noordin, Junainah Jaidi, and Sulaiman Bin Tahajuddin

**Elucidating the Role of Human Governance to Eradicate Corruption** . . . . . 715  
 Noor Aida Md Noor, Ainul Mohsein Abdul Mohsin, and Siti Nabihah Abdul Khalid

**Islamic Social Finance, Modern Slavery of Children, and Sustainable Development Goals in Indonesia** . . . . . 729  
 Sari Lestari Zainal Ridho and Dodik Siswantoro

**The Benefits of Traditional Postnatal Practices: A Narrative Review of Cultural Beliefs vs Scientific Findings** . . . . . 747  
 Siti Fatimah Ab Ghaffar, Irma Izani Mohamad Isa, Normaizatul Akma Saidi, Nurul Hafizah Mohd Yasin, and Hasif Rafidee Hasbollah

**Sustainable Finance, Innovation and Business Uncertain Situations**

**Climate Risks in Tunisia** . . . . . 763  
 Haykel Hadj Salem, Nadia Mansour, and Salha Ben Salem

**Ensuring of Financial Stability of the Enterprise by Financial Management Tools** . . . . . 783  
 Novykova Innola, Chorny Roman, Chorna Nelia, Malik Mykola, and Rybak Andrii

**Financial Investment Management of Trade Enterprises: Analytical Aspect** . . . . . 793  
 Blakyyta Hanna, Barabash Nataliia, Pashkuda Tetiana, Susidenko Valentyn, Korol Svitlana, and Hordiienko Natalia

**Total Management of Customer Service Value - A Tool for Sustainable Changes in Service Behavior: Ukrainian Experience in Suburban Passenger Traffic** . . . . . 803  
 Olexander Bakalinsky, Victoria Ilchenko, Valentyna Khmylievska, and Svitlana Petrovska

**Factors Affecting Food Price Stability: Evidence from Turkey** . . . . . 819  
 Necla Ilter Kucukcolak and Ceren Sopaci

**Developing Resilient Financial Wellbeing Among Elderly Citizens in Malaysia** . . . . . 837  
 Noraina Mazuin Sapuan and Mohd Nur Fadzly Basar

**Challenges of Family Co-operative Sustainability: An Autoethnographic Narrative** . . . . . 849  
 Anis Amira Ab Rahman, Nor Hafiza Othman, and Noor Raihani Zainol

**Innovation of Islamic Economics, Finance and Marketing**

**Online Banking of Islamic Banks: The Customer’s Perceptions in Kelantan** . . . . . 859  
 Mohd Zulkifli Muhammad, Farah Hanan Muhamad, Caturida Meiwanto Doktoralina, Dzulkifli Mukhtar, Mohd Fahmi Ghazali, Muhammad Khalilur Rahman, and Noormariana Mohd Din

**Talent Shortage Assessment in Malaysia Islamic Banking Institution** . . . . . 875  
 Mohd Ikhwan Aziz, Hasannuddiin Hassan, Rooshihan Merican Abdul Rahim Merican, Sathiswaran Uthamapuhtran, Ahmad Syakir Junoh, and Marlisa Abdul Rahim

**Achieving Islamic Financial Literacy in Malaysia: Issues and Challenges** . . . . . 889  
 Azwan Abdullah, Muhammad Zulfaris Mohd Salleh, Mohd Nazri Zakaria, Noormariana Mohd Din, Mohd Ikhwan Aziz, and Mohd Zulkifli Muhammad

**Zakat Payers’ Satisfaction as a Mediator in the Relationship Between Service Quality and Zakat Payers’ Trust** . . . . . 897  
 Rufaidah Mat Nawi, Nadzirah Mohd Said, and Hazriah Hasan

**The Assumption of Unlimited Human Wants (AUHW) in Islamic Economics: A Tasawur Perspective** . . . . . 907  
 Mohd Zulkifli Muhammad, Muhammad Naqib Mat Yunoh, Farah Hanan Muhamad, Noor Raihani Zainol, Noormariana Mohd Din, Mohd Rushdan Yaso’, Ahmad Ridhuan Abdullah, and Nur Fairus Abd Hamid

**Developing Social Financial Resources Model for Islamic Microfinance to Reduce Unemployment Rate** . . . . . 925  
 Mohammed Yahya Alrashedi and Mustafa Omar Mohammed

**The Role of Islamic Psychological Contract on Authentic Leadership and Organizational Commitment** . . . . . 945  
 Tien Suhartini, Muafi Muafi, Widodo Widodo, and John Suprihanto

**Promoting Women’s Economic Empowerment Through Islamic Financial Inclusion in Lower Income Economies: Empirical Evidence from Yemen . . . . . 963**  
Lina Mohammed Abdo Alaghbari, Anwar Hasan Abdullah Othman, and Azman Bin Mohd. Noor

**Employee Engagement on Employee Performance: Islamic Perspective . . . . . 995**  
Noor Arifin, Heru Kurnianto Tjahjono, Arif Hartono, and Muafi Muafi

**Political Marketing of Muslim Minority Candidates in the Bali Legislative Election . . . . . 1005**  
Nur Sofyan, Naili Farida, Rina Martini, and Dewi Erowati

**Shariah and Accounting Principles for Calculating the Actual Cost of Lending Services Among Islamic Banks: Case of Malaysia . . . . . 1019**  
Abdulmajid Obaid Hasan Saleh, Fahd Al-Shaghdari, and Tahani Ali Hakami

**The Shariah Framework for Smart Contracts, an Original Analytical Study . . . . . 1033**  
Abdulmajid Obaid Hasan Saleh, Alaa Saleh Halawani, and Mohammad Abdelhamid Salem Qatawneh

# **Corporate Finance, Digitalization of Accounting**

# CatBoost: The Case of Bankruptcy Prediction



Mário Papík , Lenka Papíková , Jana Kajanová , and Michal Bečka 

**Abstract** Prediction of company bankruptcy is a field that develops mainly with the introduction of big data and data mining, and their application into actual business environment. In the field of classification methods, ensemble methods have significant position including various bagging or boosting algorithms. One of the newest algorithms in this field is the CatBoost algorithm developed in 2018. The aim of this manuscript is to apply the CatBoost algorithm to detect company bankruptcy based on financial and categorical data. The prediction model was created on a data sample of 89,447 small and medium-sized enterprises (out of which 295 went bankrupt) from Slovakia from the year 2019. The results indicate that the best CatBoost model achieved area under curve (AUC) value of 98.12%, and this model outperformed other models applying only financial or categorical variables. The contribution of this paper is the finding that application of categorical variables can contribute to better results than application of pure financial variables in CatBoost models. These findings should be taken into account by managers or institutions such as banks when creating their own bankruptcy prediction models.

**Keywords** CatBoost · Financial health · Bankruptcy prediction · Machine learning · Data mining

## 1 Introduction

Prediction of company financial health has undergone significant development over the last half-century. This development was conditioned by the development of computer technology and the large data volume to be processed. Due to this need to process large volumes of data, new methods (collectively called data mining) were developed. (Ringsdorf and Kajanová 2017). These methods use the computational performance of computers to search for helpful information hidden in data, thus replacing the originally applied statistical methods.

---

M. Papík (✉) · L. Papíková · J. Kajanová · M. Bečka  
Faculty of Management, Comenius University, Odbojárov 10, P. O. Box 95, 820 05 Bratislava, Slovakia

The original bankruptcy models date back to the 60 s of the twentieth century. Authors of studies such as Beaver (1966) and Altman (1968), or authors of later studies from the 1980s (Ohlson 1980; Taffler 1984) generally applied univariate models, discriminant analysis or logistic regression to predict company bankruptcy. These models were primarily developed on balanced data samples: the size consisted of only 79 bankrupting companies in the case of Beaver study, 46 in the case of Taffler study or only 33 companies in the case of Altman study. Despite the limitations arising from the data sample size, these studies, together with other studies (Alareeni and Branson 2013) have shown that the financial situation of companies can be predicted based on financial variables.

With the new millennium, many authors began to take advantage of opportunities arising from the development of computer technology, large databases, and new classification methods. Classification methods like discriminant analysis or logistic regression have been replaced by methods such as support vector machine (Shin et al. 2005; Tang et al. 2020; Zelenkov et al. 2017), neural networks (Tang et al. 2020; Tumpach et al. 2020; Zhou et al. 2016), naïve Bayes (Liang et al. 2015; Zelenkov et al. 2017), decision trees (Tang et al. 2020; Zelenkov et al. 2017), k-nearest neighbours (Farooq and Qamar 2019; Liang et al. 2015; Liang et al. 2016) or random forest (Papik et al. 2020; Zelenkov et al. 2017). However, these methods have also encountered their limitations. The current trend in predicting bankrupting companies is the application of various ensemble methods such as different types of bagging or boosting algorithms. (Son et al. 2019; Tang et al. 2020; Wang et al. 2018; Zieba et al. 2016) These studies proved to be very robust in prediction even in the case of large, imbalanced samples, where bankrupting companies represented significant minor class.

One of the most recent studies in this area has shown the significant potential of boosting method CatBoost, (Jabeur et al. 2021). This method has significant advantages compared to those of other boosting algorithms (e.g. XGBoost). However, the Jabeur study only worked with financial variables, although one of the main advantages of CatBoost is its ability to work with categorical variables as well.

The aim of this manuscript is to apply the CatBoost algorithm to the prediction of company bankruptcy based on financial and categorical variables. The contribution of this paper is its determination whether the application of non-financial variables can also contribute to statistically better results than just the application of financial variables. The novelty of this manuscript consists of the fact that, so far, no other authors have used categorical variables in CatBoost to predict company bankruptcy.

This paper is structured as follows: the first part provides a literature overview, the second part describes the research methodology of the used data sample, features, CatBoost algorithm and methodological overview. The third section explains the results and discussion. Finally, the last part of this paper includes concluding remarks.

## 2 Literature Review

The current trend in the prediction of company bankruptcy uses various ensemble methods such as AdaBoost (Zhou et al. 2016; Zieba et al. 2016), XGBoost (Son et al. 2019; Tang et al. 2020; Zieba et al. 2016), LightGBM (Son et al. 2019), Grabit (Sigrist and Hirsenschall 2019) or EXGB (Zieba et al. 2016). The authors of these studies generally demonstrated better performance of models that used one of these techniques than the performance achieved by logistic regression, neural networks, support vector machines, or random forest. Therefore, the literature review of this manuscript focuses on the ensemble methods.

Zieba et al. (2016) used an imbalanced sample of 700 bankrupting and 10,000 non-bankrupting Polish companies dating from 2000 to 2013. By application of several classification methods, this study showed that EXGB (AUC equal to 96%) outperformed other methods such as XGBoost with AUC 95% or AdaBoost with AUC at 92%. Therefore, all the above algorithms can be classified as boosting classification methods. Furthermore, the performance of these methods has shown their importance in the prediction of the financial health of companies in the future.

Zhou et al. (2016) researched almost 20,000 Chinese listed companies. As part of his study, Zhou did not directly address bankruptcy detection. However, he studied listing status. Listing status expresses the different levels of company risk. Unlike other studies, the Zhou research worked with four different risk categories in a company. Contrary to other existing studies, the best results in the Zhou study were not achieved by the boosting algorithm AdaBoost (this algorithm was the third-best with an accuracy of 87%), but the best results were achieved by the discriminant analysis (92%) and k-nearest neighbours (89%). These results could be caused by the need to solve a multi-class classification task.

Son et al. (2019), on a sample of 977,940 Korean companies (of which 23,137 went bankrupt), proposed an end-to-end data analytic approach to overcome issues in the company bankruptcy prediction area. This study included information on how to deal with missing values of outliers and highly skewed distribution. The best results among the five classification methods applied were achieved by XGBoost, with the value of AUC at 88%.

Tang et al. (2020) used a new approach to predict bankrupting companies in a balanced data sample with 424 Chinese companies. Instead of applying only financial and categorical variables, this study also focused on the possibilities to predict the financial health of companies through the words used in the company annual reports. The authors of this study showed that models combining all three types of variables achieved the best results. As only in a few studies, XGBoost achieved worse results than other alternative neural networks in the Tang study.

Sigrist and Hirsenschall (2019) studied different sample sizes (100, 200, 2,000 and 10,000), different default ratios (1%, 2%, 10% and 20%) and their effect on the performance of the developed models. The study compared four classification techniques, out of which the Grabit model achieved the best AUC results. The results showed that the Grabit model could provide substantial and significant gains in levels



of accuracy—for small sample sizes in particular. Furthermore, this model can also achieve increased levels of accuracy for datasets of moderate or large sizes.

Jabeur et al. (2021) compared several classification methods in a study of French companies from 2014 to 2016. The best results were achieved by CatBoost when compared to the results achieved by other applied methods such as XGBoost, GBN and neural network. CatBoost significantly exceeded the parameter of AUC compared to the AUC of other methods. As part of the Jabeur study, the authors also showed that it is possible to meaningfully predict a bankrupting company three years before the expected bankruptcy is declared. The limit of the Jabeur study was, in addition to a smaller data sample, that a smaller number of variables (18 financial variables) was used, and no classification variables were applied. Nevertheless, the AUC value the year before the bankruptcy was 99%, and the accuracy was 97%.

As the above overview of existing studies shows, the current trend of machine learning in the prediction of company bankruptcy is mainly the application of boosting algorithms such as XGBoost, AdaBoost, LightGBM or, more recently, CatBoost. In all mentioned existing studies, where these methods have been applied, except Tang et al. (2020), the results were better than results achieved by other machine learning algorithms (e.g. the neural network, support vector machine). Furthermore, the measured AUC values were mainly at the level of more than 88%, and the CatBoost algorithm is no exception, with an AUC value of almost 100% in a recently published study. Due to this reason, the aim of this paper is to apply the CatBoost algorithm to predict bankrupting companies by financial and categorical variables.

### 3 Research Methodology

The research methodology chapter is divided into the following parts: Sample details, Features, CatBoost and Methodological Overview.

#### 3.1 *Sample Details*

Financial data of Slovak SMEs was collected for 2019. European Union recommendation no. 2003/361 defines SMEs as companies with a) number of employees below 250, and b) sales turnover below 50 million EUR or c) value of total assets below 43 million EUR. The data source of this paper was the Finstat database, which contains financial statements of companies operating in Slovakia. Overall, 89,742 financial statements were collected—89,447 of the SMEs have not reached bankruptcy event whilst 295 SMEs have experienced bankruptcy event.

Sector distribution of analyzed companies according to the NACE categorization is listed in Table 1, along with the default rate. A sector with the highest default rate is the Chemistry and plastics sector with a default rate of 1.79%. On the other hand,

**Table 1** Sector distribution—NACE categories

Sector	Distribution %	Default rate %	Sector	Distribution %	Default rate %
Advertising	1.81	0.00	Intermediary activity	2.89	0.15
Agriculture and forestry	2.38	0.80	Law, consulting and accounting	6.98	0.16
Automobile industry	0.15	0.74	Media, publishing and culture	1.54	0.15
Clothing and footwear	0.59	0.94	Metalworking and metallurgy	2.71	0.90
Construction	12.32	0.53	Production—other	0.40	0.00
Development and civil engineering	3.37	0.17	Real estate	4.41	0.25
Education	0.99	0.34	Research and development	1.33	0.34
Electrical engineering	0.84	0.13	Retail	8.86	0.24
Energy and mining	0.63	1.41	Sales and maintenance of vehicles	2.27	0.10
Engineering	1.30	0.94	Service	5.44	0.10
Finance	1.89	0.12	Telecommunications	0.28	0.39
Food processing industry	1.24	0.99	Tourism and gastronomy	6.51	0.38
Gambling	0.15	0.75	Transportation and logistics	5.18	0.28
Health care	8.70	0.05	Waste management	0.47	0.71
Chemistry and plastics	0.69	1.79	Wholesale	7.47	0.40
Information technology	4.90	0.11	Wood and paper	1.32	0.59

*Source:* own source

Advertising sector has achieved a default rate of almost 0%. The default rate of the entire data sample is 0.33%, and therefore this data sample can be considered as significantly imbalanced against positive class (bankruptcy event).

### 3.2 Features

The collected data sample was used to calculate 26 financial ratios and 6 categorical variables. These variables are among the most frequently used variables in recent studies dealing with company bankruptcy. The list of these variables and their formulas are listed in Table 2. This study works with three sets of variables: a) all variables from Tab 2, b) 26 financial ratio variables, and c) six categorical variables. These three sets of variables are then compared against one another by the application of three different resampling methods.

Since the categorical variables are dataset specific, their explanation is provided in the following paragraph. For the industrial sector, there were 32 categories identified—they are further specified in Table 1. For the number of employees, there were three categories identified—micro (less than ten employees), small (less than 50 employees) and medium (less than 250 employees). All companies employed up to 250 employees because the data sample consists only of SMEs. In the case of organization forms, there were two categories—limited liability company and joint-stock company, one of the most common forms of business in Slovakia. The member of the board variable represented the number of management board members—the values running from 1 to 12. None of the management boards in the data sample had more than 12 members. Gender diversity variable was an indicator with two values. The gender diversity variable equalled 0 if no woman was represented in the management board and 1 if at least one woman was represented. As many as half of the companies had at least one woman represented within their management board. The last variable applied in this manuscript was the ownership which was represented by eight categories: cooperative society, international—private, international—public, private—domestic, statutory, owned by local government, foreign and church-owned.

### 3.3 CatBoost

This manuscript has applied the CatBoost method as the only classification method. CatBoost belongs to the gradient boosted binary trees. This algorithm aims to minimize the loss function of a model by adding weak learners using a gradient-descent like procedure. Unlike other gradient boosted methods, CatBoost can work with categorical features and looks for a very efficient optimal solution within its calculation. (Dorogush et al. 2018).

Since the CatBoost algorithm works with binary decision trees, output function  $h(x)$  has the following form (1):

$$h(x) = \sum_{j=1}^J b_j \mathbb{1}_{(x \in R_j)} \quad (1)$$

**Table 2** Financial and categorical features

Type	Financial ratio	Short name	Formula
Liquidity	Current ratio	CR	Current assets/Current liabilities
	Quick ratio	QR	(Current Assets—Inventories—Prepaid)/Current Liabilities
Leverage	Debt to Equity D/E ratio	DER	Total liabilities/Total shareholders' equity
	Total debt to assets ratio	DAR	Total liabilities/Total assets
	Long term debt to assets ratio	LDAR	Long-term liabilities/Total assets
	Shareholders' equity to assets	EAR	Total shareholders' equity/Total assets
	Loans to assets ratio	LOAN	Total loans/Total assets
	Interest coverage ratio	ICR	Earnings Before Interest Taxes/Interest expense
	Debt to EBIT ratio	FLR	Total Liabilities/Earnings Before Interest Taxes
	Debt to EBITDA ratio	DEBI	Total Liabilities/Earnings Before Interest Taxes Depreciation & Amortization
Profitability	Return on equity	ROE	Earnings Before Interest Taxes/Total shareholders' equity
	Return on assets	ROA	Earnings Before Interest Taxes/Total assets
	Return on sales	ROS	Earnings Before Interest Taxes/Total sales
	Return on investment	ROI	Earnings Before Interest Taxes/Cost of Investment
Efficiency	Asset turnover ratio	ATR	Net sales value/Average of total assets
	Receivables turnover ratio	RTR	Net sales value/Average of total receivables
	Inventory turnover ratio	ITR	Net sales value/Average of total inventory
	Fixed asset turnover ratio	FATR	Net sales value/Average of fixed assets
Growth	Receivable's growth	RG	(Receivables current year—Receivables previous year)/Receivables previous year
	Inventory growth	IG	(Inventory current year—Inventory previous year)/Inventory previous year
	Income from principal business operations growth	IPBOG	(Income from principal business operations current year—Income from principal business operations previous year)/Income from principal business operations previous year

(continued)

**Table 2** (continued)

Type	Financial ratio	Short name	Formula
	Sales growth	SG	(Sales current year—Sales previous year)/Sales previous year
Other	Free cash flow (logarithm)	FCF	ln(Cash from Operations—Capital Expenditures)
	Working capital (logarithm)	WC	ln(Current assets—Current liabilities)
	Total assets (logarithm)	SIZE	ln(Total assets)
	Company age (logarithm)	AGE	ln(Company age)
Categorical	Industrial sector	SEC	32 categorical variables
	Number of employees	EMP	3 categorical variables
	Organisation form	ORG	2 categorical variables
	Member of board	BOAR	12 categorical variables
	Gender diversity in board	GEND	2 categorical variables
	Ownership	OWN	8 categorical variables

Source own source

where  $J$  represents the number of leaves,  $x$  corresponds to the explanatory variable,  $b_j$  is the predicted value in the disjoint region, and  $R_j$  corresponds to the tree's leaves. (Prokhorenkova et al. 2018).

So far, the CatBoost classification method has applied in the study of company financial health by Jabeur et al. (2021) but only for financial ratios. Financial health analysis through CatBoost using categorical variables has never been applied before. CatBoost calculation in this manuscript used functions from package “catboost” of version 0.16.5 in RStudio.

### 3.4 Methodological Overview

The methodological overview of this manuscript is shown in Fig. 1. The analytical process of this study consists of 1) collection of financial data from the Finstat database, 2) splitting sample into ten folds (nine folds for training sample and one fold for testing sample—this approach is repeated ten times with each fold used as a testing sample exactly once) 3) resampling of the training dataset (by three methods—no resampling, random oversampling and SMOTE), 4) transformation and scaling datasets 5) development of the CatBoost models, 6) model validation on testing datasets, 7) calculation of final average performance metrics through tenfold

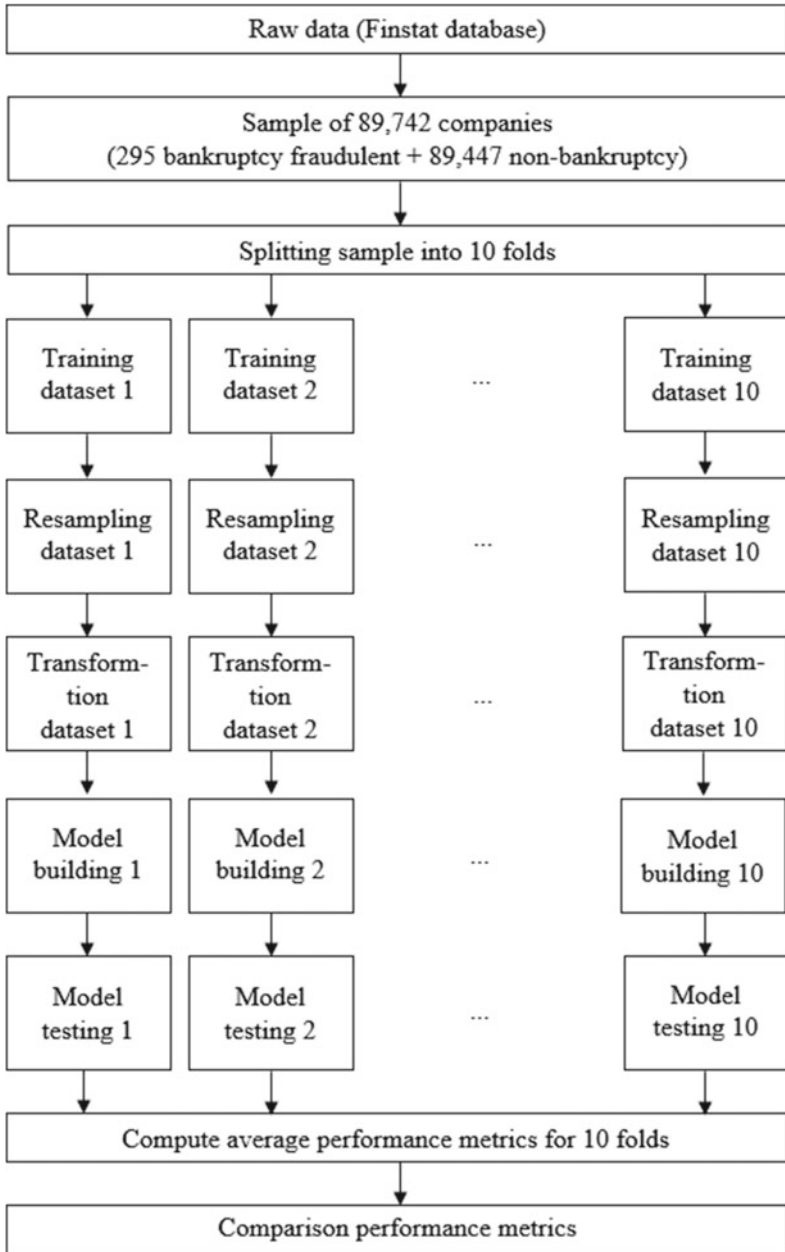


Fig. 1 Methodological overview

cross-validation and 8) comparison of performance metrics. tenfold cross-validation was also applied by other authors like Liang et al. (2015), Tang et al. (2020) and Wang et al. (2018). Studies to apply this approach achieve the most robust results and higher results of performance metrics.

This manuscript uses metrics of accuracy, sensitivity, specificity, and AUC as relevant performance metrics. Since the used data sample is highly imbalanced (295 to 89,447 companies), the AUC metric has been used as the main performance metric. In addition, AUC provides aggregate measurement of performance across all possible classification thresholds. Based on this metric, the best CatBoost model was identified across the individual datasets used (all features, only financial features, only categorical features) and the individual resampling methods (no resampling, random oversampling, SMOTE).

## 4 Results and Discussion

Results obtained in this manuscript can be divided into three parts—descriptive statistics, evaluation of the importance of used features, and evaluation of the performance metrics for particular feature samples and resampling methods.

Table 3 provides an overview of the descriptive statistics for the financial ratios used in this manuscript. Descriptive statistics (median and standard deviation) are divided according to whether a company declared bankruptcy or not. Statistically significant differences among medians were tested by the Kruskal–Wallis test. Significant differences between groups were observed only among the variables: Current ratio (CR), Quick ratio (QR), Asset turnover ratio (ATR), Receivables turnover ratio (RTR), Fixed asset turnover ratio (FATR) and Receivable’s growth (RG). As shown, the companies declaring bankruptcy have achieved statistically significantly lower values in all the above indicators, which can be explained by the decrease in their liquidity and efficiency.

Relative feature importance in the form of a box plot achieved on all ten folds and three resampling methods (30 measurements) is shown in Fig. 2. Figure 2 shows that among the ten features with the highest relative feature importance, six can be classified as leverage ratios and two as profitability ratios. Therefore, it can be assumed that the unfavourable financial situation of a company can be predicted based on its level of debt and ability to generate profit. The feature importance gained from CatBoost thus differs from the differences identified through the Kruskal–Wallis test (mainly the liquidity and efficiency ratios). These results also contradict the study by Jabeur et al. (2021), which considered profitability and liquidity ratios as the most relevant features to detect problems in a company’s financial health.

As far as categorical variables are concerned, the greatest relative importance has been achieved by the classification of a company into an industrial sector. Nevertheless, the relative feature importance for this variable is within the weaker half of all features. The relative feature importance of the other categorical features was one of the lowest among all the tested variables. Number of employees, organization form,

**Table 3** Descriptive statistics

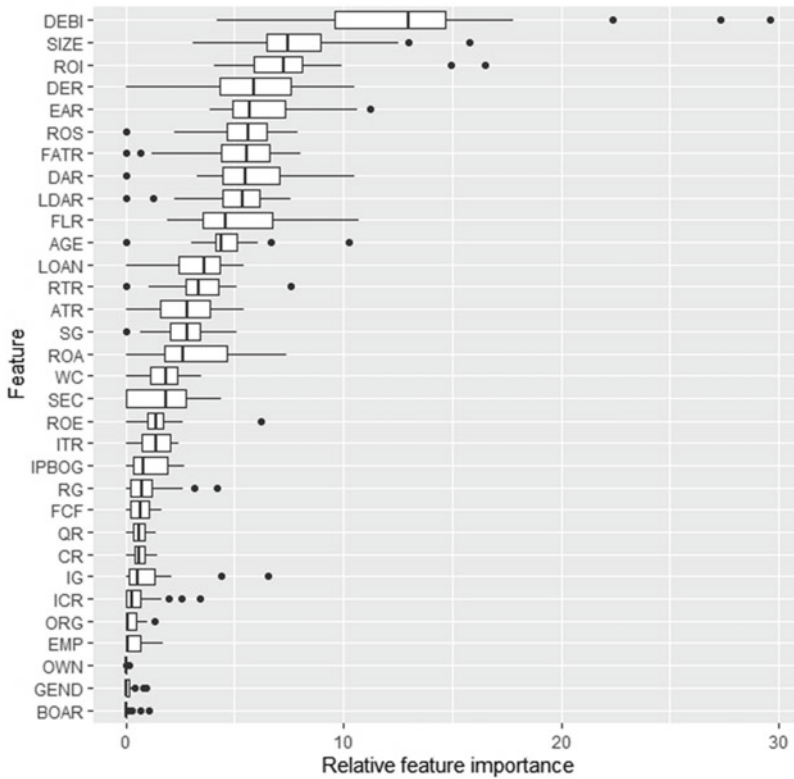
Feature	No bankruptcy		Bankruptcy		Krusk.- Wall. t	P-value
	Median	St.dev.	Median	St.dev.		
CR	0.55	183.59	0.33	3.19	0.006	**
QR	0.84	458.22	0.60	3.21	0.049	*
DER	0.69	18,577.60	0.25	53.93	0.291	
DAR	0.60	89.88	0.95	122.21	0.059	
EAR	0.40	89.88	0.05	122.21	0.059	
LDAR	0.00	6.06	0.02	12.49	0.102	
LOAN	0.00	0.70	0.00	8.88	0.155	
FLR	1.70	18,577.60	1.25	55.10	0.292	
ICR	100.00	11,450.69	3.99	20,352.53	0.111	
DEBI	2.17	29,241.63	-0.48	333.89	0.406	
ROE	0.12	74.57	0.09	9.09	0.201	
ROA	0.04	30.29	-0.04	120.07	0.115	
ROS	0.03	134.96	-0.05	217.45	0.669	
ROI	0.04	30.28	-0.03	119.15	0.118	
ATR	1.57	55.88	0.76	2.37	0.000	***
RTR	7.76	7365.48	3.44	212.75	0.001	***
ITR	1.90	44,326.19	3.68	2554.11	0.040	
FATR	3.39	19,133.43	1.54	179.24	0.013	*
RG	0.06	417.02	-0.18	1.22	0.000	***
IG	1.00	176.04	0.00	2531.27	0.329	
IPBOG	-0.18	867.09	-0.48	240.38	0.338	
SG	0.05	4943.88	-0.18	2.34	0.226	
FCF	-0.27	63.81	-0.03	50.87	0.986	
WC	0.30	86.48	-0.05	109.45	0.091	

Source: own source based on calculation in RStudio

members of the board, gender diversity in the board or company ownership did not have any significant impact on whether the company will declare bankruptcy in the coming year or not.

Table 4 contains achieved values of performance metrics for created CatBoost models on three feature samples and three resampling methods. Based on results of AUC metrics, it can be assumed that a) the best model achieved AUC of 98.12% with random oversampling, and both financial and categorical variables b) random oversampling overcame values of both SMOTE and no resampling approach c) the combination of financial and categorical variables has always achieved better results than just financial variables—this does not apply to no resampling approach—but this difference was not statistically significant d) for the application of only six categorical variables, AUC was at least 60.95% level, and application of data resampling has





**Fig. 2** Relative feature importance by CatBoost

**Table 4** Performance metrics for CatBoost

Resampling	Features	Accuracy	Sensitivity	Specificity	AUC	Sign
Without resampling	Categorical	65.25%	51.70%	65.31%	60.95%	***
	Financial	96.03%	90.01%	96.05%	96.80%	
	Both	93.68%	92.34%	93.68%	96.30%	
Random oversampling	Categorical	66.60%	74.23%	66.57%	73.23%	***
	Financial	93.27%	95.44%	93.27%	97.77%	
	Both	94.79%	93.64%	94.79%	98.12%	
SMOTE	Categorical	69.71%	67.42%	69.72%	72.11%	***
	Financial	93.75%	94.78%	93.75%	97.71%	
	Both	95.16%	93.15%	95.17%	98.00%	

Source: own source based on calculation in RStudio

achieved values up to 72.11%. These results are comparable to the study by Jabeur et al. (2021), in which the AUC of the developed CatBoost model was 99.4% and accuracy 97.4%.

## 5 Conclusion

The aim of this manuscript was to apply the CatBoost algorithm to the prediction of company bankruptcy based on financial and categorical data. This manuscript has brought the following five findings: 1) there is a difference in the selection of relevant features based on standard mathematical techniques (Kruskal–Wallis test)—liquidity and efficiency ratios were preferred—and based on data mining techniques (CatBoost)—leverage ratios were preferred; 2) out of all categorical features, the most relevant variable was the classification into the industrial sector, other categorical variables were not relevant 3) combination of categorical and financial ratios in CatBoost models can bring better results, but these results are not statistically significantly better, 4) CatBoost model developed on resampled data sample achieves better performance metrics than the model not created on resampled data sample, and 5) CatBoost achieves very interesting results even on large data samples (accuracy 94+ %, AUC 98+ %). Based on these findings, we can conclude that CatBoost models have the potential to achieve high predictive performance. This performance is even slightly better when categorical variables are used. However, the vast majority of these variables make only a small contribution to the improvement of the created models' performance metrics. These findings should be considered by managers or institutions such as banks when creating their own default prediction models.

This manuscript, however, also has its limitations. The first limitation is the composition of the data sample, which consists of Slovak small and medium-sized enterprises. The data sample structure across industrial sectors copies the representation of these sectors in the Slovak economy and information about relevant features can only be transferred to comparable small open economies in Central and Eastern Europe. The second limitation is the range of used categorical variables. The ratio between financial and categorical variables was 28:6 and thus, financial variables significantly dominated over the categorical variables. Possible improvement of the prediction model with all variables compared to the model with only financial variables could have been more significant had the sample with categorical data contained more variables. The last limitation can be the blackbox character of the developed model. While in the case of Altman's Z-score, there is easily applicable equation, in the case of findings of this manuscript, only information about the performance metrics of the developed model is provided. This partially complicates the possible cross-validation of these findings on other datasets.

This study does not cover all areas of possible future research. Future studies could therefore focus on the application of CatBoost to data samples from other countries (large economies like the USA or China) or financial statements prepared with different periodicity (e.g. quarterly financial reports). It is also recommended

to continue to study categorical variables describing characteristics of companies, their management or the region where these companies operate. The addition of this classification into the analysis might provide progress in this area of study.

**Acknowledgements** This manuscript was supported by the Faculty of Management, Comenius University in Bratislava, Slovakia and by VEGA 1/0393/21 titled Impact Analysis of Restrictive Measures and Government Aid Associated with Coronavirus on Financial Health of Small and Medium-Sized Enterprises in Slovakia.

## References

- Alareeni, B., Branson, J.: Predicting listed companies' failure in Jordan using Altman models: a case study. *Int. J. Bus. Manag.* **8**(1), 113 (2013)
- Altman, E.I.: Financial ratios, discriminant analysis and the prediction of corporate bankruptcy. *J. Financ.* **23**, 589–609 (1968)
- Beaver, W.H.: Financial ratios as predictors of failure. *J. Account. Res.* **4**, 71–111 (1966)
- Dorogush, V., Ershov, V., Gulin A.: CatBoost: gradient boosting with categorical features support. *Mathematics, Computer Science* (2018)
- Farooq, U., Qamar, M.A.J.: Predicting multistage financial distress: reflections on sampling, feature and model selection criteria. *J. Forecast.* **38**(7), 632–648 (2019)
- Jabeur, S.B., Gharib, Ch., Mefteh-Wali, S., Arfi, W.B.: CatBoost model and artificial intelligence techniques for corporate failure prediction. *Technological Forecast. Soc. Change* **166**(C) (2021)
- Liang, D., Tsai, C.-F., Wu, H.-T.: The effect of feature selection on financial distress prediction. *Knowl.-Based Syst.* **73**, 289–297 (2015)
- Liang, D., Lu, C.-C., Tsai, C.-F., Shih, G.-A.: Financial ratios and corporate governance indicators in bankruptcy prediction: a comprehensive study. *Eur. J. Oper. Res.* **252**(2), 561–572 (2016)
- Ohlson, J.A.: Financial ratios and the probabilistic prediction of bankruptcy. *J. Account. Res.* **18**(1), 109–131 (1980)
- Papík, M., Papíková, L., Kajanová, J.: Bankruptcy prediction in chemical industry. *Przem. Chem.* **99**(12), 1762–1769 (2020)
- Prokhorenkova, L., Gusev, G., Vorobev, A., Dorogush, A.V., Gulin A.: CatBoost: unbiased boosting with categorical features. *Neural Inf. Process. Syst.* (2018)
- Ringsdorf, B., Kajanová, J.: Predictive Analytics in Manufacturing. In: *Global Scientific Conference on Management and Economics in Manufacturing*. Technická Univerzita. Zvolen, Slovakia (2017)
- Shin, K.-S., Lee, T.S., Kim, H.: An application of support vector machines in bankruptcy prediction model. *Expert Syst. Appl.* **28**(1), 127–135 (2005)
- Sigrist, F., Hirsenschall, C.: Grabit: gradient tree-boosted Tobit models for default prediction. *J. Bank. Finan.* **102**, 177–192 (2019)
- Son, H., Hyun, C., Phan, D., Hwang, H.J.: Data analytic approach for bankruptcy prediction. *Expert Syst. Appl.* **138** (2019)
- Taffler, R.J.: Empirical models for the monitoring of UK corporations. *J. Bank. Finan.* **8**(2), 199–227 (1984)
- Tang, X., Li, S., Tan, M., Shi, W.: Incorporating textual and management factors into financial distress prediction: a comparative study of machine learning methods. *J. Forecast.* **39**(5), 769–787 (2020)
- Tumpach, M., Surovičová, A., Juhászová, Z., Marci, A., Kubičková, V.: Prediction of the bankruptcy of Slovak companies using neural networks with SMOTE. *Ekonomický Časopis* **68**(10), 1021–1039 (2020)

- Wang, G., Chen, G., Chu, Y.: A new random subspace method incorporating sentiment and textual information for financial distress prediction. *Electron. Commer. Res. Appl.* **29**, 30–49 (2018)
- Zelenkov, Y., Fedorova, E., Chekrizov, D.: Two-step classification method based on genetic algorithm for bankruptcy forecasting. *Expert Syst. Appl.* **88**, 393–401 (2017)
- Zhou, L., Tam, K.P., Fujita, H.: Predicting the listing status of Chinese listed companies with multi-class classification models. *Inf. Sci.* **328**, 222–236 (2016)
- Zieba, M., Tomczak, S.K., Tomczak, J.M.: Ensemble boosted trees with synthetic features generation in application to bankruptcy prediction. *Expert Syst. Appl.* **58**, 93–101 (2016)

# Review of the Public Sector Organizations' Environment: Accounting and Internal Control Systems, and Audit Quality



Husni Ibrahim Asad Rabaiah, Mustafa Mohd Hanefah, Rosnia Masruki, and Nurul Nazlia Jamil

**Abstract** The external auditor's evaluation of the audit client's environment, in particular the accounting and internal control systems, is crucial in order to provide a high audit quality. Especially in PSOs, the importance of this evaluation increases because of their specific characteristics, such as the type of PSO, laws and regulations, governance method (including internal auditing), and accounting information system (including the accounting basis). The organization's management is responsible for establishing and maintaining an efficient accounting and internal control systems, but the external auditor is responsible for evaluating and determining the efficacy of these systems in order to determine whether or not to rely on them and to what degree. This paper reviews the main elements of environment of the PSOs which they may have significant impact on the audit quality and contributes to audit quality literature by reviewing the characteristics of PSOs, particularly the internal control and its effects on the audit quality. And it provides a basis for discussing the effect of several potentially elements of environment of PSOs on audit quality for future research.

**Keywords** Internal controls · Accounting basis · Internal auditing · Laws and regulations · Audit quality

## 1 Introduction

A high audit quality increases the confidence of the public with the audit financial statements which are issued by the governmental accountants, but this confidence according to Kusumawati and Syamsuddin (2018) decreases, because some corruption were still found in the government agencies that got unmodified auditing opinion. All the scandals and the corruption in the public sector are related to control system which the accounting and auditing procedures are the core it. Corruption is reduced

---

H. I. A. Rabaiah (✉) · M. M. Hanefah · R. Masruki · N. N. Jamil  
Universiti Sains Islam Malaysia, 71800 Nilai, Negeri Sembilan, Malaysia

as governments move ahead in public-sector accounting reforms by adopting International Public Sector Accounting Standards (IPSAS), or implementing accounting accrual basis (Cuadrado-Ballesteros et al. 2019).

International Auditing and Assurance Standard Board (IAASB) as part of International Federation of Accountants (IFAC) stated in its proposed strategy for 2020 to 2023 this objective “Sustained public trust in financial and other reporting, enhanced by high-quality audits, assurance and related services engagements, through delivery of robust global standards that are capable of consistent and proper implementation”, and this objective concerns 128 jurisdictions uses International Auditing and Assurance Standards (IAASs) or committed to use them (IAASB 2019). The quality of audit is still an essential requirement for all stakeholders of the audit profession in the present and in the future, but till now no agreement among the practitioners, regulators, and researchers on one definition and valid measurements for the audit quality, therefore, the audit quality is defined and measured in various ways (Bauer 2015; Griffith et al. 2015; Aobdia 2016; Zhukun et al. 2018). This returns to that the actual audit quality which is unobservable before and when an audit is performed (Chadegani 2011), also, the auditors’ efforts in audit engagement is unobservable (Donatella et al. 2019), moreover the differences in the regulators and the culture in cross-countries (Tepalagul and Lin 2015). Therefore, most the previous studies have studied many variables as proxies of the audit quality to measure the audit quality either in private or public sector organizations (Chadegani 2011). For examples on the audit quality proxies as follow: industry specialization (Mohd Kharuddin et al. 2019), audit firm size (Harris et al. 2019), audit fees (Ghafran and O’Sullivan 2017), audit team structure and auditor years tenure (Cameran et al. 2017), time budget pressure (Kesuma 2019), locus of control, audit ethics, time pressure and a commitment to deviant behavior in audit (Siregar et al. 2018), cognitive moral development and moral evaluation factors (Purnamasari 2019).

These proxies either related with the elements of audit inputs, outputs, or process could not give relevance and valid measures for the audit quality if they are used individually, bilaterally or more, because each proxy indirectly measures audit quality and has some weaknesses (Bell et al. 2015; Gaynor et al. 2016; DeFond and Zhang 2014). And some studies found some conflicts in the result of using the same proxy of the audit quality, such as non-audit services (NAS) (Tepalagul and Lin 2015; Ashbaugh et al. 2003; Knechel et al. 2012; Chu and Hsu 2018), and audit tenure leads to mix results (Mali and Lim 2018; Hartono et al. 2016; Azizkhanian et al. 2018; Kyriakou and Dimitras 2018). However, there are some definitions for the audit quality that disclosed the concepts of it, for example, Ismail et al. (2019) confirmed that the famous audit quality definition and widely used among the researchers is the DeAngelo (1981) definition which defined the audit quality as the probability that an auditor will discover a breach in the financial reporting system and report this breach in the audit report. While Dickins et al. (2018) defined the audit quality as the auditor’s ability to detect and report errors or fraud, meet the regulator professional procedures, guidance, and the related laws, or meet the needs of stakeholders. As for Chadegani (2011) revealed that the actual high audit quality means providing financial statements without errors, fraud, omissions or biases (Chadegani 2011). Most of

these definitions focused on the auditor characteristics and audit firm attributes such as the auditor's ethics, auditor's independence, auditor's competence, audit fees, and audit firm size (Kusumawati and Syamsuddin 2018; Ismail et al. 2019; Butcher et al. 2013; Boon et al. 2008), but there is scarcity in the prior studies of audit quality in PSOs particularly the effect of the effectiveness of the client internal controls, particularly, the internal auditing, the accounting basis, and the laws and regulations.

This paper will focus on the unique environment of the PSOs particularly the effectiveness of internal control and its relationship with the audit quality through the discussing the following topics: the environment of the PSOs and the external audit quality in the previous studies, the nature and the types of the PSOs, financial reporting system in the PSOs, the laws and regulations in the PSOs, the governance of the PSOs, the auditing of the PSOs, and the internal control which includes the internal controls in the context of PSOs, the internal auditing, the accounting basis, and the laws and regulations.

## **2 The Environment of the PSOs and the External Audit Quality in the Previous Studies**

The previous studies have identified audit quality attributes which can contribute in assessments of audit quality in the PSOs. This paper discusses main issues of the environment of the PSOs as follow: the nature and the types of the PSOs, financial reporting system, the laws and regulations, the governance method, the auditing, and the internal control through discussing these factors: the internal auditing, the accounting basis, and the laws and regulations.

### ***2.1 The Nature and the Types of the PSOs***

PSOs include all entities of federal government, states governments, municipalities (cities and towns), joint services councils, governmental universities and hospitals, governmental corporations, and the entities are established by government by statute, or if they have one or more of the following conditions: their directors are publicly elected or appointed by governmental officials, they have the power to designate and enforce a tax levy, they have the authority to directly issue debt with interest exempt from federal tax, or they face the possibility that the government will dissolve them unilaterally and assume their assets and liabilities (Ives et al. 2004). The governmental organizations play a vital role in providing the basic services such as electricity, water, health, education, garbage collection and others (Edmonds et al. 2020; Boex 2010). PSOs differ from the business companies in their purposes, while the business companies focus on achieving a maximum profit to the benefit of their owners or shareholder (investors), the PSOs organizations focus on the benefits of

the public community (Rashman et al. 2009). Carhill and Kincaid (1989) revealed that public sector organizations activities must be authorized by legislation through a strict framework. And these organizations are considered as service-oriented without regarding to the cost factors and profitability incentives (Goodwin 2004). The market conditions do not rule the operating activities of the PSOs as the business organizations which they consider the figures of the amount of sales, expenses, and the net income as direct indicators for the decision makers when they make any decision (Visser and Togt 2016). In general the PSOs work under political rules and many laws and regulations, and they be going to attain and achieve the primarily policy goals and objectives (Visser and Togt 2016). But the hybrid organizations, such as the municipal corporations, have public and private characteristics, and they are operated at the intersection of the market and the public sector purposes (Grossi and Thomasson 2015).

The absence of ownership interests in the PSOs results in less strict governance and accountability mechanisms as compared to business entities which ownership interests are divided into marketable shares or owned by individual investors (McGowan et al. 2018). In the municipalities the governance body, such as mayors and the members of the council is appointed by the higher authority or elected by public election, always those members have no professional skills in management, technical, accounting and finance (Axén et al. 2019). The PSOs operate their activities on the basis of achieving the balance between available income and the expenditure over a given period, therefore the role of public sector entities is providing the public services to the citizens as a form of wealth redistribution (Eulner and Waldbauer 2018). The importance of the PSOs increased in most countries especially in 1970s to 1980s, therefore the size and budgets of the public sector entities increased (Carrington et al. 2019), and the new public management (NPM) is adopted (Lonsdale 2000).

## ***2.2 Financial Reporting System in the PSOs***

The managements in PSOs are responsible for operating appropriate financial reporting system according to the agency theory (Dewi et al. 2019). Nur (2017) stated that the management in the reporting system works as agent who provides valuable information to the related stakeholders as principal in order to enable them from evaluating of the accountability and deciding in the issues of social, economic, and political decisions. Also the stakeholders theory determined that the related stakeholders of the entity have right to receive proper information about the performance of the entity that may influence on their decisions, therefore the management in the governmental units is responsible for issuing the financial statements to the interested users (Anggriawan and Yudianto 2018). These statements must be useful and relevant for decision makers particularly in the accountability (Dewi et al. 2019). Accountability required the truth and factual, credible and reliable, comparable information (Eulner and Waldbauer 2018), relevant and understandable (Dewi et al. 2019). IFAC



(2012) declared that if the government wants to be trusted, it should issue correct and all information which related to its financial transactions either expenditure or revenues, in order to demonstrate the accountability and good governance and to support its own reliability.

The basis of the financial reporting system in PSOs in the world is unlike as it the private sector which uses accrual accounting basis only around the world, but the PSOs may use more than one basis such as cash basis, modified cash basis, modified accrual basis, and full accrual basis. According to IFAC International Public Sector Financial Accountability 2018 Status Report that around 25% of countries (150 jurisdictions in the world 2018) report their financial statements on accrual accounting basis for governmental entities, while 45% transferred partially from cash to accrual accounting basis, but 30% of the governments still report in cash basic (IFAC, 2018). Although the application of these bases is not uniform at the same level, the trend of using the accrual accounting basis in accounting systems in the public sector around the world is growing, but there are many differences due to the content, timing, and method of adoption accrual accounting basis (Christiaens et al. 2010; Cohen et al. 2019).

Taylor and Rosair (2000) stated two types of the financial statements in the PSOs related with financial position (Balance Sheet) and performance of public (Performance Statement) and these statements are considered as the accountability tools, and they ruled with some regulations in order to be issued in specific period (Cohen and Leventis 2013) and these regulations may require additional statements depending on the country polices such as Budget Realization Report, Cash Flows Statements, Changes in Equity, and Disclosure Notes (Dewi et al. 2019; Brusca et al. 2015). Therefore the implementation of the financial reporting system and issuing the financial statement in specific period according the regulation will be costly, because it needs many services such as installing and running accounting system, operating employees, consultants, controls procedures, internal and external auditors, developing the regulatory systems, judicial procedures, and using different tools to present the financial reports (Cohen and Leventis 2013). As a result, the quality of financial reports in PSOs will be based on the nature of government regulations in each country. As an outcome, there is a growing demand for more relevant, uniform, and standard financial statements to be used in an increasing accountability function in PSOs, in order to aid in good governance, improve decision-making processes, and face the challenges (Rossi et al. 2016).

IFAC through its part International Public Sector Accounting Standards Board (IPSASB), which started in 1986 as the Public Sector Committee of the International Federation of Accountants (IFAC) and in 2004 became an independent standard setting board supported by IFAC, set 38 accounting standards for the PSOs (IPSAS) tell 2015, these standards are highly homogeneous with the IFRS which applicable in the private sector despite distinct, (Brusca et al. 2015). Since 1996 the IPSAS, as a unique set of high quality standards, has vital role to support the valuable characteristics of the financial statements as transparency, credibility and comparability which meet the stakeholders' needs of information (Rossi et al. 2016).

International Monetary Fund (IMF) and the World Bank (WB) has played a key role in persuading all countries throughout the world to adopt IPSAS and to make IPSAS compliance a condition of receiving any financial aid or loans (Rossi et al. 2016), and IMF declared that the financial information which presented according to IPSAS as a solid and comparable basis will be ready to help the users in understanding and making proper financial analysis, to enhance the government accountability, and to improve risk management (Cavanagh and Benito 2016). The implementation of proper financial reporting system depends on the IPSAS that requires high quality experienced employees with high level of competences and knowledge (Mir and Sutiyono 2013), particularly in globalization of markets and the external world becomes more openness, and leads to accept and adopt the globalization in accounting practices in the public sector through the accounting harmonization (Christiaens et al. 2015; Mnif Sellami and Gafsi 2019).

Financial reporting system in the PSOs has a significant effects on the audit quality because it produces the financial statements which they form main element in the audit process inputs, therefore the high quality of the reporting system will produce high quality of the pre-audit statements (DeFond and Zhang 2014).

### ***2.3 The Laws and Regulations in the PSOs***

PSOs in general work under prearranged rules and operating procedures rather than subjective actions in which political conventions, governance of the administrative units, laws and regulations, yearly approved financial plan, emergent events, lobbies groups, and unclear indicators guiding the governance and management bodies in making decision (Rashman et al. 2009; Visser and Togt 2016). More legalism and politicized environment is anticipated has significant effects on public administration (Spanou 2008), accounting (Ballas and Tsoukas 2004) and auditing (Cohen and Leventis 2013). The laws and regulations ruled all aspects of the PSOs in most countries with some differences among these countries particularly the financial reporting system and the auditing of the financial reports, for example, Nurlis (2018) revealed that the financial statements must be prepared and issued in Sumatra—Indonesia according to the Government Regulation No. 71 (2010). DeFond and Zhang (2014) mentioned that the government regulations in US and globally are increasing controls over the financial statements reporting and the activities of the audit.

The difference in level of the regulations in each country may affect the audit quality, Chase (1999) mentioned that the differences in the requirements of the disclosure notes on the financial statements among the states in US put some obstacles in front of the auditor to serve PSOs in multiple states, because the wide-ranging GAAP in high regulated states needs high experienced and specialized auditors. In this environment with different laws and regulations, the PSOs in each country or state represent a unique market for the audit, and the audit contract and the reporting quality determinants are also different (Yebba and Elder 2019).

## ***2.4 The Governance of the PSOs***

The outcomes of the social, economic and political issues in the society depending on the quality of the government, and Fukuyama (2015) argued that the quality of governance is affected by the capabilities of the administrative of state to provide general services and goods. IFAC (2001) defined the governance as processes related with organization structure, and decision-making processes, controlling tools, accountability, and the ethics and behavior of the top management. The Chartered Institute of Public Finance and Accountancy (CIPFA) and (IFAC) (2014) stated the governance function as ensuring that an entity meets its defined purposes and the intended outcomes for public and the users of the entity services, and the entity is operated in ethical behavior and in an efficient and effective manner. The governance in the PSOs is defined as procedures, policy, guidelines and programs used to direct the processes of an organization to provide reasonable and acceptable level that the entity's goals are met in accountable and ethical behavior, this leads to reduce corruption risk (Rosa and Morote 2016).

Good governance ensure the implementation of morals values, ethical principles, code and rules with considering understandable framework of risk management which includes clear set of accountabilities (Khalid et al. 2016). Elmasry and Bakri (2019) argued that the good governance encompasses five principles: efficacy roles, support value, accountability, clearness and transparency, and building abilities. Good governance needs the financial and analysis reports including performance reports, these reports must examined by an independent auditors in order to be more accountability and transparency, and the internal audit is considered as one of the mechanism of the good governance in the PSOs (Rosa and Morote 2016; Maldonado et al. 2019), therefore the auditors as important part of an entity's monitoring system have work together with other parts in the firm governance to guarantee the issuing of high quality financial statements to the interested users (Khalid et al. 2016).

## ***2.5 The Auditing of the PSOs***

PSOs have commitment to be responsible for the use of public resources (entity's assets) and to reach their goals with economy, effectiveness and efficiency. This may be guaranteed by the accountability and transparency through issuing audited information, therefore auditing is a tool that serves the need for public managers to account for their use of resources (Brusca et al. 2015).

DeFond and Zhang (2014) confirmed that auditing in the PSOs adds value, for example, mandated public school audits improve resource allocation efficiency, and that mandated public housing authority audits reduce overstatements.

The public confidence with the credible of the financial reporting in the PSOs is very important, and the auditors are considered as the main players in providing reliable and credible financial statements (Ismail et al. 2019). Auditing is defined by

Arens et al. (2017) as the process of accumulating and evaluating facts or evidences regarding information related with specific economic entities to determine and issue audit report about the level of correspondence or conformity between information and the agreed specific criteria, and they added auditing should be performed by a competent and independent person. The definition of audit quality depends on the objective of the audit, and could differ between the public and private sectors (Aleke et al. 2011).

The auditor of the PSOs must be highly specialized in this type audit because these organizations use sophisticated governmental accounting systems, and the disclosure of the financial reporting in the PSOs in US states is ruled by specific regulations were issued by state legislatures which may affect the audit contracts conditions (Yebba and Elder 2019; Salehi et al. 2019).

PSOs are subject to different types of audit depending on the countries' regulations (Rosa and Morote 2016), for examples, financial audit or performance audit (operating and compliance audit). Goodwin (2004) reported that the financial audit and the performance audit are suitable for the public sector, because in financial audit the auditor focuses in examining whether the resources which are owned by the entity are used to achieve its purposes, but in the performance audit the auditor focuses on the examining efficiency and effectively of usage of these resources according the prescribe of entity objectives. These types of audit may performed by three types of auditors: SAI auditors, internal auditors, and external auditors, but the SAI auditors are found in all countries to execute all types of audit, but the existence of other types of auditors varies among the countries depending on the country's policies and the regulations (Carrington et al. 2019; Brusca et al. 2015; Johnsen 2019; Gustavson and Sundström 2018).

The Council Directive 2011/85/EU for European Union (EU) states that public accounting systems shall be subject to internal control and independent audits (internal audits and external audit), internal audits are performed by public sector auditors who work in the entity, while external audits are performed by CPAs outside of the entity under audit. Internal control includes the control of procedures, such as legal intervention, financial control and, usually, the effectiveness controls (Brusca et al. 2015).

According the Single Audit Act of 1984 in American United States(US), any entity receives federal financial aid more than specified amount of money (this changeable amount according the related regulations) should be audit by external independent auditor as requirements of the Office Management and Budget (OMB) Circular A-133 which contains auditor opinion on the financial reports, fulfillment all federal programs and the grants conditions, and reports on the effectiveness of the internal control (Yebba and Elder 2019).

Elder et al. (2015) mentioned that the audit firm rotation policy is indirectly associated with higher audit quality and is well-known in the PSOs for many reasons such as entity-specific policies or specific regulation required from the entity to make solicitation audit bids periodically in order to keep the current auditor or replace him after technical evaluation.

Auditors use audit reports to encourage accountability and specific guidelines in the form of professional audit standards, which help them produce authoritative reports on government performance that are focused, transparent, and predictable (Rosa and Morote 2016). The nature of the audit reports depends on the types of the audit, the interested users with the information, the requirement of the applicable standards and regulations (Rosa and Morote 2016). But the type of audit implemented shows differences and the standards used have been developed nationally or international, in some EU countries the international standards have sometimes been considered as a reference (Brusca et al. 2015). Most audit standards in PSOs require that auditors not only report on the extent of the fairness of financial statements presentation, sometimes reports on internal control effectiveness and on compliance with laws, regulations, and provisions of contracts or grant agreements (Cagle and Pridgen 2015).

### 3 The Internal Control

Internal control is generally characterized as management's method of providing reasonable assurance about the achievement of productive and successful operations, accurate financial reporting, and compliance with laws and regulations (Petrovits et al. 2011; Länsiluoto et al. 2016; Younas and Md Kassim 2019). Romney and Steinbart (2018) defined the internal controls and their objectives as follows: "Internal controls are the processes implemented to provide reasonable assurance that the following control objectives are achieved:

- Safeguard assets-prevent or detect their unauthorized acquisition, use, or disposition.
- Maintain records in sufficient detail to report company assets accurately and fairly.
- Provide accurate and reliable information.
- Prepare financial reports in accordance with established criteria.
- Promote and improve operational efficiency.
- Encourage adherence to prescribed managerial policies.
- Comply with applicable laws and regulations.

Committee of Sponsoring Organizations of Treadway Commission (COSO) established and issued Internal Control-Integrated Framework in 1992, this framework includes five components, namely, control environment, control activities, risk assessment, information and communication and monitoring, the existence of these components produces an effective internal control, in addition, COSO framework states three objectives for internal control as: the effectiveness & efficiency of business, the reliability of financial report, and the compliance with applicable laws (Länsiluoto et al. 2016; Younas and Md Kassim 2019; Romney and Steinbart 2018). Ziegenfuss (2001) reported that COSO framework is widely used in public and private organizations in the United States, Europe, and Finland. For example, in the United States, the AICPA, IIA, and the General Accounting Office (GAO) incorporate the

COSO framework into their auditing standards, and he went on to say that the strength of a local government's control environment is inversely proportional to its fraud rate. All components of COSO framework rely on the control environment since it establishes the tone and culture of an organization, which all other activities are built upon (Länsiluoto et al. 2016). But control activities are the practices that ensure management that goals are met and risk mitigation measures are implemented successfully in terms of policies and procedures, for examples of these practices the segregation of duties, information processing, physical control and performance reviews (Aikins 2011). The major goal of control activities is to ensure that essential actions are made to address threats to the firm's objectives. These threats are discovered and studied in the risk assessment process, which is significantly weighted in the modern control framework (COSO Enterprise Risk Management (ERM), 2004) (Länsiluoto et al. 2016).

The last two components of COSO framework related all activities of the organization, therefore the information and communication system collects and exchanges the data required to conduct, communicate, manage, and control the operations of the organization, and the internal and external communication is required to provide information needed to carry out day-to-day internal control activities. But the monitoring component includes continuing evaluations which determine whether each component is present and working, and any defect is conveyed promptly, with major issue being addressed to top management and the board of directors (Romney and Steinbart 2018).

From the above discussion for the internal control elements and objectives, it is clear that the audit quality is affected by the strength degree of internal control, because the achieving of the internal control objectives supports the objective of the external audit which leads to improve the audit quality. For example, the efficiency and the effectiveness of operations facilitate the audit engagement and minimize its cost, particularly when the external auditor depends on the internal auditors' reports. Therefore, the internal auditing is considered as proxy of the efficiency and the effectiveness of the organization's operations. In addition, the accounting basis is considered as proxy for the reliability of the financial reports which affects directly the input of the audit process through producing reliable financial statements that improve the audit quality (DeFond and Zhang 2014). According the auditing standards, the external auditor is responsible for detecting of any violation of the applicable laws and regulations which they affect directly the financial statements and the going concern of the organization (Arens et al. 2017). It is clear that the internal control aims to keep the organization to perform its activities according the applicable laws and regulations (Länsiluoto et al. 2016). This supports the achieving of high audit quality. Because the audit quality and internal controls have such a close link, audit standards required from the external auditor to understand and evaluate effectiveness of the internal controls in the organizations under the audit process.

### ***3.1 The Internal Controls in the Context of PSOs***

The internal control system is a keystone in public sector governance, helping public agencies to improve their effectiveness, productivity, openness, transparency and accountability (Reginato et al. 2016; Troupin et al. 2010). Internal controls are the measures that a public sector manager devises and implements to aid in the achievement of the entity's financial targets and priorities, as well as the mitigation of organizational and financial risks, for example of these measures: approval of invoices prior to payment, division of duties relating to payment and recording of financial transactions, and inspection of reported transactions for consistency and procedural enforcement (Aikins 2011; Alareeni 2019; Areiqat et al. 2020).

Internal controls and reporting environments of the governmental entities are subject to single audit requirements and are impacted by related laws and regulations (Yebba and Elder 2019). The control activity in the public administration in the PSOs aims to ensure that the public authorities have considered the measures taken, in order to keep itself compliance with related laws and legal standards, to avoid ineffective and inefficient performance of tasks, and to avoid the uneconomic management of public resources and government entity assets (Stašová 2019). The purpose of any control should certainly be very interest of learning from existing unwanted effects and preventing them from happening in the future, and it is essential to ensure that day-to-day control is a part of governance in public administration, this leads to credibility and transparency at all levels of the administration (Novotný 2015). Control in the public sector should constantly provide incentives to get better all processes and serve as a tool of creating a superior relationship among the citizen, PSOs, and the public administration (Bovaird and Löffler 2003).

Länsiluoto et al. (2016) confirmed that the construct for internal control effectiveness is made up of three factors: effectiveness and efficiency of activities, financial reporting dependability, and compliance with laws and regulations. Therefore this paper discusses three proxies for the factors of internal control effectiveness as follows: the first, internal auditing which aims to ensure that weather that the operating activities are executed in efficient and effective ways including the procedures of internal controls, therefore the existence of the internal audit points out for the effectiveness and efficiency of activities, the second, accounting basis which is considered as the foundation of financial reporting system, and affects directly on the reliability of the financial reporting, and the last, the existence of sufficient and relevant laws and regulations and proper compliance of them may support the effectiveness of internal control.

As a result of the above discussion, the effective internal control can help the PSOs in producing a high-quality financial statement which help the auditor to provide a high audit quality. And the applicable audit standards, such as International Standards of Auditing (ISA) and AICPA auditing principles, require from auditors to understand and to consider the efficiency and the effectiveness of the client's internal control system in audit plan and other audit processes through the evaluation of three elements that influence directly or indirectly of the effectiveness of the internal control in



the PSOs: the internal auditing, cash basis, and the laws and regulation either the relevancy or the degree of compliance of the applicable laws and regulations.

**The Internal Auditing.** Internal auditing is the practice of analyzing business processes or organizational issues and recommending solutions using a structured approach, and it is a profession and practice that advises the organization on how to better achieve their objectives by managing risks and improving internal controls (Asare 2009). Internal audit is defined by the Auditing Practice Committee of the Institute of Internal Auditors of the United States as “one element of the internal control system put in place by the management of the institutions for the purpose of valuation, examination, and disclosure of the accounting and other internal controls in the operation” (Dimitrova and Paneva 2019; Chalmers et al. 2019) Also, the Institute of Internal Auditors defined internal auditing as “an independent, objective assurance and consulting activity aimed to add value and improve an organization’s operations”. Internal audit assists the organization in achieving its objectives by reviewing and improving the performance of risk management, control, and governance systems in a methodical and limited manner (Goodwin 2004; Pilcher et al. 2013). There are four categories of the internal auditors’ activities either in the private sector or public sector: (1) Systems and operational audits, (2) internal controls and financial audit, (3) risk management, (4) specific and other projects (Goodwin 2004). And the internal auditor competency is correlated with the effectiveness of internal control over compliance (Chang et al. 2019). Romney and Steinbart (2018) confirmed that internal audit examines the accuracy and consistency of financial and operational data, as well as the efficacy of internal controls and employee adherence to management policies and procedures, as well as applicable laws and regulations. Also, they added that internal audit should be organizationally separate from accounting and operations, reporting to the audit committee rather than the controller or chief financial officer.

**The Importance of the Internal Auditing in PSOs.** Internal auditing is an important part of governance process and can be a valuable method for PSOs (Janse van Rensburg and Coetzee 2016). The importance of internal auditing in the public sector is increasing because the government should make sure that available resources are used efficiently and that public assets are used to their full potential, but these resources are growing at a slower pace while the citizens are demanding better services and more transparency and accountability (Aikins 2011; Asare 2009).

Despite the internal audit is considered as part of the internal control on the firm as a whole, but the internal audit in the government unit investigates and assesses the internal control activities on the operation activities in order to assure that the functions of various organizational units are implementing in efficiency to assist the management of the government unit in controlling the operating activities of the unit, and may provide input to the directors of the government units that is concerning the outcomes, obstacles, and irregularities that occur over the route of government unit and development that are the responsibility of the directors of the government units (Sari et al. 2019). Ismail et al. (2019) reported that Njoroge (Kirima 2016) confirmed that competency of internal auditors in public sector has essential role in promoting



good governance and help in effective use of PSOs resources. While Mazza and Azzali (2015) found that reduced severity and persistence of control deficiencies are correlated with improved internal audit efficiency.

*The Relationship Between the Internal Auditing and the Audit Quality.* There is an interaction between internal auditors and external auditors, and the external auditor always relies on the work of internal audit either in private sector or in the public sector, but this does not lead to reduce the audit fees in the public sector compared to the private sector (Goodwin 2004). The external auditor in his/her performance of the audit process must comply with the requirements of ISA 610 (Revised 2013) in the subject of Using the Work of Internal Auditors (International Federation of Accountants 2018).

In general, Aikins (2011) concludes that local government auditors (internal auditors) conduct further audits in operating areas including fiscal receipts and expenses. Furthermore, the role of auditors has a major effect on local government financial performance, both directly and indirectly, through improvements in internal controls and operational quality.

Research on the Internal Audit Function (IAF) is still in its babyhood, and the appealing questions include whether IAF substitutes or complements the external audit function, and whether outsourcing IAF impairs or enhances audit quality (DeFond and Zhang 2014). Sari et al. (2019) determine that the internal audit has quality assurance function and considers the risk of fraud which affects significantly on the audit quality objective.

**The Accounting Basis.** Accounting basis tells the accountant when the financial transaction must be recorded in the accounting records and they reported in the financial statements. IFAC Status Report (2018) defines cash accounting basis as recognizing the financial transactions when the cash received or paid, while in the accrual accounting basis the financial transaction is recognized in accounting records when the primary economic event occurs, and the assets and liabilities reported in the financial statements. According the accounting accrual basis, IPSAS requires the organizations to issue a number of financial statements, including a statement of financial position, a statement of financial performance, a statement of changes in net assets/equity, and when the government unit uses the accounting cash basis, the statement of receipts and payments must be issued at least (Zedan et al. 2020). The different nature of these bases in the time of recording financial process and different financial statement which they issued affect directly and indirectly on the objectives of the internal controls, particularly in measuring the efficient and effectiveness of the operations and the reliability and relevancy of the financial reports. This may influence on the level of the audit quality perception, particularly when the organization uses cash basis which discloses only the financial assets.

**Accounting Basis in the PSOs.** Dewi et al. (2019) reported according report of IFAC, (2018) that 25% of governments of 150 jurisdictions in the world published their financial statements on accrual accounting basis, while 30% of the government still report in cash basis, but the rest of the governments are in the way of switching

to accrual accounting basis, and they report on the modified cash basis or modified accrual basis, which they have several accrual elements in their financial statements. In developed countries such as EU member states a few of them use cash accounting in their PSOs, for example German state permits using cash accounting basis or accrual accounting basis in financial reporting system in the public sector, because there is no convinced justification to go to accrual accounting depending on the cost–benefit relationship (Eulner and Waldbauer 2018).

Accounting cash basis addresses the accountability requirements for public sector earnings and expenditures through producing factual, reliable and comparable information, also it is simple in application and relatively inexpensive, and cash-based budgeting is common used in PSOs which it considers easy to understand (Eulner and Waldbauer 2018). But the accrual accounting basis has many benefits for different users which summarized by the researchers as follows: accrual accounting basis facilitates and provides more useful (relevant and reliable) information for decision makers, helps in achieving more effective and efficient public administration, provides transparency by issuing balance sheet based on the accruals, provides multiple reporting framework, enables the taxpayers and voters to access to the same information, and provides modern financial reporting and suitable for international comparison (Eulner and Waldbauer 2018; Dewi et al. 2019; International Federation of Accountants 2018; Ademola et al. 2019). In addition to the above benefits, adoption of the accrual accounting basis or IPSAS reduces the corruption in PSOs and increases the financial reporting quality (Cuadrado-Ballesteros et al. 2019; Ademola et al. 2019).

IFAC issued accounting standards for public sector based on accrual basis in order to make harmonization for accounting standards around the world and to issue high quality, credibility, and comparability financial reports (Ademola et al. 2019).

The adoption of IPSAS encourages a good functional performance and distribution of entity's resources efficiently by providing the trusted excellent financial processes which lead to acceptable of level of accountability and transparency (Abimbola et al. 2017). IPSASB (2015) states the objective of IPSAS as to assist the government managers in making choice alternatives and making decisions for public governance according the transparently and creditably. IPSASB supported the accrual basis and considered the cash basis insufficient to meet the demand of users of financial reporting, and the IPSAS provides a self-regulated internal control system (Ademola et al. 2019).

*The Relationship Between the Accounting Basis and the Audit Quality.* The nature of auditing services may differ between two types of audit governmental markets: uniform GAAP (accrual accounting basis) and multiple accounting bases such as cash basis, modified cash basis, modified accrual basis, and accrual basis (Yebba and Elder 2019). The usefulness of financial reporting system in any firm is measured by the reliability and the relevancy of the financial information which is issued by that system, and the type of the accounting basis is responsible for the quality of the pre-audited financial statements which are considered the main items of the audit process inputs (DeFond and Zhang 2014). Therefore, the accounting basis either

cash basis or accrual basis influence on the audit quality through the quality of the financial statements which differ according to the nature of these bases.

**The Laws and Regulations.** Alareeni (2019) found evidence confirmed that the legal environment has vital impact on the audit quality in addition to the strength of auditing and accounting standards and procedures. And he further said that Big 4 audit firms are more cautious with their customers in countries with legal systems that provide greater protection to auditor report users, including the power to sue auditors. In other words, the auditor behavior is influenced by legal incentives. The level of enforcement of reporting standards and other regulations related to disclosure, as well as the level of governmental inspection of financial reports can affect the client's investment in reporting systems and assurance tools, which they provide more trustworthiness with financial statements to users (Yebba and Elder 2019). In high level of economic development countries, the quality of legal enforcement is higher, and the enforcement of laws is just as important as the substance of the laws (Alareeni 2019; Porta et al. 2000).

The laws and regulations include all the orders of superior authorities and regulators of the client industry. When the auditor responds to non-compliance or suspected non-compliance with the laws and regulations, his goals are to uphold the principles of integrity and professional behavior by alerting management or the client's governance to enable them to rectify, remediate, or mitigate the consequences of the identified or suspected non-compliance, as well as to deter future violations (International Federation of Accountants 2018). For examples of these laws and regulations: accounting standards and procedures, fraud, corruption and bribery, money laundering, terrorist financing and proceeds of crime, securities markets and trading, banking and other financial products and services, data protection, tax and pension liabilities and payments, environmental protection, and public health and safety and related regulations, and the regulations which related with the auditing and issuing of audited financial statements (International Federation of Accountants 2018). These laws and regulations are considered as part of the internal controls of the client's operations, and they have an effect on the audit quality (Alareeni 2019).

*The Laws and Regulations in PSOs.* Yebba and Elder (2019) made a comparison between two states (Michigan & Pennsylvania in US) audit markets, these states nearly equal in all aspects in order to be comparable, particularly in design of their governments such as county, city, township, villages and boroughs. Additionally, both states require each governmental unit to hire an independent CPA firm to audit its financial statements. But there are some differences in the regulatory climate particularly in the state-level GAAP on audit markets and the interest to governmental regulators and standard setters, therefore each state is considered as a unique audit market. Yebba and Elder (2019) in their study found that there is an enhancement of audit quality with GAAP regulated state (Michigan), because the environment of reporting becomes stronger with these regulations, and requires specialist auditors who have practical experience in the applicable regulations. Ahmaro (2014) suggested that there is a need to modify the law of municipalities and the bylaw of the municipalities in order to develop and implement an efficient financial system with

clear accounting standards, controls principles and procedure, and organizational standards that apply best practices. The governmental body in Europe Countries is responsible for setting the auditing regulation for external audit, usually the regulation passed through a legal document; normally, a law or decree is used to regulate central government audits, but professional auditors sometimes collaborate in the design of the auditing standards (Christiaens et al. 2015).

*The Relationship of the Laws and Regulations with the Audit Quality.* In the course of providing a professional (audit) service to a client, a professional accountant (auditor) may encounter into or be made aware of non-compliance or suspected non-compliance of the applicable laws and regulations, that are widely acknowledged as having a direct impact on the calculation of substantial amounts and disclosures in a client's financial statements, and the compliance with indirect effect laws and regulations may be critical to the client's operational elements, its ability to continue functioning, or its ability to avoid material penalties (International Federation of Accountants 2018).

The increasing of investment in the financial reporting system to meet the regulations' requirements may increase the effectiveness of an internal control environment over financial reporting which leads to decrease auditor's finding of control deficiencies (Yebba and Elder 2019). In other word, when the client fellows all the applicable laws and regulations, the objective of the effective internal control is achieved and the audit quality improves. Laws and regulations which applicable to the clients do as guidance for them in how to operate their works, including hiring the external auditors and the conditions of the audit agreements and the scope of the audit process and its outcomes. This causes the auditor to be more cautious when designing audit methods and processes, as well as more committed to reaching the audit objective in the most efficient manner possible. Accordingly, the laws and regulations have significant effects on the audit quality.

## 4 The Conclusion

The management of PSOs is responsible for establishing and maintaining an efficient accounting and internal control systems, but the external auditor is responsible for evaluating and determining the effectiveness of these systems in order to determine whether or not to rely on them and to what degree. The auditor must consider the environment factors of the PSOs when he is evaluating the client internal control, because the PSOs have different attributes in comparison with the privet sector organizations. From these attributes: the nature and types of PSOs, laws and regulations, governance method, auditing processes, accounting information system, and the effectiveness internal controls which includes internal auditing, accounting basis, and applicable laws and regulations.

Based on the foregoing discussion, the environment of PSOs may influence on the audit quality and must be considered when the auditor decides to evaluate the continuing with the current client or to accept the new one. Also the PSOs attributes

must be considered by the management of the organization when it decides to hire a new auditor or to evaluate the current auditor performance. PSOs are distinguished by the absence of ownership interests, this means that the PSOs have less strict governance and accountability mechanisms as compared to business entities, operate their activities on the basis of achieving the balance between available income and the expenditure over a given period, and the laws and regulations ruled all aspects of the PSOs in most countries with some differences among these countries particularly the financial reporting system and the auditing of the financial reports. In general, the independent auditors add value to the financial statements and financial analysis reports, this leads to more accountability and transparency which they are enhancing the good governance in the PSOs, especially when we add the internal audit which is considered as one of the mechanism for good governance in the PSOs. And COSO framework integrated internal control confirmed that the information and communication system collects and exchanges the data required to conduct, communicate, manage, and control the operations of the organization, but the monitoring component includes continuing evaluations which determine whether each component of COSO (environment controls, control activities, risk assessment, and information and communication) is present and working, and any defect is conveyed promptly, with major issue being addressed to top management and the board of directors, this supports the achieving of high audit quality, because it leads to strong and effective internal control, which usually leads to issue reliable financial statements particularly when the client's management is adopting effective accounting basis, and hiring high quality auditors either in internal auditing or in external auditing which they are considered as assurance function. In addition to that, the Laws and regulations which applicable to the clients do as guidance for them in how to operate their works, including hiring the external auditors and the conditions of the audit agreements, and this causes the auditor to be more cautious when designing audit programs, as well as more committed to reaching the audit objective.

This paper confirmed through the audit quality prior literature that the selected environment of PSOs factors have significant effect on the audit quality, but there are other factors may influence on the audit quality such as the SAIs and the political issues which will be potentially elements of environment of PSOs on audit quality for future research.

## References

- Abimbola, O., Kolawole, A., Olufunke, A.: Impact of International Public Sector Accounting Standards (IPSAS) adoption on financial accountability in selected local governments of Oyo State, Nigeria. *Asian J. Econ. Bus. Account.* **3**, 1–9 (2017). <https://doi.org/10.9734/ajeba/2017/33866>
- Ademola, A.O., Ben-Caleb, Madugba, J.U., Adegboyegun, A.E., Eluyela, D.F.: International Public Sector Accounting Standards (IPSAS) adoption and implementation in Nigerian public sector. *Int. J. Financ. Res.* **11**, 434 (2019). <https://doi.org/10.5430/ijfr.v11n1p434>
- Ahmaro, I.H.: Controlling the financial performance of Jordanian municipalities by improving financial regulations: an analytical study. *J. Bus. Stud.* **q. 6**, 67–84 (2014)

- Aikins, S.K.: An examination of government internal audits' role in improving financial performance. *Public Financ. Manag.* **11**, 306 (2011)
- Alareeni, B.A.: The associations between audit firm attributes and audit quality-specific indicators: a meta-analysis. *Manag. Audit. J.* **34**(1), 6–43 (2019). <https://doi.org/10.1108/MAJ-05-2017-1559>
- Alareeni, B.A.: The associations between audit firm attributes and audit quality-specific indicators: a meta-analysis. *Manag. Audit. J.* **34**, 6–43 (2019). <https://doi.org/10.1108/MAJ-05-2017-1559>
- Aleke, B., Ojiako, U., Wainwright, D.W.: ICT adoption in developing countries: perspectives from small-scale agribusinesses. *J. Enterp. Inf. Manag.* **24**, 68–84 (2011). <https://doi.org/10.1108/17410391111097438>
- Anggriawan, F.T., Yudianto, I.: Factors affecting information quality of local government financial statement of West Bandung District, West Java Province, Indonesia. *J. Account. Audit. Bus.* **1**, 34 (2018). <https://doi.org/10.24198/jaab.v1i1.15652>
- Aobdia, D.: The validity of publicly available measures of audit quality: evidence from the PCAOB inspection data. *Soc. Sci. Res. Netw.* (2016). <https://doi.org/10.1016/j.jacceco.2018.09.001>
- Areiqat, A.Y., Hamdan, A., Alheet, A.F., Alareeni, B.: Impact of artificial intelligence on E-commerce development. In: *International Conference on Business and Technology*, pp. 571–578. Springer, Cham (2020)
- Arens, A.A., Elder, R.J., Beasley, M.S.: *Auditing and Assurance Services*. Pearson, New York (2017)
- Asare, T.: Internal auditing in the public sector: promoting good governance and performance improvement. *Int. J. Gov. Financ. Manag.* **9**, 15–28 (2009)
- Ashbaugh, H., LaFond, R., Mayhew, B.W.: Do nonaudit services compromise auditor independence? Further Evidence. *Account. Rev.* **78**, 611–639 (2003)
- Axén, L., Tagesson, T., Shcherbinin, D., Custovic, A., Ojdanic, A.: Does municipal ownership affect audit fees? *J. Manag. Gov.* **23**, 693–713 (2019). <https://doi.org/10.1007/s10997-018-9438-4>
- Azizkhanian, M., Daghani, R., Shailer, G.: Audit firm tenure and audit quality in a constrained market. *Int. J. Account.* **53**, 167–182 (2018). <https://doi.org/10.1016/j.intacc.2018.07.002>
- Ballas, A.A., Tsoukas, H.: Measuring nothing: the case of the greek national health system. *Hum. Relations.* **57**, 661–690 (2004). <https://doi.org/10.1177/0018726704044951>
- Bauer, T.D.: The effects of client identity strength and professional identity salience on auditor judgments. *Account. Rev.* **90**, 95–114 (2015)
- Bell, T.B., Causholli, M., Knechel, W.R.: Audit firm tenure, non-audit services, and internal assessments of audit quality. *J. Account. Res.* **53**, 461–509 (2015)
- Boex, J.: Localizing the MDGs: unlocking the potential of the local public sector to engage in development and poverty reduction. *IDG Work. Pap. No. 2010–04*. 19 (2010)
- Boon, K., Mckinnon, J., Ross, P., Boon, K., Mckinnon, J.: Audit service quality in compulsory audit tendering preparer perceptions and satisfaction. *Account. Res. J.* **21**, 93–122 (2008). <https://doi.org/10.1108/10309610810905917>
- Bovaird, T., Löffler, E.: Evaluating the quality of public governance: indicators, models and methodologies. *Int. Rev. Adm. Sci.* **69**, 313–328 (2003). <https://doi.org/10.1177/0020852303693002>
- Brusca, I., Caperchione, E., Cohen, S., Manes Rossi, F.: *Public Sector Accounting and Auditing in Europe* (2015). <https://doi.org/10.1057/9781137461346>
- Butcher, K., Harrison, G., Ross, P.: Perceptions of audit service quality and auditor retention. *Int. J. Audit.* **17**, 54–74 (2013). <https://doi.org/10.1111/j.1099-1123.2012.00457.x>
- Cagle, C., Pridgen, A.: Accountability in county governments: is auditor type related to audit quality? *J. Leadership, Account. Ethics.* **12**, 79–93 (2015)
- Cameran, M., Ditillo, A., Pettinicchio, A.: Audit team attributes matter: how diversity affects audit quality. *Eur. Account. Rev.* **27**, 595–621 (2017). <https://doi.org/10.1080/09638180.2017.1307131>
- Carhill, K.M., Kincaid, J.K.: Applying the standards in governmental internal auditing. *Intern. Audit.* **46**, 50–55 (1989)

- Carrington, T., Vakkuri, J., Reichborn-kjennerud, K., Jeppesen, K.K., Taro, K.: Supreme audit institutions in a high-impact context : a comparative analysis of performance audit in four Nordic countries. *Financ. Account. Manag.* **35**, 158–181 (2019). <https://doi.org/10.1111/faam.12188>
- Cavanagh, J., Benito, A.F.: Public accounting and fiscal credibility. In: *Public financial management in Latin America: the key to efficiency and transparency*, pp. 183–236. International Monetary Fund, Washington, DC (2016). <https://doi.org/10.5089/9781597822268.071.ch005>.
- Chadegani, A.A.: Review of studies on audit quality in Asia. *NTU Manag. Rev.* **27**, 312–317 (2011). <https://doi.org/10.6226/NTUMR.2016.AUG.25104-004>
- Chalmers, K., Hay, D., Khlif, H.: Internal control in accounting research: a review. *J. Account. Lit.* **42**, 80–103 (2019). <https://doi.org/10.1016/j.acclit.2018.03.002>
- Chang, Y.-T., Chen, H., Cheng, R.K., Chi, W.: The impact of internal audit attributes on the effectiveness of internal control over operations and compliance. *J. Contemp. Account. Econ.* **15**, 1–19 (2019). <https://doi.org/10.1016/j.jcae.2018.11.002>
- Chase, B.: The influence of auditor change and type on audit fees for municipalities. *Res. Gov. Nonprofit Account.* **10**, 49–63 (1999)
- Christiaens, J., Reyniers, B., Rollé, C.: Impact of IPSAS on reforming governmental financial information systems: a comparative study. *Int. Rev. Adm. Sci.* **76**, 537–554 (2010). <https://doi.org/10.1177/0020852310372449>
- Christiaens, J., Vanhee, C., Manes-Rossi, F., Van Cauwenberge, P., Aversano, N.: The effect of IPSAS on reforming governmental financial reporting: an international comparison. *Int. Rev. Adm. Sci.* **81**, 158–177 (2015)
- Chu, B., Hsu, Y.: Non-audit services and audit quality—the effect of Sarbanes-Oxley Act. *Asia Pacific Manag. Rev.* **23**, 201–208 (2018). <https://doi.org/10.1016/j.apmr.2017.07.004>
- Cohen, S., Leventis, S.: Effects of municipal, auditing and political factors on audit delay. *Account. Forum.* **37**, 40–53 (2013). <https://doi.org/10.1016/j.accfor.2012.04.002>
- Cohen, S., Manes Rossi, F., Caperchione, E., Brusca, I.: Local government administration systems and local government accounting information needs: is there a mismatch? *Int. Rev. Adm. Sci.* **85**, 708–725 (2019). <https://doi.org/10.1177/0020852317748732>
- Cuadrado-Ballesteros, B., Cito, F., Bisogno, M.: The role of public-sector accounting in controlling corruption: an assessment of Organisation for Economic Co-operation and Development countries. *Int. Rev. Adm. Sci.* 1–20 (2019). <https://doi.org/10.1177/0020852318819756>
- DeFond, M., Zhang, J.: A review of archival auditing research. *J. Account. Econ.* **58**, 275–326 (2014). <https://doi.org/10.1016/j.jacceco.2014.09.002>
- Dewi, N.F., Ferdous Azam, S.M., Yusoff, S.K.M.: Factors influencing the information quality of local government financial statement and financial accountability. *Manag. Sci. Lett.* **9**, 1373–1384 (2019). <https://doi.org/10.5267/j.msl.2019.5.013>
- Dickins, D., Johnson-Snyder, A.J., Reisch, J.T.: Selecting an auditor for Bradco using indicators of audit quality. *J. Account. Educ.* **45**, 32–44 (2018). <https://doi.org/10.1016/j.jacedu.2018.07.001>
- Dimitrova, J., Paneva, N.: Internal audit in the public sector in Republic of Macedonia. *J. Econ.* **35**, 52–59 (2019)
- Donatella, P., Haraldsson, M., Tagesson, T.: Do audit firm and audit costs/fees influence earnings management in Swedish municipalities? *Int. Rev. Adm. Sci.* **85**, 673–691 (2019). <https://doi.org/10.1177/0020852317748730>
- Edmonds, C.T., Leece, R.D., Vermeer, B.Y., Vermeer, T.E.: The information value of qualified and adverse audit reports: evidence from the municipal sector. *Audit. J. Pract. Theory.* **39**, 21–41 (2020)
- Elder, R.J., Lowensohn, S., Reck, J.L.: Audit firm rotation, auditor specialization, and audit quality in the municipal audit context. *J. Gov. Nonprofit Account.* **4**, 73–100 (2015). <https://doi.org/10.2308/ogna-51188>
- Eulner, V., Waldbauer, G.: New development: cash versus accrual accounting for the public sector—EPSAS. *Public Money Manag.* **0962**, 1–4 (2018). <https://doi.org/10.1080/09540962.2018.1444560>



- International Federation of Accountants: Public sector financial management transparency and accountability: the use of international public sector accounting standards. , New York (2012)
- Fukuyama, F.: Political Order and Political Decay: From the Industrial Revolution to the Globalization of Democracy. Farrar, Straus and Giroux, New York (2015)
- Gaynor, L.M., Kelton, A.S., Mercer, M., Yohn, T.L.: Understanding the relation between financial reporting quality and audit quality. *Audit. J. Pract. Theory* **35**, 1–22 (2016)
- Ghafran, C., O'Sullivan, N.: The impact of audit committee expertise on audit quality: evidence from UK audit fees. *Br. Account. Rev.* **49**, 578–593 (2017). <https://doi.org/10.1016/j.bar.2017.09.008>
- Goodwin, J.: A comparison of internal audit in the private and public sectors. *Manag. Audit. J.* **19**, 640–650 (2004). <https://doi.org/10.1108/02686900410537766>
- Griffith, E.E., Hammersley, J.S., Kadous, K., Young, D.: Auditor mindsets and audits of complex estimates. *J. Account. Res.* **53**, 49–77 (2015)
- Grossi, G., Thomasson, A.: Bridging the accountability gap in hybrid organizations: the case of Copenhagen Malmö Port. *Int. Rev. Adm. Sci.* **81**, 604–620 (2015). <https://doi.org/10.1177/0020852314548151>
- Gustavson, M., Sundström, A.: Organizing the audit society: does good auditing generate less public sector corruption? *Adm. Soc.* **50**, 1508–1532 (2018). <https://doi.org/10.1177/0095399716674306>
- Harris, E.E., Tate, S.L., Zimmerman, A.B.: Does hiring a local industry specialist auditor matter to nonprofit organizations? *Nonprofit Volunt. Sect. q.* **48**, 633–664 (2019). <https://doi.org/10.1177/0899764018784752>
- Hartono, J., Suwardi, E., Miharjo, S., Hartadi, B.: Does auditor rotation increase auditor independence? *Gadjah Mada Int. J. Bus.* **18**, 315–336 (2016). <https://doi.org/10.22146/gamaijb.16988>
- International Ethics Standards, Accountants, B. for: Handbook of the International Code of Ethics for professional accountants. International Federation of Accountants, New York (2018)
- Ismail, A.H., Merejok, N.M., Dangi, M.R.M., Saad, S.: Does audit quality matters in Malaysian public sector auditing? *Int. J. Financ. Res.* **10**, 203–215 (2019). <https://doi.org/10.5430/ijfr.v10n3p203>
- Ives, M., Johnson, L., Razek, J.R., Hosch, G.A.: Introduction to Governmental and Not-for-profit Accounting. Pearson Prentice Hall (2004)
- Janse van Rensburg, J.O., Coetzee, P.: Internal audit public sector capability: a case study. *J. Public Aff.* **16**, 181–191 (2016). <https://doi.org/10.1002/pa.1574>
- Johnsen, Å.: Public sector audit in contemporary society: a short review and introduction. *Financ. Account. Manag.* **35**, 121–127 (2019). <https://doi.org/10.1111/faam.12191>
- Kesuma, I.B.G.P.W.: Professional commitments and pressure of obedience in mediating on the effect of time budget pressure in quality audits. *Int. Res. J. Eng. IT Sci. Res.* **5**, 27–38 (2019). <https://doi.org/10.21744/irjeis.v5n1.587>
- Khalid, M.A., Alam, M.M., Said, J.: Empirical assessment of good governance in the public sector of Malaysia. *Econ. Sociol.* **9**, 289–304 (2016). <https://doi.org/10.14254/2071-789X.2016/9-4/18>
- Kirima, N.N.: Factors affecting the performance of the internal audit function in government ministries in Kenya (2016). <http://erepo.usiu.ac.ke/11732/2510>
- Knechel, W.R., Sharma, D.S., Sharma, V.D.: Non-Audit services and knowledge spillovers: evidence from New Zealand. *J. Bus. Financ. Account.* **39**, 60–81 (2012). <https://doi.org/10.1111/j.1468-5957.2011.02268.x>
- Kusumawati, A., Syamsuddin, S.: The effect of auditor quality to professional skepticism and its relationship to audit quality. *Int. J. Law Manag.* **60**, 998–1008 (2018). <https://doi.org/10.1108/IJLMA-03-2017-0062>
- Kyriakou, M.I., Dimitras, A.I.: BIG4 or Non-BIG4 auditors: their impact on audit quality during the global financial crisis. *Theor. Econ. Lett.* **08**, 909–917 (2018). <https://doi.org/10.4236/tel.2018.85064>
- La Porta, R., Lopez-De-Silanes, F., Shleifer, A., Vishny, R.: Investor protection and corporate governance. *J. Financ. Econ.* **58**, 3–27 (2000). [https://doi.org/10.1016/s0304-405x\(00\)00065-9](https://doi.org/10.1016/s0304-405x(00)00065-9)



- Lämsiluoto, A., Jokipii, A., Eklund, T.: Internal control effectiveness – a clustering approach. *Manag. Audit. J.* **31**, 5–34 (2016). <https://doi.org/10.1108/MAJ-08-2013-0910>
- Lonsdale, J.: Developments in value-for-money audit methods: Impacts and implications. *Int. Rev. Adm. Sci.* **66**, 73–89 (2000). <https://doi.org/10.1177/0020852300661007>
- Maldonado, I., Pinho, C., Lobo, C.A.: Determinant factors of external audit opinion modification in Portuguese municipalities. In: Iberian Conference on Information Systems and Technologies, 19–22 June 2019 (2019). <https://doi.org/10.23919/CISTI.2019.8760694>
- Mali, D., Lim, H.: Conservative reporting and the incremental effect of mandatory audit firm rotation policy: a comparative analysis of audit partner rotation vs audit firm rotation in South Korea. *Aust. Account. Rev.* **28**, 446–463 (2018). <https://doi.org/10.1111/auar.12206>
- Mazza, T., Azzali, S.: Effects of internal audit quality on the severity and persistence of controls deficiencies. *Int. J. Audit.* **19**, 148–165 (2015). <https://doi.org/10.1111/ijau.12044>
- McGowan, M.M.M., Chan, S.H., Yurova, Y.V., Liu, C., Wong, R.M.K.: The influence of institutional regulatory pressure on nonprofit hospital audit quality. *J. Gov. Nonprofit Account.* **7**, 1–23 (2018)
- Mir, M., Sutiyo, W.: Public sector financial management reform: a case study of local government agencies in Indonesia. *Australas. Account. Bus. Financ. J.* **7**, 97–117 (2013). <https://doi.org/10.14453/aabfj.v7i4.7>
- Mnif Sellami, Y., Gafsi, Y.: Institutional and economic factors affecting the adoption of international public sector accounting standards. *Int. J. Public Adm.* **42**, 119–131 (2019). <https://doi.org/10.1080/01900692.2017.1405444>
- Mohd Kharuddin, K.A., Basioudis, I.G., Hay, D.: Partner industry specialization and audit pricing in the United Kingdom. *J. Int. Account. Audit. Tax.* **35**, 57–70 (2019). <https://doi.org/10.1016/j.intaccudtax.2019.05.005>
- Novotný, V.: Czech study of public policy in the perspective of three dominant approaches. *Cent. Eur. J. Public Policy.* **9**, 8–29 (2015). <https://doi.org/10.1515/cejpp-2016-0002>
- Nur, S.W.: The influence of independence and competence of auditor on the performance of inspectorate auditors district Maros. *Int. J. Sci. Res.* **1**, 584–587 (2017)
- Nurlis: The effect of the government accounting standards implementation and apparatus competency on the quality of the local government financial reporting (case study at Klaten district government). *Res. J. Financ. Account.* **9**, 63–69 (2018)
- Omar Elmasry, M., Bakri, N.: Behaviors of transformational leadership in promoting good governance at the Palestinian public sector. *Int. J. Organ. Leadersh.* **8**, 1–12 (2019). <https://doi.org/10.33844/ijol.2019.60265>
- Petrovits, C., Shakespeare, C., Shih, A.: The causes and consequences of internal control problems in nonprofit organizations. *Account. Rev.* **86**, 325–357 (2011). <https://doi.org/10.2308/accr.00000012>
- Pilcher, R., Gilchrist, D., Singh, H., Singh, I.: The interface between internal and external audit in the Australian public sector. *Aust. Account. Rev.* **23**, 330–340 (2013). <https://doi.org/10.1111/auar.12032>
- IFAC Public Sector Committee: Governance in the public sector: a governing body perspective. New York (2001)
- Purnamasari, P.: Does moral evaluation mediate the relationship between cognitive moral development and reduced audit quality behavior? *J. Bus. Retail Manag. Res.* **13**, 203–211 (2019). <https://doi.org/10.24052/jbrmr/v13is03/art-18>
- Rashman, L., Withers, E., Hartley, J.: Organizational learning and knowledge in public service organizations: a systematic review of the literature. *Int. J. Manag. Rev.* **11**, 463–494 (2009). <https://doi.org/10.1111/j.1468-2370.2009.00257.x>
- Reginato, E., Fadda, I., Paglietti, P.: The influence of resistance to change on public-sector reform implementation: the case of Italian municipalities' internal control system. *Int. J. Public Adm.* **39**, 989–999 (2016). <https://doi.org/10.1080/01900692.2015.1068325>
- Romney, M., Steinbart, P.: Accounting Information System. Pearson, Boston (2018)

- Rosa, C.P., Morote, R.P.: The audit report as an instrument for accountability in local governments: a proposal for Spanish municipalities. *Int. Rev. Adm. Sci.* **82**, 536–558 (2016). <https://doi.org/10.1177/0020852314566000>
- Rosair, M., Taylor, D.W.: The effects of participating parties, the public and size on government departments' accountability disclosures in annual reports. *Account. Account. Perform.* **6**, 77–97 (2000)
- Rossi, F.M., Cohen, S., Caperchione, E., Brusca, I.: Harmonizing public sector accounting in Europe: thinking out of the box. *Public Money Manag.* **36**, 189–196 (2016). <https://doi.org/10.1080/09540962.2016.1133976>
- Salehi, M., Fakhri Mahmoudi, M.R., Daemi Gah, A.: A meta-analysis approach for determinants of effective factors on audit quality: Evidence from emerging market. *J. Account. Emerg. Econ.* **9**, 287–312 (2019). <https://doi.org/10.1108/JAEE-03-2018-0025>
- Sari, R.P., Hastuti, S., Tannar, O.: Audit quality based on Internal Audit Capability Model (IACM) and gender as mediating variable in the public sector. *J. Econ. Business Gov. Challenges* **2**, 22–38 (2019). <https://doi.org/10.33005/ebgc.v2i1.61>
- Siregar, H., Muda, I., Fachrudin, K.A.: The impact of locus of control, ethics audit, time pressure, and commitment to deviant behavior in audit at foreign affiliated public accountants in Medan, Indonesia. In: *Proceedings of the 1st Aceh Global Conference (AGC 2018)*, pp. 416–423. Atlantis Press, Paris (2019). <https://doi.org/10.2991/agc-18.2019.64>
- Spanou, C.: State reform in Greece: responding to old and new challenges. *Int. J. Public Sect. Manag.* **21**, 150–173 (2008). <https://doi.org/10.1108/09513550810855645>
- Stašová, L.H.: The scope of control of the supreme audit office in the Slovak Republic and in the other Visegrad Four countries. *Soc. Econ.* **41**, 245–262 (2019). <https://doi.org/10.1556/204.2019.006>
- Tepalagul, N., Lin, L.: Auditor independence and audit quality. *J. Account. Audit. Financ.* **30**, 101–121 (2015). <https://doi.org/10.1177/0148558X14544505>
- Troupin, S., Put, V., Weets, K., Bouckaert, G.: Public auditing systems: from trends to choices. In: *6th Transatlantic Dialogue Conference*, pp. 1–25. Siena (2010)
- Visser, M., Van der Togt, K.: Learning in public sector organizations: a theory of action approach. *Public Organ. Rev.* **16**, 235–249 (2016). <https://doi.org/10.1007/s11115-015-0303-5>
- Yebba, A.A., Elder, R.J.: The effects of state-Level GAAP regulation on municipal audit markets, reporting quality, and audit fees. *J. Gov. Nonprofit Account.* **8**, 36–74 (2019). <https://doi.org/10.2308/ogna-52541>
- Chartered Institute of Public Finance and Accountancy, International Federation of Accountants: *International framework: good governance in the public sector*. New York (2014)
- Younas, M.A., Md Kassim, D.A.A.: Essentiality of internal control in audit process. *Int. J. Bus. Appl. Soc. Sci.* **5**, 1–6 (2019). <https://doi.org/10.33642/ijbass.v5n11p1>
- Zedan, K., Daas, G., Awwad, Y.: Municipal bonds as a tool for financing capital investment in local government units in Palestine. *Invest. Manag. Financ. Innov.* **17**, 213–226 (2020). [https://doi.org/10.21511/imfi.17\(1\).2020.19](https://doi.org/10.21511/imfi.17(1).2020.19)
- Zhukun, L., Wang, C., Zhang, C.: Government auditors' ethics commitment and audit quality. *SSRN Electron. J.* 1–24 (2018). <https://doi.org/10.2139/ssrn.3217733>
- Ziegenfuss, D.E.: The role of control environment in reducing local government fraud. *J. Public Budgeting Account. Financ. Manag.* **13**, 312–324 (2001)

# The Impact of Accounting Information System on the Organizations Financial Performance



Thabet Yusuf AlBastaki and Allam Hamdan

**Abstract** In the face of fast technological progress, increasing knowledge, and difficult demands from businesses and customers, an accounting information system is an essential instrument in the hands of managers seeking to sustainable competitive advantage. The impact of accounting information systems on organizations financial performance is investigated in this study. The primary goal of this paper is to review the theoretical and conceptual basis as well as research findings on accounting information systems and company financial performance. According to the findings of the review, previous studies on the impact of accounting information on financial performance focused on the cost implications of accounting information systems as they relate to corporate financial performance. The vast majority of studies used a survey study methodology to investigate this link, and the rest of the researches were conducted in industrialized economies where accounting information systems technologies have been extensively adopted. As a result, this study suggests that further research should done in this area to close this research gap.

**Keywords** Accounting information system · Financial performance

## 1 Introduction

The constantly expanding dependency for growth, expansion and development in the business field in the modern time had made it a necessity for managers to seek management strategies that are more advanced with the aim of improving the process of decision making within the organization. Many of these strategies are specifically made with the goal of maintaining a business throughout the continuance innovation in technology, customers increasing awareness, and customers' demands challenges.

---

T. Y. AlBastaki  
College of Business and Finance, Manama, Bahrain

A. Hamdan (✉)  
Ahlia University, Manama, Bahrain

The main strategy that is majorly adopted by organizations within the business field is the information system adoption strategy (Davoren 2019).

Information systems is the capability of the organization that defined by the data, policies, protocols, processes, software, hardware, and responsibilities (Borhan and Bader 2018). An information system is method the delivers important information with the purpose of improving decision making within the organization in organizing, planning, leading, directing and controlling the activities. There are multiple information syst type, which are the Management information system (MIS.), office automation system (OAS.), Transaction processing system (TPS.), Decision support system (DSS.), Expert system (ES.), Executive information system (EIS.), delivery system (DS.), Procurement system (PS.), enterprise resource planning system (ERPS.), knowledge work system (KWS.), and lastly the accounting information system (AIS.) (Yaser et al. 2014; Rainer 2007).

The Accounting Information System (AIS) is intended to be a system that has an important role in the daily management process and operations as the other information systems are intended to be within the organization. In the process of decision making, controlling, planning, and organizing with the aim of efficient utilizing of recourses, the accounting information system is considered to be as one of the supporting information systems in handling these functionalities for managers (Samer 2016). The accounting information system is a system that handles accounting data about a specific entity to a specific group, and these accounting data are identified, accumulated, measured, prepared, analyzed, communicated, and interpreted which is done by the system (Borhan and Bader 2018). Accounting information system is a tool the act for sources such, which is designed to gather the aimed financial data to deliver the aimed information for making management decisions in a specific needed time (Bodnar and Hopwood 2010).

The Accounting Information System (AIS) is a highly important system to all firms and organizations. It is developed with the aim of helping in the collection of data and helping the management in making decisions from the reported financial data the were transformed by the system from the raw and ordinary state (Harash et al. 2014). Accounting information system is a system that assists in detecting any event that has an impact that is economical on the organization by collecting and recording all the data and information required. As well it assists the internal and external stakeholders in the processing and communicating these data and information (Olusola et al. 2013). AIS has a huge effect on the organization and provides a drastic help by providing the needed reported data, financial statements, and analysis.

The accounting information system is expected to be associated and aligned with the financial status of the organization and its outcomes. The most important thing for a firm is its financial performance, which is the core for a healthy business, to provide the capability to meet the firm's commitments and obligations for the long-term. In other words, the level of financial objectives accomplishments is a financial performance. The financial objectives are determined by the manager through evaluating the past financial performance through the collected accounting and financial data by the AIS. The AIS mainly provides financial reports for the management and stakeholders to support them in the decision-making process and to prepare a strategic

response to the firm's operations. The financial information needs to be presented in great details and highly analyzed by the AIS. AIS is a computerized system that modernize the accounting process and practices through an end user application.

This research is aiming to provide a review on the impact of accounting information system on the organizations financial performance. The research will shed light on the gap in the impact of accounting information system on the organizations financial performance for a future study.

## 2 Accounting Information System

The Account information system is computerized system that assists the firm in the decision-making process that is done by generating the financial statements that are the result of the system's collecting, communicating, and processing the accounting data (Manchilot 2019). Computers provides a platform for storing accounting information and to functionalized environments for the information systems. Regarding the accounting information system, it operates in an associated allocation software, that is used through the computer hardware.

The accounting information system is defined as a system that includes data that are managed, processed, and controlled by resources and components to provide the needed important information for the process of decision making within the firm (Borhan and Bader 2018). The accounting information system must go through a much-needed process to provide the needed functionality as an information system does, it provides a needed connection between components and resources such as the staff, finances, equipment, and etc. and this connection is utilized to achieve the firms goals that is done through an established framework.

The accounting information system is a data collection, analysis, and conversion process into an actionable act. The system is defined as a computer system that provide output and results by processing, collecting, analyzing data (Borhan and Nafees 2018).

It was stated that a conclusion of policies, procedures, staff and equipment that works in an alignment in transforming the collected data into information that is important is an accounting information system process (Kashif 2018). AIS is data and information of the firm's operations that are provided to the employees to support them within the firm's environment by submitting the needed information in time to the authority.

The primarily functionality of the AIS is the organization's accounting information that is based on events throughout the past, present and, future (Rehab 2018). Every firm makes decisions regarding their prices, productions, policies, outsourcing, services, and investments; the AIS assists in making these decisions through information that is driven by the reports and analysis.

The Accounting information system is a highly important system that drives to implement the functionalities such as the planning process and controlling process that are sought by management of the firm (Samer 2016). The planning functionality,

the data that is related to planning is analyzed to achieve the firm objectives and goals is provided by the AIS. As well, the system provides information of the cost and profit relationship, and sheds light on the volume aspect which are all necessary to establish the amount of their interactions. The AIS in assisting the planning functionality, it sets up a path for future firm's requirements, which the firm will plan the cash flows for the development budgets; all of it is translated into financial standards with an aim towards a representation of the firm's activities, plans and policies throughout the departments within the organization (Frezatti et al. 2011). In the meanwhile, in the control functionality, a plan that is specific and clear is needed that demonstrate the aimed objectives and the core that the analyzed results are based upon to establish the needed path and steps. The control functionality is considered to be a tester for the already implemented aspect and already taking decisions, which is considered as a follow up the alignment of the implementation with firm's plans, standards, and policies. With this process the firm can find out if there is a need for correction of deviated aspects that should meet the interest of the shareholders and stakeholders, and to shedding light on the activities of the firm is aligned with the firm's goals with the assurance of the effectiveness of the operations (Onaolapo and Odetayo 2012; Merza Radhi and Sarea 2019; El Khoury et al. 2021).

There are accounting tools that are computerized with in the AIS are mainly associated with the organization's financial and economic results (Urquía et al. 2011). The benefits of adopting and using the AIS is the firm's flexibility in adopting environmental change, improved internal transactions management, and competitiveness surgency. Another benefit is the ultimate form of the organization achievement in a high level information flow, which handled between the employees that can help them in gaining new opportunities with the external environment, as in building external relationships (Pérez et al. 2010).

### 3 Financial Performance

The financial performance is a representation of the firm's health within the financial aspect, and the firm's capability to meet commitments of a financial nature to provide the intended services in the future (Weber 2008; Kamal 2017). The act of conducting an activity that is financial is considered to be a financial performance. In other words it is the level of achievement of financial objectives, and it is the process of the organization's policies and operations being measured in a financial and monetary manner.

The ability and capability of the organizational actions to align with financial objectives is a financial performance. There are two main factors that indicates the firm's financial performance, and these indicators are the accounting earnings and investors' earnings. The accounting earnings is looked upon in the firm's perspective of returns as a response of the decision-making process done by the management, while the investors' earnings are looked upon with the shareholders' perspectives (Ofoegbu 2003).

Financial performance is a measurement of a financial health of an organization throughout a time period (Farah et al. 2016). Moreover, it can be looked at as a financial decision that are followed with an aim of generating greater sales, profits, and a higher share value by the management and handling of the assets, funding, revenue, expense, and equity. The primarily aim is to provide all of the shareholders and stakeholders the needed financial information to provide them with the ability of making decisions in an investments matter. The financial performance repots can be used as a comparison financial health between multiple organizations.

The performance can be measured, and these measurements are the results relations, as in the outputs and outcomes of the firm and its financial performance, and the measurement by concentrating on the results determinants as in the inputs of the firm, such as the innovations, utilized resources, quality, and flexibility. Therefore, the results and the results determinants can be used as tools for the measurement of the performances of firms. Also, systems with the aim of performance measurement can be looked at as financial systems that can provide an evaluation of the firm's performance (Zuriekat et al. 2011).

The firm's performance measurements can be done by multiple ways. It is stated that the company's repayment capacity, efficiency, solvency, and liquidity can used to measure a financial performance (Fiori et al. 2009). Also, it was stated that financial ratios are dependent on in determining the financial performance of a firm (Lin and Liu 2005). Normally all the information of the firm's financials as a result of their operations are reported in a financial statement on a yearly basis, and the generated financial ratios are mainly sued as a reference and an analytic source to determine the organization's performance.

The organization's performance measurement depends on the financial ratios, due to the simplification of description regarding the financial performance of a company with a past comparisons to assist the managements.

#### **4 The Impact of Accounting Information System on the Organizations Financial Performance**

The accounting information system impact on the financial performance has been researched by many.

The purpose of this research is to see how AIS features influence the efficiency of a company's performance. Internal control is expected to lead to the development of trustworthy financial reports for decision-making and financial performance improvement. On February 2020, 90 questionnaire forms were prepared and sent to participants; 80 forms were returned. Due to its capacity to provide critical information for decision-making reasons and to assure the quality of accounting information, this study shed light on the importance of accounting information systems (AIS) for businesses. The goal of the study is to see if internal control has a role in the relationship between AIS and fraud detection (Al-Waeli et al. 2020).



It was studied in Jordan about the effect of AIS on financial performance with some of the real estate firms. A questionnaire has been used in this study to collect the needed data for employees that are working within the Ihdathiat Coordinates company, Afaq holdings, Real Estate Development, and Jordan International Investment company. a questionnaires were handed to two hundred and fifty, seventy five of which were rejected and one hundred and five of which were approved for examination. The data was analyzed using linear regression statistics in this study. According to the findings, The Jordan International Investment Company has reaped the biggest benefits from AIS, although the impact of AIS has no effect on Ihdathiat Coordinates as a result of the study (Al-Dalaien and Khan 2018).

The impact of accounting information systems on financial and non-financial metrics of Nigerian businesses is investigated. Researchers gathered qualitative and quantitative data from sixteen businesses. In 2014, the data was finalized and gathered using surveys and the Nigerian Stock Exchange. With the use of a statistical software (SPSS), the data is analyzed using multiple linear regression approaches. Accounting information systems have a substantial beneficial influence on financial and even the non-financial measuring indicators of firms in Nigeria, as stated by the empirical search (Ironkwe and Nwaiwu 2018).

The influence of accounting information systems on the financial performance of a group of real estate businesses that are located in Jordan is investigated. The research has used a survey research approach and the gathered data was from one hundred and seventy five employees from five Jordanian firms via questionnaires. The data is analyzed in this study and it was done by using linear regression statistics. The findings indicated that accounting information systems had a substantial influence on the financial performance regarding the studied firms (Borhan and Nafees 2018).

Examines the financial performance of selected FMCG firms in India using accounting information systems. The study used a survey with a 400 people sample size, and data was collected completed and valid questionnaires from 177 participants. The data was analyzed using the basic method of linear regression analysis, a 95 percent confidence level with the study hypotheses that were evaluated. The study's findings indicated that accounting information systems had a substantial influence on the financial performance of the ample companies in India (Kashif 2018).

The influence of accounting information systems on firm's performance is investigated. The study analyzed the data and evaluated the research hypotheses after collecting data from businesses in Saudi Arabia that are small and medium, which were 137. The findings and results indicated that there is a substantial influence on overall organizational performance when adapting the AIS, alongside its characteristics, such as cost reduction, improvement in the quality, and making decisions effectively (Rehab 2018).

The influence of accounting information systems on multiple commercial banks that are located in Jordan performance and profitability is investigated in this study. The study used a survey design, with data obtained from Jordanian bank workers that are a sample of 206 banks using a questionnaire. The data was analyzed and it is using linear regression as the method of analysis in the research. The findings show



that the AIS has a great influence on the profitability of the institutions that are part of the sample (Borhan and Bader 2018).

The impact of accounting information system deployment on commercial bank financial performance in Nigeria is investigated. The study used a specific survey research methodology, with data gathered from respondents from commercial banks who were chosen at random, the respondents are 80 and banks sample are 16. Secondary data within the financial statements of the institutions that are a part of the sample was also used in the study. Within the past years following AIS growth and implementation, return on total asset (ROTA), data on return on capital equity (ROCE), gross profit margin (GPM), and net operating profit (NOP) were gathered. The substantial effect of AIS implementation on bank performance was tested throughout the liner regression method. as to the findings shows, the AIS implementation delivers a favorable correlation with the performance measures (Akanbi and Adewoye 2018).

The influence on bank success in Jordan from accounting information systems is investigated. A survey research design is used in this study. The study gathered information through questionnaires distributed to bank workers within Jordan. The study hypotheses were proven by using multiple regressions and the correlations. Accounting information systems, as shown in the results and findings, have a major impact on the bank's profitability and success (Raed 2017).

The study examines the influence of accounting information systems on business performance in terms of internal control that is effective. The study used a qualitative data gathering approach, with prior literature from the field being evaluated. Secondary data was also employed in the study in order to arrive at dependable findings based on facts. The results indicated that when controlling aspect is handled effectively and efficiently, with performance improvements, accounting information has more credibility, and the internal users and external users may function with more suitable decisions (Teru et al. 2017).

The influence of accounting information systems on managerial performance and firm performance is investigated in this study. The data was obtained from the sampled SMEs, and volume of the sample is 74. The data is analyzed using a research approach survey. Regression analysis was the method used to with the collected data for the investigation. The findings demonstrated that the knowledge of accounting managers with the high-level management support consists of a significant impact on a firm's AIS, and the AIS has as well a significant impact on that firm's performance (Alnajjar 2017).

The influence of a computer-based accounting information system on managerial performance in the Nigerian public sector is investigated in this research. An investigative research path was taken in this study. In the aspect of accounting environment and internal control in the public sectors within Nigeria, the effects of computer-based accounting information system on the associated executive officers from the government agencies, divisions, or authorities were studied. The report identifies some of the issues connected with the deployment of AIS, such as expensive hardware and software installation costs, system maintenance expenses, and the need for specialized skills. The remaining factors consist of a reduction in numbers of staff, insufficient

security, and the high-quality backup that is available and needed equipment. The study also highlighted the benefits of deploying AIS, including lower operational costs, higher efficiency, improved external reporting, improved accuracy, and faster data processing in the system (Isa 2017).

The influence of the accounting information system on Procter & Gamble's organizational performance is investigated in this study. A qualitative methodology was utilized within this investigation. Questionnaires were used to collect data and it was on a Likert scale. The study takes into account a sample of P&G Limited workers and this sample consist of 174 employees. The statistical method for analysis was simple linear regression. Marketing performance was shown to charistrized with the greatest influence by the AIS, following that is the job performance. However, the financial performance, consisted with the least influence. The study found that accounting information systems had a substantial influence on P&G Limited's organizational performance (Khan 2017, Alshurafat et al. 2021).

The influence on the operational performance of Jordan's industrial companies from adapting the Accounting Information Systems is investigated. The search sample contains the businesses in various industries located in Jordan that are included on the Amman Stock Exchange list. The data showed that AISs utilized within the industrial businesses were successful in satisfying planning needs, in particular. The results also indicated that the business choices were made based on the decision-making process of executives, the board of directors has supported, which they were aligning with those ideas (Samer 2016).

## 5 Conclusion

Many firms have utilized accounting information systems to automate and integrate their company activities, resulting in increased efficiency and gain competitive advantage. This research analyzes the impact of accounting information systems (AIS) on business financial performance. The accounting information system's information technology (IT) component is expected to have the greatest influence on businesses since it allows them to easily track, record, and create financial and accounting data. The bulk of the statistical literature that were examined used a survey study approach to investigate the link between accounting information systems and company performance. For this inquiry, most of the studies used a very small sample size in addition to survey research methodology. Most of the researchers used indicators created by themselves and earlier experts to assess the accounting information system. Lastly, several studies focus on the influence of accounting information systems on overall company performance rather than financial success. In order to solve these concerns, additional study on the subject might be conducted.

## References

- Akanbi, T.A., Adewoye, J.: Effects of accounting information system adoption on the financial performance of commercial bank in Nigeria (2018)
- Al-Dalaien, B., Khan, N.: Effect of accounting information system on financial performance: a study of selected real estate companies in Jordan (2018)
- Alnajjar, M.: Impact of accounting information system on organizational performance: a study of SMEs in the UAE (2017)
- Alshurafat, H., Al Shbail, M.O., Mansour, E.: Strengths and weaknesses of forensic accounting: an implication on the socio-economic development. *J. Bus. Socio-economic Dev.* **1**(2), 135–148 (2021). <https://doi.org/10.1108/JBSED-03-2021-0026>
- Al-Waeli, A., Hanoon, R., Ageeb, H., Idan, H.: Impact of accounting information system on financial performance with the moderating role of internal control in Iraqi industrial companies: an analytical study (2020)
- Bodnar, G., Hopwood, W.: Accounting information system (2010)
- Borhan, O., Bader, O.: Investigating the impact of accounting information system on the profitability of Jordanian banks (2018)
- Borhan, O., Nafees, A.: Effect of accounting information system on financial performance: a study of selected real estate companies in Jordan (2018)
- Davoren, J.: The three fundamental roles of information systems in business (2019)
- Farah, N., Farrukh, I., Faizan, N.: Financial performance of firms: evidence from Pakistan cement industry (2016)
- Fiori, G., Di'Donato, F., Izzo, M.: Corporate social responsibility and firms' performance: an analysis on Italian listed companies (2009)
- Frezatti, F., Andson, B., Guerreiro, R., Gouvea, M.: Does management accounting play role in planning process? (2011)
- Harash, E., Al-Timimi, S., Alsaadi, J.: Effects of financing on performance of small and medium enterprises (SMEs) (2014)
- Ironkwe, U., Nwaiwu, J.: Accounting information system on financial and non-financial measures of companies in Nigeria (2018)
- Isa, A.: The impact of computerized accounting information system on management performance in public sector in Nigeria: problems and prospects (2017)
- Kamal Abu Amsha, M.: Evaluation and predictability of performance sector portfolio's and Al-Quds index/evidence from Palestine exchange. *Palestine Tech. Univ. Res. J.* **5**(1), 16–34 (2017). <https://doi.org/10.53671/pturj.v5i1.49>
- Kashif, B.: Impact of accounting information system on the financial performance of selected FMCG companies (2018)
- Khan, A.: Impact of accounting information system on the organizational performance: a case study of procter and gamble (2017)
- El Khoury, R., Nasrallah, N., Alareeni, B.: ESG and financial performance of banks in the MENAT region: concavity–convexity patterns. *J. Sustain. Financ. Invest.* **12**(1), 1–25 (2021)
- Lin, W., Liu, C.: Performance efficiency evaluation of the Taiwan's shipping industry: an application of data envelopment analysis (2005)
- Manchilot, T.: A review on determinants of accounting information system adoption (2019)
- Merza Radhi, D.S., Sarea, A.: Evaluating financial performance of saudi listed firms: using statistical failure prediction models. *Int. J. Bus. Ethics Govern.* **2**(1), 1–18 (2019)
- Ofoegbu, G.: Advanced financial accounting (2003)
- Olusola, A., Olugbenga, O., Zacchaeus, S., Oluwagbemiga, O.: Effect of Accounting Information on Investment in Nigerian Poultry Agricultural Sector (2013)
- Onaolapo, A., Odetayo, T.: Effect of accounting information system on organizational effectiveness: a case study of selected construction companies in Ibadan, Nigeria (2012)
- Pérez, E., Urquía, G., Muñoz, C.: Information technology implementation: evidence in Spanish SMEs (2010)

- Raed, K.: The impact of accounting information systems on the banks success: evidence from Jordan (2017)
- Rainer, R.: *Introduction to Information Systems* (2007)
- Rehab, U.: The impact of accounting information systems on organizational performance: the context of Saudi's SMEs (2018)
- Samer, M.: The impact of the effectiveness of accounting information systems on operational performance in public listed industrial companies in Jordan (2016)
- Teru, S., Idoku, I., Ndeyati, J.: A review of the impact of accounting information system for effective internal control on firm performance (2017)
- Urquía, G., Pérez, E., Muñoz, C.: The impact of accounting information systems (AIS) on performance measures: empirical evidence in Spanish SMEs (2011)
- Weber, E.: *A short history of derivative security markets* (2008)
- Yaser, H., Alina, S., Nor, A.: The role of different types of information systems in business organizations: a review (2014)
- Zuriekat, M., Salameh, R., Alrawashdeh, S.: Participation in performance measurement system and level of satisfaction (2011)

# Asset Management Performance: Evidence from Ukraine



Maksym Slatvinskyi , Tetyana Demchenko , Inna Kosmidailo ,  
and Nadiia Reznik 

**Abstract** The article is focused on asset management performance of investment management companies of Ukraine and on the possibility of forming effective measures of its optimization. The analysis of performance of investment management companies of Ukraine allowed to identify positive and negative tendencies of their activity. The economic modeling revealed the relationship between the asset management performance of investment management companies and such factors as costs, revenues, liabilities, equity and asset turnover ratio of this companies. The authors proposed a set of management measures, implementation of which would improve asset management performance of investment management companies.

**Keywords** Management · Asset · Performance · Investment · Business

## 1 Introduction

The issues of asset management of investment management companies are multifaceted, necessitating the need of their comprehensive solution. The performance of asset management system for investment management companies should be based on the development of resource capabilities, the consideration of economic risks, and the optimization of business processes. International standards have given a guidance for investment management companies on how to manage assets, including that they should have a well-defined asset management system, a control system and an evaluation of asset management performance (BSI Group 2008; ISO/PC 2014;

---

M. Slatvinskyi (✉) · T. Demchenko  
Pavlo Tychyna Uman State Pedagogical University, Uman, Ukraine  
e-mail: [ms@udpu.edu.ua](mailto:ms@udpu.edu.ua)

I. Kosmidailo  
Private Higher Education Institution “European University”, Uman Branch, Uman, Ukraine  
e-mail: [kosm\\_inna@i.ua](mailto:kosm_inna@i.ua)

N. Reznik  
National University of Life and Environmental Sciences of Ukraine, Kyiv, Ukraine  
e-mail: [nadya-reznik@ukr.net](mailto:nadya-reznik@ukr.net)

Institute of Asset Management 2014). Although the evaluation of asset management performance of investment management companies is complex but it is a relatively well-understood area. At the same time, accounting policy features and the existence of systemic economic problems in the countries with developing economies, form a new range of problems for investment management companies. The main issue of overcoming negative factors, deterring asset management performance of investment management companies in Ukraine, is the lack of proper management guidance for this process and it is reflected in three aspects: 1) the difficult economic situation in the country and undeveloped stock markets, which causes shortage of liquid investment assets, predetermining two other aspects; 2) high risk of investment; 3) low liquidity of economic entities' assets. If the task to counteract the factors of the first group have more complex systemic nature, the task to minimize the factors of the other two groups is, in our opinion, quite feasible for improving the asset management of investment management companies.

The practical nature of changes and the controversial nature of scientific approaches to the issue of investment companies' performance determine the identification of opportunities to increase it. The article is focused primarily on the issue of providing management staff of investment management companies with the necessary information to make operational management decisions in order to minimize and counteract the risks of investing in this companies. Given this, we will analyze asset management performance of investment management companies in Ukraine, and on this basis, we will determine the possibilities of the formation of effective measures for its optimization as well as develop necessary management tools.

## 2 Literature Review

Summarizing the opinions of scientists and practitioners on the issues that hinder the asset management of investment management companies, we consider it appropriate to combine them into three groups. The first group of the opinions considers the asset management of investment management companies as an organizational and economic system of management, which leads to the search for solutions to identified economic problems in this context (Henderson et al. 2014; Chareonsuk and Chansa-ngavej 2008; Komonen et al. 2012). The second group focuses on the identification of the factors based on the economic analysis that affect the efficiency of the asset management of investment management companies, on the basis of which the scientists develop appropriate management tools (Attwater et al. 2014; Berzins et al. 2013; McDonagh and Frampton 2002; Riahi-Belkaoui and Pavlik 1991; Blake and Timmermann 1998; Demchenko 2006). The third group focuses on the institutional and organizational aspects of asset management, the national characteristics of investment markets and the relevant experience of their governance (Arcuri 2013; Sciarelli et al. 2020; Wang et al. 2012).

However, despite the numerous studies of modern academic economists on this issue, it is required further research on the formation of institutional and organizational system of the asset management of investment management companies, economic and mathematical analysis of the asset management performance of this companies.

We consider it appropriate in this case to use accounting principles that are uniform for all common activities: prudence; full coverage; autonomy; consistency; continuity; accrual and matching of revenues and expenses; the predominance of essence over form; historical (actual) cost; single units of measurement; frequency. Most of these principles are directly related to investment and innovation activities.

However, some of the principles are highly important, while others have less influence on investment and innovation processes. For example, the principle of the predominance of essence over form is very important in recognizing investment property for accounting purposes, as individual items of long-term use may be recorded as non-current assets (if they are used for their intended purpose). At the same time, they can be considered as ordinary goods (those intended for sale) (Fomina 2017).

Clear periodization of investment projects is important in the investment sphere, as the implementation of most projects is a long-term process. The principle of prudence is equally important for investment activities, because for investments significant amounts of funds are withdrawn from circulation or attracted from the outside, and the investment process is long-term with a high degree of risk (Usatenko 2015).

At the same time, the principle of historical cost is less realized in the investment sphere. Due to the long duration of the investment cycle this is the need to conduct a revaluation at the balance sheet date. Thus, many investment assets are measured at fair value, impairment losses, amortized cost, equity method (Cherkasova 2016).

It should be noted that the regulatory framework should provide state support for the investment management companies, including by making appropriate changes and additions to tax, customs and banking legislation, creating appropriate legal mechanisms for the development of the secondary stock market, including stock exchange trading of venture securities, electronic trading systems, etc. (Fomina 2017). The state and local authorities may provide additional benefits to the investment management companies. In modern economic conditions, the main tasks of the investment management companies should be to establish links between research institutes, educational institutions and companies and to stimulate funding for R&D (McDonagh and Frampton 2002).

### 3 Purpose of the Study

The purpose of the article is to analyze asset management performance of investment management companies in Ukraine, and on this basis, to determine the possibilities of the formation of effective measures for its optimization as well as develop necessary management tools.

## 4 Methodology

The theoretical and methodological basis of our study are the scientific provisions of modern economic theory finance and management, the work of domestic and foreign scientists on the basics of asset management. Both general scientific and specific methods were used to solve the research tasks set in the work, in particular, statistical method, graphical method, methods of regression analysis, method of simultaneous equations solution.

## 5 Findings and Discussion

The analysis of the main performance indicators of the three largest investment management companies of Ukraine PJSC AMC “Kinto”, LLC AMC “Investment Partners”, PJSC AMC APF “Upinvest” gave the following data (Tables 1, 2, 3).

PJSC AMC “Kinto” in 2019 compared to 2015 had an increase in its assets by UAH 344 thousand, equity by UAH 439 thousand, net profit by UAH 1,519 thousand. In 2015–2019, it had an increase in both its expenses and revenues. It is positive that in 2019 compared to 2015 its liabilities decreased by UAH 95 thousand. In general, the company was stable and it was provided with all the necessary funds for its profitable activities.

LLC AMC “Investment Partners” in 2019 compared to 2015 had a significant increase in its assets by 86,867 thousand UAH, equity by 96,275 thousand UAH, net profit by 13,633 thousand UAH. In 2015–2019, it had an increase in both its expenses and revenues. It was positive that in 2019 compared to 2015 its liabilities decreased by UAH 9,408 thousand. It should be noted that the company was stable and it was provided with all the necessary funds for its profitable activities.

PJSC AMC APF “Upinvest” in 2019 compared to 2015 had an increase in its assets by UAH 11,668 thousand, but the company’s equity decreased by UAH 3,094 thousand, net profit decreased by UAH 6,027 thousand. In 2015–2019, it had an

**Table 1** Main performance indicators of PJSC AMC “Kinto”, thousand UAH

Indicators	2015	2016	2017	2018	2019	Deviation 2019 from 2015, (±)
Assets	70757	69601	68224	70343	71101	344
Equity	69371	68913	68106	68409	69810	439
Liabilities	1386	688	118	1934	1291	−95
Expenses	6793	11119	7467	8639	7119	326
Revenue	6735	10661	6654	9254	8580	1845
Net profit (loss)	(58)	(458)	(813)	615	1461	1519

Source: Authors’ calculations based on (PJSC AMC “Kinto” 2020)



**Table 2** Main performance indicators of LLC AMC “Investment Partners”, thousand UAH

Indicators	2015	2016	2017	2018	2019	Deviation 2019 from 2015, (±)
Assets	30786	57414	53209	72315	117653	86867
Equity	14533	28716	34318	55155	110808	96275
Liabilities	16253	28698	18891	17160	6845	−9408
Expenses	29748	78991	126510	149088	436318	406570
Revenue	36289	91535	133407	170094	416144	379855
Net profit (loss)	6541	12544	6897	21006	20174	13633

Source: Authors’ calculations based on (LLC AMC “Investment Partners” 2020)

**Table 3** Main performance indicators of PJSC AMC APF “Upinvest”, thousand UAH

Indicators	2015	2016	2017	2018	2019	Deviation 2019 from 2015, (±)
Assets	22245	23622	24007	19565	33913	11668
Equity	21752	23354	23346	19024	18658	−3094
Liabilities	493	268	661	541	15255	14762
Expenses	27855	55189	42212	52484	54358	26503
Revenue	33516	56791	42238	48162	53992	20476
Net profit (loss)	5661	1602	26	(4322)	(366)	−6027

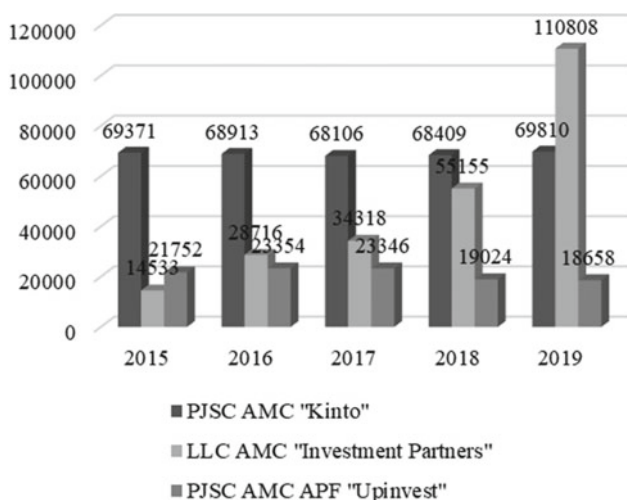
Source: Authors’ calculations based on (Amc and APF “Upinvest” 2020)

increase in both its expenses and revenues. It was negative that in 2019 compared to 2015 its liabilities increased by UAH 14,762 thousand. Overall, the company came out of the difficult situation that developed in 2018 (the net loss amounted to 4,322 thousand UAH), it was provided with all the necessary funds for its effective activities.

The amount of equity of the surveyed companies for 2015–2019 is shown in Fig. 1.

The practice of the investment management companies has shown a number of problems in their organization and performance: the difficulty of forecasting the average return and assessing its minimum amount, the difficulty of assessing the investment attractiveness of individual projects and investment portfolio, the difficulty of selecting funding sources and companies’ planning (Yakovets 2011).

The return on LLC AMC “Investment Partners” assets by pre-tax profit decreased by 14% in 2019 compared to 2017. Return on equity (assets) on net profit also decreased over the entire period from 21% in 2017 to 13% in 2019. Return on equity reflects the investments efficiency in the business, that is how much net profit the company received for each unit of equity. Return on equity decreased by 26% over the entire period from 2017 to 2019 showing a negative trend. Reinvestment ratio decreased over the entire period, so in 2017 it was 83%, in 2018—73%, and in 2019—22%. This change was negative, because the share of funds allocated for business



**Fig. 1** The amount of equity of the investment management companies for 2015–2019, thousand UAH. *Source* Authors’ calculations based on (PJSC AMC “Kinto” 2020; LLC AMC “Investment Partners” 2020; PJSC AMC APF “Upinvest” 2020)

development had decreased. This analysis makes it possible to identify positive and negative trends in company’s investment activity, and it is very important to analyze company’s critical investment projects, and it requires accurate information about revenue and expenses (Table 4).

**Table 4** Profitability analysis of LLC AMC “Investment Partners”

Indicators	2017	2018	2019	Deviation 2019 from 2017, (±)
1. Return on assets by pre-tax profit, %	29	37	15	–14
2. Return on equity (assets) on net profit, %	21	26	13	–8
3. Return on equity, %	48	69	22	–26
4. Return on sales for profit from operating activities, %	51	33	29	–22
5. Return on sales for gross profit, %	100	100	100	0
6. Return on sales for net profit, %	37	91	46	9
7. Reinvestment ratio, %	83	73	22	–61
8. Payback period of total equity, years	2.09	1.43	4.57	2.48
9. Payback period of equity, years	4.26	2.93	8.02	3.76

Source: Authors’ calculations based on (LLC AMC “Investment Partners” 2020)

A multiple correlation/regression analysis makes it possible to identify specific factors that significantly affect the change in the performance indicator, and also helps to identify forms of functional dependency or correlation between the performance indicator and the number of specific factors and to learn the degree of individual factors influence on the selected performance indicator (Khomenko and Zakharchuk 2017).

Thus, a multiple correlation/regression analysis make it possible to assess the influence of each specific factors introduced into the economic mathematical model on the studied performance indicator.

The choice of factors for a multiple correlation/regression analysis of the performance of the asset management of investment management companies is feasible depending on how certain factors affect the performance indicator.

We took the average values of the three largest investment management companies of Ukraine PJSC AMC “Kinto”, LLC AMC “Investment Partners”, PJSC AMC APF “Upinvest”, which operated in one sector in Ukraine since 2010 until 2019 (Table 5).

Therefore, in our task it was necessary to determine the influence of factors on the performance indicator, while finding the following function:

$$y = f(x_1, x_2, x_3, x_4, \dots, x_5) \quad (1)$$

$y$ —the performance of the asset management of investment management companies (net profit / average annual value of companies’ assets), thousand UAH.

$x_1$ —companies’ expenses, thousand UAH.

$x_2$ —companies’ revenue, thousand UAH.

$x_3$ —companies’ liabilities, thousand UAH.

**Table 5** Summary average data for a multiple correlation/regression analysis of the influence of factor values  $x_1, x_2, x_3, x_4, x_5$  on the performance of the asset management of investment management companies

Values	$y$	$x_1$	$x_2$	$x_3$	$x_4$	$x_5$
2010	-0.0637	254662	250639	10169	32622	4.0553
2011	-0.0356	824021	822684	151494	31451	7.2889
2012	-0.0200	261426	259218	14887	29232	2.3502
2013	0.0444	5994	7862	8985	31101	0.1867
2014	0.0582	6376	8643	5813	32035	0.2218
2015	0.0934	21465	25513	6044	35218	0.5887
2016	0.0997	48433	52995	9884	40327	1,1587
2017	0.0386	58729	60766	6556	41923	1.1535
2018	0.1124	70070	75836	6545	47529	1.4789
2019	0.1045	165931	159572	7797	66425	2.3516

Source: Authors’ calculations based on (PJSC AMC “Kinto” 2020; LLC AMC “Investment Partners” 2020; PJSC AMC APF “Upinvest” 2020)

$x_4$ —companies' equity, thousand UAH.

$x_5$ —companies' assets turnover ratio.

We found a relationship between the value of the performance of the asset management of investment management companies ( $y$ ) and selected five factors: investment management companies' expenses ( $x_1$ ), companies' revenue ( $x_2$ ), companies' liabilities ( $x_3$ ), companies' equity ( $x_4$ ), companies' asset turnover ratio ( $x_5$ ).

With MS Excel we built an economic mathematical model, which can be formulized as follows:

$$y = -0.092 - 0.0000067x_1 + 0.0000068x_2 + 0.0000004x_3 + 0.000004x_4 - 0.026x_5$$

The multiple correlation ratio  $R$  is equal 0.97 that proof a significant relationship of the performance indicator and its five factors.

The multiple determination ratio  $R^2$  is equal 0.94. This ratio value means that the change in the performance of the asset management of investment management companies by 94% depends on the change of specific factors introduced into the economic mathematical model.

Analyzing the results of economic mathematical modeling, we can conclude that the performance of the asset management of investment management companies increases with increasing investment management companies' revenue, liabilities and equity.

With the increase in the investment management companies' revenue by UAH 1,000 the performance of the asset management increase by UAH 0.0067; with the companies' liabilities increase by UAH 1,000 the performance of the asset management increase by UAH 0.0004; with the companies' equity increase by UAH 1,000 the performance of the asset management increase by UAH 0.004.

Conversely, the performance of the asset management of investment management companies decreases with increasing factors such as company expenses and asset turnover ratio. When companies' expenses increase by UAH 1,000, the performance of the asset management decrease by UAH 0.0067, and when asset turnover ratio increase by 1 point, the performance of the asset management decrease by UAH 26.

There is important in the multiple correlation/regression analysis the verification of the obtained economic mathematical model for multicollinearity.

To illustrate, the input data were transferred to the correlation matrix that was used to measure the level of relationship (multicollinearity) between the selected factor values and the performance indicator (Table 6).

The calculation of the correlation matrix allowed us to conclude that there is a significant relationship between the performance indicator ( $y$ ) and factor values, except for the pair  $y$  and  $x_4$ .

In addition to this relationship, it is appropriate to note factor values relationship. Verification for multicollinearity necessitated the exclusion of four factors from the economic mathematical model. This exclusion was applied to factor values  $x_1$ ,  $x_2$ ,  $x_3$ ,  $x_5$ , the absolute value of the correlation coefficients of them is  $>0.7$ , which characterized the high relationship between these factor values.

**Table 6** Correlation matrix

	y	x <sub>1</sub>	x <sub>2</sub>	x <sub>3</sub>	x <sub>4</sub>	x <sub>5</sub>
y	1					
x <sub>1</sub>	-0.634810	1				
x <sub>2</sub>	-0.631060	0.999897	1			
x <sub>3</sub>	-0.468531	0.937214	0.940728	1		
x <sub>4</sub>	0.607756	-0.190352	-0.195713	-0.246533	1	
x <sub>5</sub>	-0.658712	0.968416	0.966989	0.856258	-0.102186	1

\* Source: Authors' calculations based on data from the Table 5

**Table 7** Summary data for correlation/regression analysis of the influence of the factor value  $x_4$  on the performance of the asset management of investment management companies

Values	y	x <sub>4</sub>
2010	-0.0637	32622
2011	-0.0356	31451
2012	-0.0200	29232
2013	0.0444	31101
2014	0.0582	32035
2015	0.0934	35218
2016	0.0997	40327
2017	0.0386	41923
2018	0.1124	47529
2019	0.1045	66425

\* Source: Authors' calculations based on (PJSC AMC "Kinto" 2020; LLC AMC "Investment Partners" 2020; PJSC AMC APF "Upinvest" 2020)

Further we used a regression analysis to calculate the relationship between the performance indicator  $y$  and the factor value  $x_4$  (Table 7) using the Regression of the package 'Data Analysis' in MS Excel.

As a result of correlation/regression analysis, it was found that the multiple regression ratio  $R$  is equal 0.607 and indicates a significant relationship between the performance indicator  $y$  and the selected factor value  $x_4$ . The determination ratio  $R^2$  is equal 0.369 and indicates the dependence of the asset management of investment management companies by 36.9% of the equity of this companies (Table 8).

**Table 8** Calculated data correlation ratios

Indicators	Ratios	Standard error	t-statistics	P-value
Y-section	-0.088778	0.063259	-1.403420	0.198095
x <sub>4</sub>	0.000003	0.000002	2.164643	0.062337

\* Source: Authors' calculations

Thus, the analysis obtained the following correlation/regression equation:

$$y = -0.88778 + 0.000003x_4$$

It can be noted that with an increase in companies' equity by UAH 1,000, the asset management of investment management companies increase by UAH 0.003.

This economic mathematical model was obtained after calculating the multi-collinearity of specific factors and indicates the effect abandoned after checking factor on the performance indicator and it is final for use.

## 6 Conclusion

Examining the relationship between the performance of asset management of investment management companies and its factors such as expenses, revenue, liabilities, equity and the assets turnover ratio, it was found that the performance of asset management system increases with increasing investment management companies' revenue, liabilities and equity. Among them, the share of their equity has the greatest influence on the performance of asset management of investment management companies.

Given this, the main tools for improving the asset management system of investment management companies should be:

- the formation of a system of limits that restricts the maximum share of a particular issuer, sector, asset classes and categories of risk, liquidity and potential profitability;
- the development of strategies for hedging portfolios of investment management companies;
- the legislative expansion of available investment strategies of investment management companies and asset hedging systems;
- the creation of methods for operational restructuring of the investment management companies' portfolio;
- the formation of the system of tax incentives of income of investment management companies shareholders to stimulate their investment activity.

Investment management companies is taking a growing share in the economy of Ukraine. It is necessary to analyze the key indicators of their asset management to increase performance. In particular, economic mathematical modeling of the performance of asset management system of investment management companies will be helpful both now and in the future. The asset management of investment management companies, as shown by the results of the analysis, can be improved by expanding the available investment strategies and asset hedging system of these companies.

## References

- BSI Group. PAS 55-1: 2008 Specification for the optimized management of physical assets (2008)
- ISO/PC 251. ISO 55001:2014 Asset Management—Overview, principles and terminology (2014)
- Institute of Asset Management. Asset Management—an anatomy, Version 2, July 2014 (2014)
- Henderson, K., Pahlenkemper, G., Kraska, O.: Integrated asset management—an investment in sustainability. *Proc. Eng.* **83**, 448–454 (2014)
- Chareonsuk, C., Chansa-ngavej, C.: Intangible asset management framework for long-term financial performance. *Ind. Manag. Data Syst.* **108**(6), 812–828 (2008)
- Komonen, K., Kortelainen, H., Rääkkönen, M.: Corporate asset management for industrial companies: an integrated business-driven approach. In: Van der Lei, T., Herder, P., Wijnia, Y. (eds.) *Asset Management*, pp. 47–63. Springer, Dordrecht (2012). [https://doi.org/10.1007/978-94-007-2724-3\\_4](https://doi.org/10.1007/978-94-007-2724-3_4)
- Attwater, A., Wang, J.Q., Parlikad, A., Russell, P.: Measuring the performance of asset management systems. In: *Asset Management Conference 2014, London*, pp. 1–6 (2014)
- Berzins, J., Liu, C.H., Trzcinka, C.: Asset management and investment banking. *J. Financ. Econ.* **110**(1), 215–231 (2013)
- McDonagh, J., Frampton, C.: Measuring corporate real estate asset management performance. *Pac. Rim Property Res. J.* **8**(4), 263–276 (2002)
- Riahi-Belkaoui, A., Pavlik, E.: Asset management performance and reputation building for large US firms. *Br. J. Manag.* **2**, 231–238 (1991)
- Blake, D., Timmermann, A.: Mutual Fund Performance: evidence from the UK. *Rev. Financ.* **2**(1), 57–77 (1998)
- Demchenko, T.: Modeling of the enterprise asset valuation. *Actual Probl. Econ.* **4**, 31–36 (2006)
- Arcuri, M.C.: Italian asset management companies: Products and governance. *Corp. Ownersh. Control* **10**(2), 20–27 (2013)
- Sciarelli, M., Tani, M., Landi, G., Turriziani, L.: CSR perception and financial performance: evidences from Italian and UK asset management companies. *Corp. Soc. Responsib. Environ. Manag.* **27**, 841–851 (2020)
- Wang, J., Guthrie, D., Xiao, Z.: The rise of SASAC: asset management, ownership concentration, and firm performance in china's capital markets. *Manag. Organ. Rev.* **8**(2), 253–281 (2012)
- Fomina, O.: A Kontseptualni osnovy obliku venchurnoi diialnosti [Conceptual framework for accounting of venture operations]. *Invest.: Pract. Evidence* **24**, 12–16. (2017). [in Ukrainian]
- Usatenko, O.: Klyasyfikatsiia ryzykovykh innovatsiinykh proektiv dlia rozvytku teoretyko-metodolohichnykh aspektiv bukhhaltenskoho obliku venchurnoi diialnosti [New classifications of venture innovation projects for the improvement of theory and methodology of accounting for venture operations]. *Odesa Natl. Univ. Herald Econ.* **20**(4), 255–258 (2015). [in Ukrainian]
- Cherkasova, S.: Pro neobkhdnist posylennia innovatsiinoi spriamovanosti diialnosti venchurnykh fondiv v Ukraini [About the necessity of strengthening the innovation direction of the activity of venture capital funds in Ukraine]. *Black Sea Econ. Stud.* **10**, 76–81 (2016). [in Ukrainian]
- PJSC AMC “Kinto”. Financial Statement (2020). [in Ukrainian]. [https://www.kinto.com/KINTO-AMC/annual\\_information](https://www.kinto.com/KINTO-AMC/annual_information). Accessed 07 Aug 2021
- LLC AMC “Investment Partners”. Financial Statement (2020). [in Ukrainian]. <http://ip-am.com.ua/ua/reports>. Accessed 07 Aug 2021
- PJSC AMC APF “Upinvest”. Financial Statement (2020). [in Ukrainian]. <https://upinvest.ua/about>. Accessed 07 Aug 2021

- Yakovets, H.: Metodichni aspekty bukhhalterskoho obliku venchurnoi diialnosti [Methodology of accounting for venture operations]. *Probl. Theory Methodol. Account. Control Anal.* **4**, 416–421 (2011). [in Ukrainian]
- Khomenko, H., Zakharchuk, D.: Osnovni osoblyvosti venchurnoi diialnosti ta vidobrazhennia venchurnykh investytsii u systemi bukhhalterskoho obliku [The main features of venture capital activity and the accounting for venture investments in the accounting system]. *Problems of theory and methodology of accounting, control and analysis* (2017). [in Ukrainian]. <http://eztuir.ztu.edu.ua/jspui/bitstream/123456789/6293/1/145.pdf>. Accessed 07 Aug 2021



# Factors Affecting Investor Switching Intention to Fintech Peer-To-Peer Lending



Shadiq Shakur Ahmad Baruna, Zuliani Dalimunthe,  
and Rachmadi Agus Triono

**Abstract** This research investigates the factors that influence the Investor switching intention from deposits or investing their funds in traditional financial services, namely banks, to invest in the Financial Technology Peer-to-Peer Lending. We build the research model adapting the Push–Pull Mooring (PPM) Framework to describe the migration theory of customers switching behavior. The Push factors include customer’s Satisfaction on Bank and perceived Service Quality on Bank. While the Pull Factors is Individual’s Knowledge toward Peer-to-Peer Lending and Personal Reward Sensitivity. Multiple Regression Analysis is used to analyze the model and relationship between variables. We collected data from 170 respondents who are investing part of their portfolio in a bank deposit. We find that Pushing factors of customer satisfaction and perceived Service Quality on banks has a negative effect on investor switching intention. The Pull factor of an Individual’s Knowledge toward Peer-to-Peer Lending and personal Reward Sensitivity positively affects investor switching intention.

**Keywords** Peer-to-peer lending · PPM framework · Investment · Switching intention

## 1 Introduction

### 1.1 Background

As technology development is going on, we have already arrived at the Industrial Revolution 4.0 that as shown by the development of Artificial Intelligence, the Internet of Things (IoT), autonomous vehicles, biotechnology, and others (Schwab 2016). This technology development led to increased internet adoption, whereas

---

S. S. A. Baruna · Z. Dalimunthe (✉) · R. A. Triono  
Faculty of Economics and Business, Universitas Indonesia, 16424 Depok, Indonesia  
e-mail: [zuliani\\_d@ui.ac.id](mailto:zuliani_d@ui.ac.id)

S. S. A. Baruna  
e-mail: [shadiq.shakur@ui.ac.id](mailto:shadiq.shakur@ui.ac.id)

many services were conducted through websites or smartphones, such as browsing, shopping, and banking. According to Kemp (2021), there were 202.6 million internet users in Indonesia, which is increased by 15.5% or 27 million from 2020 to 2021.

This development boasts the innovation of the new players in the financial services industry, or called Financial Technology (Fintech). Financial Technology (Fintech) is an emerging financial industry that uses technologies to assist individuals to invest their finances better (Scheffel 2016). Fintech is any creative idea that enhances financial service processes by offering technology solutions based on various market circumstances (Leong and Sung 2018). Lee and Shin (2018) described six developing fintech business models; payment, wealth management, crowdfunding, Peer to Peer lending, capital markets, and insurance services.

The banking industry is predicted to be disrupted by financial technology development. Fintech is much faster and more agile than traditional banks in implementing and exploiting these opportunities using innovative technology solutions and a customer-centered approach (Drasch et al. (2018). Románova and Kudinska (2016) highlighted how a fintech is a form of financial and technological integration in which digital technology-based processes replace conventional financial frameworks such as banks. Specifically, Románova and Kudinska (2016) stated that banks could partially lose the market share due to new competitors, especially in payments, credit cards, and savings. Millar et al. (2018) stated that disruption in the context of technology and innovation implies that the previous product, services, or process to discontinue. Digitalization enables technology-driven banking services and creates new customer demands (Drasch et al. 2018). Kjellman et al. (2019) described the significant disrupting phenomena that how bank customers move away from existing banks through global social platforms and internet stores like Amazon or Alibaba. Thus, there is increasing concern regarding how the banking industry reshapes its operation due to technological changes.

The most representative business model of Financial Technology directly compared with bank operations is peer-to-peer (P2P) lending. P2P Lending works in a way in which individual investors give loans to individuals or companies via direct matches of lenders with borrowers over Internet platforms (Lin et al. 2013). P2P lending is a platform that allows people to lend and borrow money online using their computers or mobile devices (Wan et al. 2016), unsecured (Amalia et al. 2019), and without the involvement of financial institutions like banks or credit card companies (Yoon et al. 2019). This definition shows that P2P Lending has a similar business model with banks providing loans to the customers and generating interest income. Some financial sector actors perceived P2P lending as a threat to traditional banks, while others argue that P2P lending provides more flexible banking services (Románova and Kudinska 2016), and to minimize financial exclusion created current formal financial sector (Zhong and Jiang 2021).

P2P Lending in Indonesia is regulated and supervised by Financial Services Authority (Otoritas Jasa Keuangan, OJK). According to the OJK publication, by 2021, 148 P2P Lending companies listing in OJK; 41 of them are licensed, while the rest are only registered. The following table exhibits the Indonesian P2P lending data for 2019 and 2020.

**Table 1** P2P lending growth in Indonesia

	December 2019	December 2020	Growth %
Lender account	605.935	716.963	18.3%
Borrower account	18.569.123	43.561.362	134.6%
Loan amount (IDR)	81.497.510.828.317	155.902.554.218.280	91.30%

Source: OJK Statistics. <https://www.ojk.go.id/id/kanal/iknb/data-dan-statistik/direktori/fintech/Default.aspx>. Retrieved 15 July 2021

Table 1 shows that Fintech P2P Lending in Indonesia grows rapidly, 91.30%. However, the table shows that the borrower accounts grow higher (134.6%) than the lender accounts (18.3%). This unbalance growth indicates a significant demand for financing from the unbankable (Rizal et al. 2019). The unbankable represent those who are not creditworthy to receive bank loans for several reasons, such as lack of personal assets to provide as loan collateral (Dalimunthe et al. 2019). P2P lending provides loans without collateral requirements. The imbalance of account also shows that a smaller amount of big lender provides loans for many borrowers, indicating a shifting of funds from other investment instrument to P2P lending.

Despite the rapid growth of the P2P lending industry, there is limited research regarding factors why investors switch their investment from bank deposits to P2P loans, especially in Indonesia. Bansal et al. (2005) provided the Push–Pull Mooring (PPM) framework as a theory to explain why customers switch from one service to another. We evaluate how two pull factors - Satisfaction and Service Quality- and two push factors- Knowledge, reward sensitivity- affect investors' intention to switch their investment from banks deposits to P2P loans. In this research, we conducted a survey to gather primary data from potential and existing investors using questionnaires as research instruments.

This article consists of five parts. Introduction in the first part. Literature review in part two. Methods in part three followed with results and discussion in part four—conclusions provided in part five.

## 2 Literature Review

### 2.1 Push–Pull Migration Theory

Hsieh (2021) explains how migration theory explains how a person moves from one geographic location to another, and the push–pull theory is a dominant paradigm in the field. Furthermore, push–pull theory develops into a theoretical basis to explain how consumers move from one product or service to another (Bansal et al. 2005). Recently, this theory is getting more and more in the context of the transfer of technology applications used.

Bansal et al. (2005) developed a Push–Pull Mooring (PPM Model) to explain consumer migration in the services sector. The pull factors are beneficial provided by alternative service providers to entice consumers to move from their current provider. Customers will be pushed to turn to an option by the push effect, which is a detrimental factor by traditional service providers. On another side, pull mooring factors are described as factors that make it difficult for consumers to move from one service provider to another. Bansal et al. (2005) stated that the Push–pull mooring theory explained the consumers switching intention from one product or service to another. Switching intention is described as the level of possibility or certainty that customers will move from the current service provider to a new service provider.

## 2.2 Pushing Factor

Push factors are negative factors that compel people away from an original location. Bogue (1969) described push factors in migration theory such as a lack of jobs, loss of employment, or natural disasters. In consumer switching behavior, Njite et al. (2008) defined push factors as the driving force is a negative pushing factor for someone to abandon something. Hsieh (2021) evaluates satisfaction, perceived risk, social influence, relative advantage, compatibility, trialability, and image as pushing factors in his research on consumer migration to mobile payment in the context of healthcare services. Kotler (2012) defined customer satisfaction as a feeling of pleasure or disappointment resulting from a comparison between the expectations or services obtained. Customer satisfaction is a condition in which a customer feels that what is provided by a service provider can meet their needs and desires. Satisfied consumers will stay, while dissatisfied consumers will complain or switch (Anderson and Sullivan 1993). In this research, we hypothesises that:

H1: Investor's *Satisfaction* on bank negatively affects switching intention to P2P Lending.

Mangold and Babakus (1991) defined service quality as a comparison between the level of importance expected by the customer before using the service with the level of satisfaction obtained after using the service. In their research in New Zealand, Clemes et al. (2007) found that service quality negatively affects customers' switching intention to other products and or banks. The customer would be more likely to stay with the same service provider if the service provider is considered to have good service standards. Thus, we hypothesises that.

H2: Investor's perceived *service quality* on bank negatively affects switching intention to P2P Lending.

### 2.3 Pulling Factor

The pull effects refer to the positive factors that attract people to migrate to a better residence (Moon 1995). The attraction of the alternative is the most crucial factor in the pull factor in service switching intention research (Hou et al. 2011). Chang (2017) proves that knowledge includes techniques, specifications, data, features, interpersonal relationships, components, and tools that an individual possesses in dealing with specific works or tasks. Individual investors would not try something until they believe they have sufficient knowledge of new concepts (Salazar-Ordonez et al. 2018). The knowledge could be taken on as some perception about what individual investors have about P2P lending as an investment option and related techniques, attributes, and underlying features, thus we hypothesizes:

H3: Individual's *Knowledge* on P2P Lending positively affects switching intention to P2P Lending.

Reward sensitivity is a biologically based conceptualization of personality within Reinforcement Sensitivity Theory from Gray (1970), described the tendency of individuals to notice and seek out rewards in their environment Drasch et al. (2018). Moreover, Drasch et al. (2018) showed that investors in P2P lending generates higher returns compared to bank deposit interest rates. Individual investors with a greater desire for a better reward and a higher anticipated return on investment may prefer P2P lending. Thus we hypothesize that:

H4: Individual's *Reward Sensitivity* positively affects switching intention to P2P Lending.

## 3 Methods

### 3.1 Data and Survey Instrument

The questionnaire survey method is used in this research to collect the data. The research uses data consisting of 25 items to measure research variables: Satisfaction, Service Quality, Knowledge, Reward Sensitivity, and Switching Intention. The questionnaire was submitted to respondents using a 5-scale Likert scale from 1, strongly disagree, 5, strongly agree, and dichotomous Yes or No answer.

The population size (N) of respondents is unknown. This study uses a total of 170 respondents that is eligible to be a respondent through the screening process (Table 2).

**Table 2** Survey questionnaire

Items		Questions
Variables	Item	
Satisfaction	SAT1	I had a bad experience saving at a bank
	SAT2	I am satisfied with the safety of saving or depositing funds in the bank
	SAT3	I am satisfied with internet or mobile banking services
	SAT4	The overall service quality provided by the bank is great
	SAT5	Overall, I am satisfied with the experience of saving at the bank
Service Quality	SQ1	The bank provides services according to the promised time
	SQ2	Bank transfer service is Safe, Fast, and Accurate
	SQ3	The bank provides a fast and excellent information request service
	SQ4	The bank provides services as promised
	SQ5	Overall, to me, bank services are reliable
Knowledge	KNO1	I know the interest rate or profit offered by P2P lending platforms
	KNO2	I know the difference between investing in P2P lending compared to bank savings or deposits
	KNO3	I know the difference between investing in P2P lending compared to stocks in the capital market
	KNO4	I know the cost of investing in the P2P Lending Platform
	KNO5	I know the risk of investing in P2P lending
Reward Sensitivity	RS1	Investing in P2P lending offers an attractive return
	RS2	I like an investment that gives me a quick return
	RS3	I want to be the most successful compared to the people around me
	RS4	I worked hard to achieve my goal
	RS5	I got excited when I saw an opportunity to achieve my goals
	RS6	I switch my investment when I find a more promising opportunity
Switching Intention	SI1	I am interested in switching some of my investments to P2P lending
	SI2	I want to switch part of my investment from stocks/bonds/mutual funds to P2P lending
	SI3	I will switch all or most of my savings in the bank to be invested through P2P lending
	SI4	I will only switch a small portion of my savings in the bank to be invested through P2P lending

**Table 3** Validity and reliability test for variables

Variables	Items	KMO	Conclusion	Cronbach's alpha	Conclusion
Satisfaction	5	0.789	Valid	0.829	Reliable
Service quality	5	0.898	Valid	0.964	Reliable
Knowledge	5	0.898	Valid	0.939	Reliable
Reward sensitivity	6	0.858	Valid	0.874	Reliable
Switching intention	4	0.756	Valid	0.817	Reliable

## 4 Result and Discussion

### 4.1 Validity and Reliability Test Results

The table shows the results for the validity and reliability analysis for this research. All variables have a KMO value greater than 0.5. Thus, we conclude that the questionnaire used to measure variables of Satisfaction, Service Quality, Knowledge, Reward Sensitivity, and Switching Intention are valid measurements (Table 3).

### 4.2 Classic Assumption and Goodness of Fit Test Results

Before conducting the Ordinary Least Square (OLS) regression, it is necessary to test the traditional assumption, which consists of autocorrelation, heteroscedasticity, multicollinearity, normality, and linearity tests. Table 4 shows the validity and reliability test result, and the model's goodness of fit is shown in Table 5. Both Table 4 and 5 conclude that the data and model of this research can use for analysis.

**Table 4** Classical assumption test

Variables	Linearity	Heteroscedasticity	Multicollinearity
	Sig.	Sig. (Glejser test)	VIF
Satisfaction	0.005	0.799	1.175
Service quality	0.025	0.975	1.046
Knowledge	0.006	0.010	1.049
Reward sensitivity	0.009	0.467	1.152

**Table 5** Goodness of fit

Goodness of fit	Value
F-test	F-value = 15.134, Sig. = 0.000
R-squared	0.268
Adj. R-squared	0.251

**Table 6** Regression analysis

Variables	Unstandardized coefficients		t	Sig.	Conclusion
	B	Std. error			
(Constant)	-0.361	0.806	-0.448	0.655	
Satisfaction	-0.66	0.026	-2.523	0.013	H1 accepted
Service quality	-0.035	0.020	-1.754	0.081	H2 not accepted
Knowledge	0.054	0.019	2.901	0.004	H3 accepted
Reward sensitivity	0.126	0.020	6.194	0.000	H4 accepted

### 4.3 Regression Analysis Results

The regression analysis shows that from four independent variables used in this research, one variable is not significant as having a significance value greater than 0.05, that is, the service quality variables, the other variables are significant as having a value smaller than 0.05. from the Beta coefficient, Satisfaction and Service Quality have a negative relationship with the dependent variables. Both of them have a negative value of Beta. Meanwhile, Knowledge and Reward Sensitivity have a positive relationship as it has the Beta coefficient value of 0.054 and 0.126, respectively (Table 6).

One hundred seventy respondents support the hypothesis testing in this study. The majority of respondents are male, with a 57% proportion. As The majority of respondents are currently pursuing undergraduate degrees, the majority of respondents' age is below 25 years old. Also, 35% of the respondents have income below IDR 5.000.000. 31% of the respondents had never invested in the capital market while the rest, 69%, had ever invested in the capital market, meaning most of the respondents are well financially educated. 76% of respondents never invest in P2P lending, while 24% have invested in P2P lending.

As people see P2P lending as an alternative for investment besides the bank, this study describes that the customer Satisfaction level of banks has a significant and negative effect on investors' switching intention to switch to other alternatives. This finding supports the previous findings by Athanassopoulos et al. (2001) and Clemes et al. (2007) that in the case of financial services, customers are more likely to switch from one to the other if they are not satisfied. This finding implies how important banks are to keep their customers satisfied with the products and services to retain their customers. This finding is not supporting the findings by Sánchez-García and Currás-Pérez (2020) that states satisfaction is not significantly affecting customer switching intention in both utilitarian and hedonic services as they state satisfaction only accounts for a small portion of the variance of consumer behavior in the future.

Furthermore, the bank should not worry about improving the bank's Service Quality to retain customers, but it should be maintained as this research finds that perceived Service Quality of customers toward the bank has a negative and but not significant effect on customers switching intention. This research finding is not



supporting the previous study by Clemen et al. (2007) and Vyas and Raitani (2014) that finds the lower the customer has perceived service quality of the bank, the higher the intention of customers to switch to the other banks. However, this finding supports Afandi's (2020) findings that Perceived Service Quality is not significantly affecting the customers switching intention to P2P lending on the borrower side. We also found that bank customers have a positive perception of the bank's Service Quality; thus, it not encourages customers to switch to P2P Lending.

Although customers will not leave the bank entirely due to the different customers' needs that cannot be fulfilled by P2P Lending services, such as transferring funds, payment, and transactions, but the customers who save their funds in banks have a high chance of switching their funds to P2P lending if they are not satisfied with the bank.

This study confirms that Knowledge toward P2P lending has a significant and positive impact on Investor switching. Thus the more Knowledge toward P2P lending gains, the more likely customers will leave the bank and use P2P lending as an alternative. This finding supports previous research by Sun et al. (2020) and Liu et al. (2018), which states that knowledge positively affects customers switching to new services as customers will not use or try something new if they do not know about them the service. Thus P2P Lending company should promote their industry to increase people's Knowledge of P2P lending to grab new customers.

On the other hand, this study finds that reward sensitivity affects the customers switching intention, meaning that the more sensitive customers are to reward, the higher the likelihood of switching to P2P Lending. This finding supports previous research findings by Sun et al. (2020), which finds that Reward Sensitivity positively affects customers' intention to switch. As P2P Lending offers a higher return for investors compared to bank deposits return, customers with high-level reward sensitivity will have the intention to switch to leave the bank and invest in P2P lending. As banks could not compete with the interest rate offered by P2P Lending, banks should overcome this reward factor to retain their customers.

## 5 Conclusion

This study explains the Investor Switching Intention from saving their funds in a bank to be switched to Fintech P2P Lending by using the PPM Framework, which consists of the Push Factor that arises from the Bank and Pulls attractive factor factors from P2P lending. This study confirms that in terms of Investor switching intention from Bank to P2P Lending, pushing factors—Satisfaction variables -negatively affecting switching intention to P2P Lending. This finding meaning banks should maintain the customer's satisfaction to retain its customers. Meanwhile, the second push factor-Service Quality- does not significantly affect Investor switching intention, meaning that even though the bank suffered service failure, the customers will not switch to P2P Lending. In contrast, the pull factor of knowledge positively affects Investor

switching intention to P2P Lending and Reward Sensitivity is also confirmed to positively affecting customers switching intention.

## References

- Afandi, M.A.: switching intentions among millennial banking customers to fintech lending. *IJIEF: Int. J. Islamic Econ. Financ.* **3**(2), 283–304 (2020)
- Amalia, N., Dalimunthe, Z., Triono, R.A.: The effect of lender's protection on online peer-to-peer lending in Indonesia. In: *Proceedings of the 33rd International Business Information Management Association Conference, IBIMA 2019: Education Excellence and Innovation Management through Vision 2020*, pp. 6056–6066 (2019). <https://www.scopus.com/record/display.uri?eid=2-s2.0-85074066697&origin=resultlist>
- Anderson, E.W., Sullivan, M.W.: The antecedents and consequences of customer satisfaction for firms. *Mark. Sci.* **12**(2), 125–143 (1993)
- Drasch, B.J., Schweizer, A., Urbach, N.: Integrating the 'troublemakers': a taxonomy for cooperation between banks and fintechs. *J. Econ. Bus.* **100**, 26–42 (2018)
- Athanassopoulos, A., Gounaris, S., Stathakopoulos, V.: Behavioural responses to customer satisfaction: an empirical study. *Eur. J. Mark.* **35**(5/6), 687–707 (2001)
- Chang, J.: The effects of buyer-supplier's collaboration on knowledge and product innovation. *Ind. Mark. Manage.* **65**, 129–143 (2017)
- Bogue, D.J.: *Principles of Demography*. Wiley, New York (1969)
- Clemes, M.D., Gan, C., Zheng, L.Y.: Customer switching behaviour in the New Zealand banking industry. *Banks Bank Syst.* **2**(4), 50–65 (2007)
- Bansal, H.S., Taylor, S.F., James, Y.S.: "Migrating" to new service providers: toward a unifying framework of consumers' switching behaviors. *J. Acad. Mark. Sci.* **33**(1), 96–115 (2005)
- Dalimunthe, Z., Syakhroza, A., Nasution, M.E., Husodo, Z.A.: How feasible is a convertible Ijarah contract for SME financing?: a simulation approach. *J. Islamic Monet. Econ. Financ.* **5**(2), 439–458 (2019). <https://doi.org/10.21098/jimf.v5i2.1070>
- Hou, A.C., Chern, C.C., Chen, H.G., Chen, Y.C.: Migrating to a new virtual world': exploring MMORPG switching through human migration theory. *Comput. Hum. Behav.* **27**(5), 1892–1903 (2011)
- Hsieh, P.J.: Understanding medical consumers' intentions to switch from cash payment to medical mobile payment: a perspective of technology migration. *Technol. Forecast. Soc. Change* **173**, 121074 (2021)
- Kemp, S.: Data report (2021). <https://datareportal.com/reports/digital-2021-indonesia>. Accessed 07 June 2021
- Kjellman, A., Björkroth, T., Kangas, T., Tainio, R., Westerholm, T.: Disruptive innovations and the challenges for banking. *Int. J. Financ. Innov. Bank.* **2**(3), 232–249 (2019)
- Lee, In., Shin, Y.J.: Fintech: ecosystem, business models, investment decisions, and challenges. *Bus. Horizon* **61**(1), 35–46 (2018)
- Kotler, K.: *Marketing Management*. 14th edn. Pearson Education (2012)
- Leong, K., Sung, A.: FinTech (financial technology): what is it and how to use technologies to create business value in fintech way? *Int. J. Innov. Manag. Technol.* **9**(2), 74–78 (2018)
- Lin, M., Prabhala, N.R., Viswanathan, S.: Judging borrowers by the company, they keep: friendship networks and information asymmetry in online peer-to-peer lending. *Manage. Sci.* **59**(1), 17–35 (2013)
- Liu, Y., Hong, Z., Zhu, J., Yan, J., Qi, J., Liu, P.: Promoting green residential buildings: residents' environmental attitude, subjective knowledge, and social trust matter. *Energy Policy* **112**, 152–161 (2018)

- Mangold, W., Babakus, E.: Service quality: the front-stage vs. the back-stage perspective. *J. Serv. Mark.* **5**(4), 59–70 (1991)
- Millar, C., Lockett, M., Ladd, T.: Disruption: technology, innovation, and society. *Technol. Forecast. Soc. Chang.* **129**, 254–260 (2018)
- Moon, B.: Paradigms in migration research: exploring ‘moorings’ as a schema. *Prog. Hum. Geogr.* **19**(4), 504–524 (1995)
- Njite, D., Kim, W.G., Kim, L.H.: Theorizing consumer switching behavior: a general systems theory approach. *J. Qual. Assur. Hosp. Tour.* **9**(3), 185–218 (2008)
- Rizal, M., Maulina, E., Kostini, N.: Fintech as one of the financing solutions for SMEs. *AdBispreneur: J. Pemikiran Dan Penelitian Adm. Bisnis Dan Kewirausahaan* **3**(2), 89–100 (2019)
- Románova, I., Kudinska, M.: Banking and fintech: a challenge or opportunity? In: *Contemporary Issues in Finance: Current Challenges from Across Europe*, pp. 21–35 (2016)
- Sánchez García, I., Curras-Perez, R.: Is satisfaction a necessary and sufficient condition to avoid switching? The moderating role of service type. *Eur. J. Manag. Bus. Econ.* **29**(1), 54–83 (2020)
- Salazar-Ordóñez, M., Rodríguez-Entrena, M., Cabrera, E.R., Henseler, J.: Understanding product differentiation failures: the role of product knowledge and brand credence in olive oil markets. *Food Qual. Preference* **68**, 146–155 (2018)
- Scheffel, P.: Taming the beast: a scientific definition of fintech. *J. Innov. Manag.* **4**(4), 32–54 (2016)
- Schwab, K.: *The Fourth Industrial Revolution*. World Economic Forum, Cologny/Geneva (2016)
- Sun, W., Dedahanov, A.T., Shin, H.Y., Kim, K.S.: Switching intention to crypto-currency market: Factors predisposing some individuals to risky investment. *PLoS One* **15**(6), e0234155 (2020)
- Vyas, V., Raitani, S.: Drivers of customers’ switching behavior in the Indian banking industry. *Int. J. Bank Mark.* **32**(4), 321–342 (2014)
- Wan, Q., Chen, D., Shi, W.: Online peer-to-peer lending decision making: Model development and testing. *Soc. Behav. Personal. Int. J.* **44**(1), 117–130 (2016)
- Yoon, Y., Li, Y., Feng, Y.: Factors affecting platform default risk in online peer-to-peer (P2P) lending business: an empirical study using Chinese online P2P platform data. *Electron. Commer. Res.* **19**(1), 131–158 (2019)
- Zhong, W., Jiang, T.: Can internet finance alleviate the exclusiveness of traditional finance? Evidence from Chinese P2P lending markets. *Financ. Res. Lett.* **40**, 101731 (2021)

# Contemporary Management Accounting Practices, Innovation and Organizational Performance of Service Organizations in Malaysia



Marwan Assim Alhasani, Ruhanita Maelah, and Amizawati Mohd Amir

**Abstract** The purpose of this study is to examine the relationship between contemporary management accounting practices (CMAP), innovation and organizational performance (OP) of service companies in Malaysia. CMAP is represented by Decision Support System (DSS), Balanced Scorecard (BSC) and Total Quality Management (TQM). The population of this study includes all the service listed companies and large scale non-listed companies. Purposive random sampling techniques is deployed and a total of 139 useful responses were collected through the questionnaire. Analyzing the data using the Social Science Statistics Package (SPSS) and Smart Partial Least Squares (Smart PLS). Results showed CMAP has a positive and significant effect on innovation and OP. The components of CMAP (DSS, BSC, TQM) have positive and significant effects on OP. Innovation has positive and significant effect on OP. Service companies in Malaysia are recommended to focus more on deploying the CMAP to improve their competitiveness. In addition, innovation is important for companies to achieve competitive advantage and improve the organizational performance.

**Keywords** Contemporary management accounting practices · Organizational performance · Decision support system · Balanced scorecard · Total quality management · Service

## 1 Introduction

Organizational performance (OP) is the last dependent variable in the context of management, and it is of importance to several stakeholders that include individuals, organizations, and governments. Several researchers indicate that in the context of management, OP is important to evaluate the achievement of the organizational goals (Alaarj et al. 2016; Shan et al. 2016). The importance of OP increased when it comes to service companies. This is because these companies are the pillars of the economy

---

M. A. Alhasani (✉) · R. Maelah · A. M. Amir  
Faculty of Economics and Management, Universiti Kebangsaan Malaysia, 43600 Bangi,  
Selangor, Malaysia  
e-mail: [pkk@ukm.edu.my](mailto:pkk@ukm.edu.my)

and their success can reduce the unemployment and increase the Gross Domestic Product (GDP) (Fraihat and Samadi 2017).

Due to the importance of OP, prior literature, intensively investigated its predictors in public listed companies (PLCs) using secondary data approach. Predictors in prior literatures focused on the corporate governance such as audit committee, the board of directors, and chief executive officer (CEO) (Julizaerma and Sori 2012; Kallamu and Saat 2015). However, new and emerging predictors that can predict the OP such as management accounting practices have been investigated in limited number of studies (Sleihat et al. 2012; Ashfaq et al. 2014).

Developing countries such as Malaysia faces fierce competition and problems in improving its social and economic status. Management accounting practices can enhance the performance of companies, which in turn contribute to the prosperity of the country and the economy (Ayedh and Housseem Eddine 2014; Tuanmat and Smith 2011). Management accounting practices can be categorized into traditional and contemporary (Hutaibat and Alhatabat 2019). Traditional management accounting practices include break even sales, budgeting, strategic planning, product costing and profitability as well as the return on investment. Contemporary management accounting practices (CMAP) includes techniques such as value-based management (VBM), activity-based costing (ABC), total quality management (TQM), non-financial performance measurement systems, activity-based management (ABM), balanced scorecard (BSC), strategic management accounting (SMA), Organizational performance (OP) is the last dependent variable in the context of management, and it is of importance to several stakeholders that include individuals, organizations, and governments. Several researchers indicate that in the context of management, OP is important to evaluate the achievement of the organizational goals (Alaarj et al. 2016; Shan et al. 2016). The importance of OP increased when it comes to service companies. This is because these companies are the pillars of the economy and their success can reduce the unemployment and increase the Gross Domestic Product (GDP) (3).

Due to the importance of OP, prior literature, intensively investigated its predictors in public listed companies (PLCs) using secondary data approach. Predictors in prior literatures focused on the corporate governance such as audit committee, the board of directors, and chief executive officer (CEO) (Julizaerma and Sori 2012; Kallamu and Saat 2015; Sleihat et al. 2012). However, new and emerging predictors that can predict the OP such as management accounting practices have been investigated in limited number of studies (Sleihat et al. 2012; Ashfaq et al. 2014).

Developing countries such as Malaysia faces fierce competition and problems in improving its social and economic status. Management accounting practices can enhance the performance of companies, which in turn contribute to the prosperity of the country and the economy (Ayedh and Housseem Eddine 2014; Tuanmat and Smith 2011). Management accounting practices can be categorized into traditional and contemporary (Hutaibat and Alhatabat 2019). Traditional management accounting practices include break even sales, budgeting, strategic planning, product costing and profitability as well as the return on investment. Contemporary management accounting practices (CMAP) includes techniques such as value-based management

(VBM), activity-based costing (ABC), total quality management (TQM), non-financial performance measurement systems, activity-based management (ABM), balanced scorecard (BSC), strategic management accounting (SMA),

## 2 Literature Review

### 2.1 Contemporary Management Accounting Practices

CMAP is referenced as “the tools and techniques used to provide organizations with relevant information for the effective and efficient use and management of resources so as to add value to customers and shareholders” (Langfield-Smith et al. 2017). For example, (Ashfaq et al. 2014) stated that the CMAP are BSC, ABC, activity-based budgeting, target costing, customer profitability analysis, economic value added, benchmarking, back flush costing, life cycle costing, constrains theory, kaizen approach costing. Activity based management (ABM), value chain concept, just in time effects, and enterprise resource planning (ERP) as contemporary techniques that are used by practitioners. In the study of Pollanen and Abdel-Maksoud (2010), the CMAP also includes benchmarking and throughput accounting (Shan et al. 2016; Antunes et al. 2017), proposed that the CMAP include TQM. In the study of Ashfaq et al. (2014), only costing practice, budgeting practice, decision making practice and performance evaluation practices were examined as CMAP, while study by Ahmad (2014) added the SMA.

This study operationalized CMAP to include DSS, TQM, and BSC. Previous studies in Malaysia indicated that these CMAP techniques are practices of Malaysian companies for enhancing their decision making process and having a competitive advantage (Nik Abdullah 2020; Ahmad 2017; Ghassan et al. 2019). DSS provides managers of the companies with important information that can help in making accurate decision (Ashfaq et al. 2014), including short and long term decision (Ahmad 2017). Ashfaq et al. (2014) pointed out that the DSS include the break-even analysis, product profitability analysis, stock control model, customer profitability analysis, payback, accounting rate of return, net present value, and internal rate of return.

TQM is known as a set of management concepts and tools designed to involve managers, employees, and workers to produce continuous performance improvement (Hoque 2004). It aims to provide a continuous improvement in all organizational processes (9). It is mainly focuses on the continuous improvement in the product and services provided to customers (Arshad and Su 2015) BSC is defined as a strategic management technique, organized from four perspectives, to transform the organization’s strategy into clear goals, measures, targets and actions (Kaplan and Norton 1996). BSC is recently used as a management accounting system to evaluate the performance of organization and suggest corrective measures. It includes the customer satisfaction, the financial indicator, Internal business process, learning and growth (Ahmad 2014).

## 2.2 *CMAP and Organizational Performance*

The previous literatures focusing on the usage of CMAP in SMEs and the relationship between CMAP and OP were reviewed to understand the Results of existing research and identification of gaps in the literature. (Tuanmat and Smith 2011) examined the changes in MAP and its role in affecting the performance of manufacturing SMEs in Malaysia and indicated positive relationship. Similarly, a study by Ahmad (2014) also examined the effect of CMAP such as costing, budgeting, performance evaluation, DSS and SMA on the performance of manufacturing SMEs in Malaysia. Results showed positive relationship between costing system and annual sales turnover, The level of competition in the market and the use of advanced production techniques. The budget system is positively correlated with the intensity of market competition. Performance evaluation system has positive relationship with costing system, budgeting system, and use of advanced manufacturing technology. DSS has significant relationship with commitment of owners/manager and SMA has a positive relationship with advanced manufacturing technology and commitment of owner.

In Malaysian manufacturing industry, the study of Ahmad (2014) found adoption of CMAP among SMEs is lacking. (Ahmad 2017) indicated costing and performance measurement system are widely used by all companies while sophisticated MAP is used by large companies. The study also found that certain MAPs have significant relationship with financial performance and non-financial performance. A study conducted by Antunes et al. (2017) In Portugal, the aim is to examine the impact of TQM on the performance of SMEs and the mediating role of innovation. Findings indicate that the TQM has significant effect on innovation, and innovation has effect on performance. On the other hand, it was found that innovation had no association with the adoption of activity-based accounting in SMEs in Oman (Askarany 2016).

## 2.3 *Innovation*

The innovation is defined as the implementation and change of methods to produce a product or service (Shan et al. 2016). It is to try new methods to produce innovative product and services that sharpens the competitive advantage of organizations. In addition, it helps companies to create new market segment as well as to improve production methods and to innovatively create new product and services (Shan et al. 2016).

Innovation is important for management to try new CMAP and employ these practices to improve the organizational process which ultimately improve the OP. Against this view, few studies incorporated the innovation in the context of CMAP and its relationship OP. (Ayedh and Housseem Eddine 2014) examined the effect of CMAP on the product innovation. Askarany (2016) also investigated the role of innovation. For this study, CMAP is expected to have significant relationship with

innovation, and it is proposed to have significant relationship with organizational performance.

## 2.4 CMAP, OP and Innovation

The Resource Based View (RBV) suggests that the performance of companies as well as the competitive advantages can be improved if the companies relied on their resources and capabilities (Bharadwaj 2000). According to RBV, an organization is considered as a set of resources and capabilities. Wernerfelt (1984). In term of resources, and based on RBV, resources are defined as the stock of available factors owned or controlled by the organization. They are made up of tangible components, including financial assets and physical assets such as property, equipment, plant, and intangible components like human capital, technology knowhow, patent, and experience of the top management (Amit and Schoemaker 1993; Lai et al. 2010). On the other hand, RBV views capabilities as “the ability of an organization to use its resource to affect a desired end” (Amit and Schoemaker 1993).

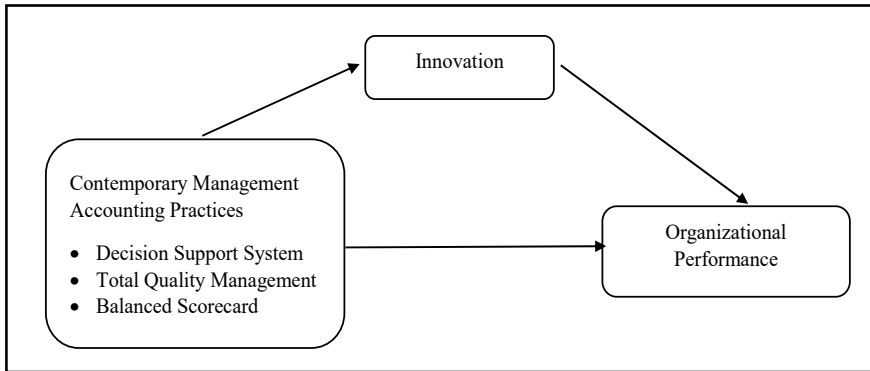
According to RBV, each organization has different resources and capabilities. The survival of organizations relies on their innovation in creating new resources as well as build new inimitable capabilities to achieve competitive advantage (Prahalad and Hamel 1990). The RBV has been widely used in the marketing, operations, and strategic management literature to understand the interaction between these functions and their impact on improving performance (Song et al. 2005). Previous studies have shown that there is a significant causal relationship between functional abilities and OP (Kozlenkova et al. 2014; Nath et al. 2010).

Based on the RBV literature, this study proposes that the CMAP and its components Will have a significant impact on innovation and OP of the Malaysian service companies. In addition, the study proposes that the innovation will mediate the effect of CMAP on the OP of service companies in Malaysia. Accordingly, Fig. 1 shows the conceptual framework of this study.

In line with the RBV, the theory suggested that organization can deploy its resource and capabilities to improve its performance. CMAP is a resource of organizations and can be utilized to improve the performance of service companies in Malaysia. In the study of Ahmad (2014), Research results show that CMAPs have a significant impact on organizational change and OP. Nik Abdullah (2020) found that CMAP affected positively the performance of manufacturing SMEs in Malaysia. CMAP are important for companies because it helps the companies to focus on all aspect and priorities its strategic goals by being future oriented and customer focus as well as provides the management with financial and non-financial information to help improve decision making (Sherine and McLellan 2017).

Companies that use the CMAP have more accurate decision making, higher level of productivity and competitiveness (James 2012). Using the CMAP affected positively the organizational satisfaction. For this study, CMAP is predict to have a





**Fig. 1** Conceptual framework

significant impact on the OP of Malaysian service companies.. Consequently, it is hypothesized:

***H1: CMAP has a significant positive effect on OP of service companies in Malaysia.***

Decision Support System improves the ability of managers to make accurate decision. Found that DSS has significant effect on the commitment of managers among manufacturing SMEs in Malaysia. Ahmad (2014) indicated that the adoption of DSS has impact on the overall performance of SMEs manufacturing companies in Malaysia. Decision making success affected the firm growth in food industry in Thailand (Hannimitkulchai et al. 2019). For this study, DSS is predict to have a significant impact on the performance of Malaysian service companies. Accordingly, it is hypothesized:

***H1a: Decision Support System has a significant positive effect on the performance of service companies in Malaysia.***

Total Quality Management is designed to improve the quality of product and services and ultimately enhance the performance of companies. Shan et al. (2016, Ghassan et al. (2019), found positive effect of TQM on organizational performance. TQM also affected the organizational change and organizational performance in public sector in Australia (Ahmad 2014). In the study of Antunes et al. (2017), the findings indicated that TQM affected positively the innovation and the performance of SMEs in Portugal. For this study, TQM is expected to have a significant impact on the performance of Malaysian service companies. Accordingly, it is hypothesized:

***H1b: Total Quality Management has a significant positive effect on performance of service companies in Malaysia.***

Balanced Scorecard is widely use as performance measurement system. Ahmad (2014) indicated that the usage of the BSC is effective in public sector and has a significant impact on the organizational change and performance of public sector in

Australia. Also, the findings of Nuhu et al. (2017) in Australian public sector indicate that the BSC is important for the success of CMAP. Ayedh and Houssem Eddine (2014) pointed out that BSC is widely used in Malaysia and important significant impact on the performance of service companies. For this study, it is assumed that the effect of BSC on performance of service companies in Malaysia is positive. Therefore, it's hypothesized:

***H1c: Balanced Scorecard has a significant positive effect on the performance of service companies in Malaysia.***

Contemporary Management Accounting are tools that help the organization to achieve their strategies. Few study has been pertaining to the innovative techniques used in service companies. In addition, Previous research has rarely examined the link between CMAP and innovation. For example, in the study of Pasch (2019) CMAP was proposed as a mediator between strategy and innovation and it was found that CMAP has a significant effect on innovation of the companies. In the study of Ayedh and Houssem Eddine (2014), the practices of CMAP such as TQM, BSC, SMA were found to affect the innovation of listed companies in Malaysia. Shan et al. (2016) proposed that TQM as practice of CMAP has significant effect on innovation. This study proposes that CMAP will influence the innovation of Malaysian service companies.

***H2: Contemporary Management Accounting Practices has a significant positive effect on innovation of service companies in Malaysia.***

Due to the continuous changes in business environment, innovation has become important for companies to sharpen their competitiveness and respond to the upcoming challenges (Chenhall and Langfield-smith 1999). Previous research has rarely examined the relationship between innovation and organizational outcomes (such as organizational performance). In the study by Antunes et al. (2017) The research found that innovation has a significant impact on the organizational performance of Portuguese companies. Shan et al. (2016) proposed that innovation will have a significant impact on corporate performance of companies in Malaysia. In the study of Noruzy et al. (2013), the findings indicate that innovation has a significant positive effect on OP. In this research, it is proposed that innovation will affect the OP of Malaysian service companies.

***H3: Innovation has significant positive effect on organizational performance of service companies in Malaysia.***

### 3 Methodology

The study aims to confirm the proposed hypotheses, which have been developed based on previous theories and literature. For this reason, Designing quantitative studies through structured surveys is the best strategy for data collection (Forza 2002;

Sekaran and Bougie 2013). The survey method is “a technique based on communicating with a representative sample of people to collect raw data” (Zikmund et al. 2013).

This study uses a questionnaire as a data collection tool. The questionnaire is a structured close ended. The measurements of the variables were adopted from previous studies that have investigated the variables of this study. The questionnaire was developed to have three main sections. First section was devoted to present a cover letter and introduction to the questionnaire. In the second section, questions are devoted to ask about the background of the respondents such as their age, gender, education, and experience. Third section seeks to find information related to the variables of the study. Table 1 shows the variable measurements of this study.

The population of this is service companies in Malaysia. The target respondents are the Chief Executive Officer (CEO), Chief Financial Officer (CFO), head of accounting or executive level representative identified by the companies. According to Bursa Malaysia website, there are two types of listing: the main market (789 companies) and the ACE market (131 companies). This in total makes the listed companies account to 920 companies out of which a total of 406 companies are classified as service companies. Similar to (18), this study also take into account service companies from the Malaysia Services Directory. It showcases Malaysian companies registered with the Malaysia External Trade Development Corporation (MATRADE), which indicates 8119 companies. This makes the population of this study accounts to 8,525 companies.

This study deployed purposive random sampling technique. The sample size is calculated based on Krejcie and Morgan (1970) and referred in Zikmund et al. (2013). The sample size of a population of 8,525 companies with degree of confidence 95% and margin error 5% is 368 respondents. Following the recommendation of Hassan and Ghazali (2012) to double the sample size due to the concern of low response rate, a decision was made to increase the sample size to 736. The role of thumb for sample size when structural equation modelling (SEM) is deployed is 200 (Kline 2015).

The data collection was conducted online using google application. A total of 736 questionnaires were distributed through e-mails obtained from the website of the companies, Bursa Malaysia and MATRADE. Respondents were given a period of one month to complete the questionnaire, followed by two reminders. Total collected

**Table 1** Variable measurement

Variable	No of items	Source	Scale
CMAP			(1) Strongly disagree
DSS	8		(2) Disagree
TQM	10		(3) Neutral
BSC	6		(4) Agree
Innovation	3		(5) Strongly agree
OP	7		

responses are 144, missing values and outliers were checked resulting in deleting five responses and reducing the complete and usable responses to 139 with response rate of 18.8%. (44) suggested that 100 to 150 responses are sufficient for deploying structural equation modeling (SEM).

## 4 Analysis and Results

### 4.1 Descriptive Analysis

Table 2 presents the profile of the respondents. The gender, age, education, job title, and experience of the respondents are presented. Majority of the respondents have Bachelor degree (47.5%), hold positions as Head of Accounting Department (42.4%), and have between 11–15 years of work experience (40.3%).

The profile of the companies participated in this study shows the industry of the companies, number of employees, sales or revenue of the companies, status of listing, and the age of companies. In term of industry, the respondents are distributed among eight industries with the majority (23.0%) from the information and communication service. In terms of size, a total of 108 companies (77.7%) employ 30 to 75 employees, and 84 (60.4%) of the companies are earning between RM3 million to RM20 million annually. Non-listed companies account for 111 (79.9%) of the companies are while listed companies account to 28 (20.1%) of the sample of this study. In term of age, 61 (43.9%) of the companies are in the age between 5 to 10 years, followed by 43 (30.9%) and 29 (20.9%) between 11 to 20 years and older than 20 years respectively.

Normality can be checked using (1) numerical approach using the value of skewness and kurtosis which is expected to be less than one; and (2) graphical by examining the histograms of the variables (Hair et al. 2017). Table 3 display the amount of skewness and kurtosis are less than 1 point out that the data has a normal distribution.

### 4.2 Measurement Model

The assessment of the measurement model includes the reliabilities and the validities. The reliability includes the Cronbach's alpha and composite reliability are expected to be greater than 0.70 (Hair et al. 2017). Table 4 shows that the Cronbach's Alpha and composite reliability are greater than 0.70 indicating that the measurement are reliable. In term of the validity, the convergent validity is assessed by the average variance extracted (AVE) which is expected to be greater than 0.50 (Hair et al. 2017). AVE is more than 0.50, indicating that the items of each variable are able to explain more than 0.50 of the variances in the measurement indicating the measurement has a convergent validity.

**Table 2** Background of the respondents

Item	Description	Frequency (N = 139)	Percent
Education	Bachelor degree	66	47.5
	Post-graduate (MSc, MBA, Ph.D.)	36	25.9
	Professional qualification	37	26.6
Job title	Head of accounting department	59	42.4
	Chief executive officers	4	2.9
	Chief finance officers	38	27.3
	Others	38	27.3
Work experience	Up to 5 years	22	15.8
	5–10ears	47	33.8
	11–15ears	56	40.3
	16–20 years	10	7.2
	Over 20 years	4	2.9
Industry	Banking and finance	5	3.6
	Insurance companies	8	5.8
	Healthcare	14	10.1
	Legal and accounting service	12	8.6
	Consulting service companies	14	10.1
	Hotels	19	13.7
	Education	15	10.8
	Information and communication	32	23.0
	Other	20	14.4
No. Employees	5–29	13	9.4
	30–75	108	77.7
	Over 75	18	12.9
Sales	From RM 300,300 - < to RM < 3 Million	36	25.9
	RM 3 million -RM 20 million	84	60.4
	Over RM 20 million	19	13.7
Listing	Public listed	28	20.1
	Non-listed	111	79.9
Company age	Less than 5 years	6	4.3
	5–10 years	61	43.9
	11–20 years	43	30.9
	More than 20 years	29	20.9

**Table 3** Normality analysis

		CMAP			Innovation	OP	
		DSS	BSC	TQM		Financial	Non-financial
N	Valid	139	139	139	139	139	139
	Missing	0	0	0	0	0	0
Skewness		0.195	-0.662	-0.612	-0.802	-0.189	-0.841
Std. error of skewness		0.206	0.206	0.206	0.206	0.206	0.206
Kurtosis		0.336	0.378	-0.523	0.335	-0.663	0.803
Std. error of kurtosis		0.408	0.408	0.408	0.408	0.408	0.408

**Table 4** Reliabilities and validities

Variable		Cronbach's alpha	Composite reliability	AVE
CMAP	BSC	0.900	0.926	0.716
	DSS	0.909	0.929	0.687
	TQM	0.910	0.927	0.615
Innovation		0.890	0.924	0.753
OP	Non-financial performance	0.894	0.927	0.761
	Financial performance	0.843	0.896	0.684

For the discriminant validity, it is achieved if the square root of AVE is greater than the cross loading of the variables. Table 5, for the square root of AVE is shown in bold and is greater than the cross load (rows and columns).

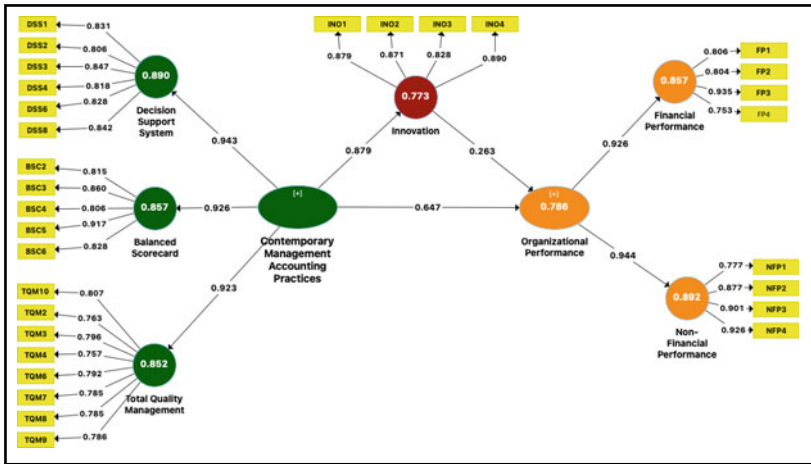
For the second order, the assessment of the measurement model is given in Table 6. This shows that the loading of the secondary sub-variable (primary) is greater than 0.70. in addition to, the reliabilities and validities are achieved. Overall, the measurement model after removing the items with low factor loading is given in Fig. 2.

**Table 5** Discriminant validity

Variables	BSC	DSS	FP	Innovation	NFP	TQM
BSC	<b>0.846</b>					
DSS	0.662	<b>0.829</b>				
Financial Performance (FP)	0.440	0.612	<b>0.827</b>			
Innovation	0.551	0.513	0.521	<b>0.867</b>		
Non-Financial Performance (NFP)	0.576	0.399	0.450	0.526	<b>0.872</b>	
TQM	0.457	0.484	0.537	0.497	0.400	<b>0.784</b>

**Table 6** Assessment of the measurement model

	Cronbach's alpha	Composite reliability	AVE			
CMAP	0.959	0.962	0.574	<b>0.758</b>		
INO	0.890	0.924	0.753	0.379	<b>0.867</b>	
OP	0.915	0.932	0.632	0.478	0.331	<b>0.795</b>



**Fig. 2** Measurement model

### 4.3 Structural Model

The path coefficient of the models is presented in Fig. 3. In this study, there is two models. The first model is testing the effect of the sub-variable (first order) on the organizational performance. The second shows the structural model of the components of CMAP.

Structural model evaluation includes R-square, Q-square, F-square and path coefficients. In the case of R-square, you can see that the innovation R-square in Fig. 2 is 0.773. This shows that 77% of innovative fluctuations can be explained by CMAP. In addition, Fig. 3 shows that the R-square of organizational performance is 0.788 indicating that 78.8% of the variation in organizational performance of Malaysian service companies can be explained by innovation and CMAP. For the Q-square, the predictive relevance of the variables was greater than zero. Predictive relevance of innovation is 0.576 and the predictive relevance of organizational performance is 0.489 indicating that the independent variable can predict the dependent variable. For the constructs or second order variables, Fig. 4 shows the results of the structural model.

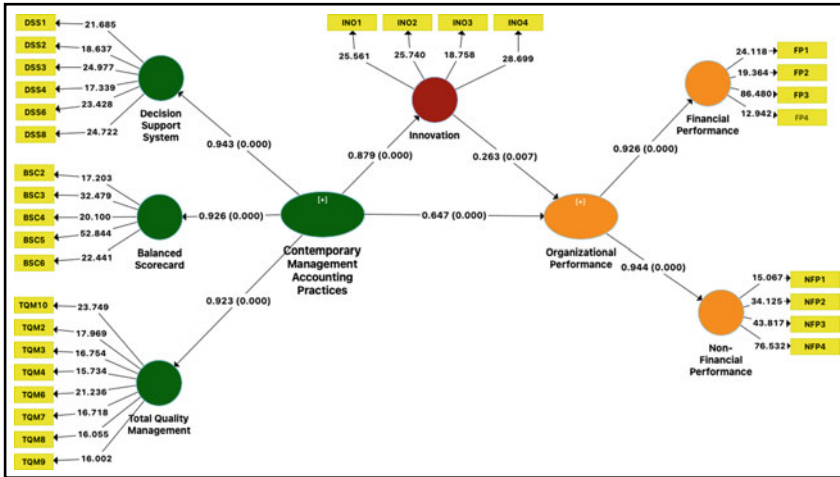


Fig. 3 Structural model of constructs (second order)

Table 7 Result of hypotheses testing

H	Path	B	Std	T-value	P-value	F-square	R <sup>2</sup>	Result
H1	CMAP→OP	0.647	0.099	6.521	0.000	0.44	0.788	Supported
H1a	DSS→OP	0.207	0.102	2.031	0.023	0.04		Supported
H1b	TQM→OP	0.433	0.126	3.428	0.000	0.30		Supported
H1c	BSC→OP	0.308	0.090	3.408	0.000	0.10		Supported
H2	CMAP→INO	0.879	0.029	30.542	0.000	0.93	0.773	Supported
H3	INO→OP	0.263	0.106	2.476	0.007	0.07		Supported

It can be seen in Table 7 that all the effect size (f-square) is greater than 0.02 which indicates that the effect size is acceptable. Table 7 shows the hypotheses (H), path, path coefficient (B), standard deviation (Std.), T-value (T), and F-square.

## 5 Discussion of Findings

This study was conducted to examine the effect of CMAP and innovation on OP. In particular, the objectives of this study were stated as follows: To examine the effect of CMAP (DSS, TQM, BSC) on innovation and OP of service companies in Malaysia, and the effect of innovation on OP of service companies in Malaysia.



## **5.1 CMAP on Innovation and OP**

The results indicated that the effect of CMAP on innovation and OP is positive and significant. This indicates that the increase in the level of implementing the CMAP in the Malaysian service companies will lead to an increase in the innovation and the OP of these companies. Additionally, the components of CMAP such as DSS, BSC, and TQM have positive effect on OP.

CMAP also has a significant effect on innovation of service companies in Malaysia. The most critical component is TQM. The positive effect of CMAP on innovation could be due to the fact that service companies in Malaysia that use the DSS, BSC and TQM will be able to collect information that helps in altering the process of delivering the services and changing the process to be more effective. In line with this finding, previous studies found that the use of CMAP is critical and has positive impact on the innovation among Malaysian companies (8). In addition, the findings of (13) found that CMAP has a positive effect on innovation.

The positive effect of CMAP on OP could be due to the notion that using the CMAP is important for creating a competitive advantage as they help the Malaysian service companies to respond to market change and understand the market better in a way that can lead ultimately to improve the overall OP of the service companies in Malaysia. In line with this finding, the theory of RBV indicates that companies can deployed their resource and capabilities to create a competitive advantage which led to better organizational performance (Amit and Schoemaker 1993; Lai et al. 2010) Similarly, the result of previous studies such as (15) found that CMAP has a significant effect on OP. Similarly, (Ahmad 2017) found a positive effect between CMAP and OP of manufacturing SMEs companies in Malaysia.

## **5.2 Innovation and OP**

The findings showed that the effect of innovation on OP is positive and significant. The positive effect of innovation on OP could be due to the fact that the Malaysian service companies are using the CMAP to introduce new services and innovate new methods to deliver the services to customers. In addition, the use of innovative practices increases the quality of service and the speed of delivery leading to better OP of the Malaysian service companies. The RBV indicates that companies when they differentiate themselves from others, they can secure sustainable competitive advantage and achieve better performance (Prahalad and Hamel 1990). This result is in agreement with the findings of previous studies such as (14) and (13) who found that innovation will lead to better OP of companies. It is also in line with the findings of (37) who found also that innovation has a positive effect on OP.

Previous studies in Malaysia indicate that the usage of CMAP is used widely by Malaysian companies. However, the more sophisticated MAP are used only by large companies (Ahmad 2017). Other studies indicate that few of the companies

in Malaysia are using the CMAP (15). CMAP contributes to the innovation among companies (Ayedh and Houssein Eddine 2014). Innovation is important for companies and can along with CMAP create competitive advantage (Askarany 2016). Since the level of CMAP is moderate, this affects the capabilities of the Malaysian service companies to innovate and used innovative method of delivering the service and enhancing its quality.

## 6 Conclusion

This study was conducted to examine the effect of CMAP on innovation and OP. The study also aimed to find the effect of innovation on OP. The study deployed the RBV and existing frameworks to develop the conceptual model. The findings indicated that CMAP and its components DSS, BSC, and TQM have significant effect on OP, and CMAP also affected innovation. The findings showed that innovation has a significant effect on OP. Based on the findings, the study suggested that service companies focus on implementing CMAP and in particular the TQM, BSC, and DSS to improve the OP. The service companies also were advised to use innovative method to improve the service quality and delivery.

The study has several limitations. First, this study was conducted among service companies in Malaysia. Thus, the findings cannot be generalized neither to other industry nor service industry in other countries. Future studies can examine the usage of CMAP among either listed companies or large-scale companies in Malaysia and other emerging economies to allow for comparison of the findings. Secondly, the findings were derived based on 139 responses from the service companies. The small sample size is sufficient for the purpose of this study, but larger sample should be aimed to provide better representation of the population. Future studies can also focus on specific service industry such as banking and finance, education, hospitality, or health-care companies. The variables in this study include three CMAP namely DSS, BSC and TQM, innovation, and OP. Other variables such as knowledge management, intellectual capital, and market uncertainty can be deployed as capabilities in future studies.

## References

- Ahmad, K.: The adoption of management accounting practices in Malaysian small and medium-sized enterprises. *Asian Soc. Sci.* **10**(2), 236–249 (2014). <https://doi.org/10.5539/ass.v10n2p236>
- Ahmad, K.: The implementation of management accounting practices and its relationship with performance in small and medium enterprises. *Int. Rev. Manag. Mark.* **7**(1), 342–353 (2017)
- Alaarij, S., Abidin-Mohamed, Z., Bustamam, U.S.B.A.: Mediating role of trust on the effects of knowledge management capabilities on organizational performance. *Proc. Soc. Behav. Sci.* **235**, 729–738 (2016). <https://doi.org/10.1016/j.sbspro.2016.11.074>

- Amit, R., Schoemaker, P.J.H.: Strategic assets and organizational rent. *Strateg. Manag. J.* **14**(1), 33–46 (1993). <https://doi.org/10.1002/smj.4250140105>
- Antunes, M.G., Quirós, J.T., Justino, M.D.R.F.: The relationship between innovation and total quality management and the innovation effects on organizational performance. *Int. J. Qual. Reliab. Manag.* **34**(9), 1474–1492 (2017). <https://doi.org/10.1108/IJQRM-02-2016-0025>
- Arshad, A.M., Su, Q.: Role of total quality management in service innovations: an empirical study of Pakistans financial services firms. *J. Appl. Bus. Res. (JABR)* **31**(3), 891–910 (2015)
- Ashfaq, K., Younas, S., Usman, M., Hanif, Z.: Traditional vs. contemporary management accounting practices and its role and usage across business life cycle stages: evidence from Pakistani financial sector. *Int. J. Acad. Res. Account. Financ. Manag. Sci.* **4**(4), 104–125 (2014)
- Askarany, D.: Attributes of innovation and management accounting changes. *Contemp. Manag. Res.* **12**(4), 455–466 (2016). <https://doi.org/10.7903/cmr.1144>
- Ayedh, A.M.A., Houssein Eddine, C.O.: The impact of advance management accounting techniques on performance : the case of Malaysia. *Middle East J. Bus.* **10**(2), 3–13 (2014). <https://doi.org/10.5742/mejb.2015.92633>
- Bharadwaj, A.S.: A resource-based perspective on information technology capability and firm performance: an empirical investigation. *MIS Q.* **24**, 169–196 (2000). <https://doi.org/10.2307/3250983>
- Chenhall, R.H., Langfield-smith, K.I.M.: Innovative accounting systems management. *Aust. Account. Rev.* **9**(3), 37–46 (1999)
- Forza, C.: Survey research in operations management: a process-based perspective. *Int. J. Oper. Prod. Manag.* **22**(2), 152 (2002). <https://doi.org/10.1108/01443570210414310>
- Fraihat, A.B.M.A., Samadi, B.: Knowledge management capabilities and organizational performance of public listed companies : a conceptual framework. *Int. J. Bus. Soc. Res.* **07**(11), 9–20 (2017)
- Ghassan, G., Maelah, R., Amir, A.M., Farhan, M.F.: Total quality management and the role of management accountants on organisational performance: the service sector in Malaysia. *Asian J. Bus. Account.* **12**(2), 147–177 (2019). <https://doi.org/10.1504/IJBPIIM.2019.105669>
- Hair, J.F., Hult, T.M., Ringle, C.M., Sarstedt, M.: *A Primer on Partial Least Squares Structural Equation Modeling*, 2nd edn. Thousand Oakes (2017)
- Hannimitkulchai, K., Phornlaphatrachakorn, K., Pratoom, K.: Dynamic management accounting orientation and firm growth: Empirical evidence from food businesses in Thailand. *J. Multidisc. Soc. Sci.* **15**(April), 79–89 (2019)
- Hassan, S.A., Ghazali, R.: *Conducting Quantitative Research*. Quty Researcher, 1st edn. Bangi (2012)
- Hoque, Z.: A contingency model of the association between strategy, environmental uncertainty and performance measurement: impact on organizational performance. *Int. Bus. Rev.* **13**, 485–502 (2004)
- Hutaibat, K., Alhatabat, Z.: Management accounting practices' adoption in UK universities. *J. Further High. Educ.* 1–15 (2019). <https://doi.org/10.1080/0309877x.2019.1643457>
- James, P.: The application of innovative management accounting principles for enhancing profitability and competitiveness: an exploratory study of jamaican manufacturers. *Int. J. Bus. Soc. Res.* **2**(6), 47–60 (2012)
- Julizaerma, M.K., Sori, Z.M.: Gender diversity in the boardroom and firm performance of Malaysian public listed companies. *Proc. Soc. Behav. Sci.* **65**(ICIBSoS), 1077–1085 (2012). <https://doi.org/10.1016/j.sbspro.2012.11.374>
- Kallamu, B.S., Saat, N.A.M.: Audit committee attributes and firm performance: evidence from Malaysian finance companies. *Asian Rev. Account.* **23**(3), 206–231 (2015). <https://doi.org/10.1108/ARA-11-2013-0076>
- Kaplan, R.S., Norton, D.P.: Using the balanced scorecard as a strategic management system. *Harv. Bus. Rev.* **January-Fe**, 75–85 (1996). [https://doi.org/10.1016/S0840-4704\(10\)60668-0](https://doi.org/10.1016/S0840-4704(10)60668-0)
- Kline, R.B.: *Principles and Practice of Structural Equation Modeling*. Guilford publications (2015)

- Kozlenkova, I.V., Samaha, S.A., Palmatier, R.W.: Resource-based theory in marketing. *J. Acad. Mark. Sci.* (2014). <https://doi.org/10.1007/s11747-013-0336-7>
- Lai, J.H., Chang, S.C., Chen, S.S.: Is experience valuable in international strategic alliances? *J. Int. Manag.* **16**(3), 247–261 (2010). <https://doi.org/10.1016/j.intman.2010.06.004>
- Langfield-Smith, K., Smith, D., Andon, P., Hilton, R., Thorne, H.: *Management Accounting: Information for Creating and Managing Value*. McGraw-Hill Education, Australia (2017)
- Nath, P., Nachiappan, S., Ramanathan, R.: The impact of marketing capability, operations capability and diversification strategy on performance: a resource-based view. *Ind. Mark. Manage.* **39**(2), 317–329 (2010). <https://doi.org/10.1016/j.indmarman.2008.09.001>
- Nik Abdullah, N.H.: Assessing strategic management accounting practices in public interest companies in Malaysia. *Indon. J. Econ. Soc. Humanit.* **2**(1), 13–25 (2020). <https://doi.org/10.31258/ijesh.2.1.13-25>
- Noruzi, A., Dalfard, V.M., Azhdari, B., Nazari-Shirkouhi, S., Rezazadeh, A.: Relations between transformational leadership, organizational learning, knowledge management, organizational innovation, and organizational performance: an empirical investigation of manufacturing firms. *Int. J. Adv. Manuf. Technol.* **64**(5–8), 1073–1085 (2013). <https://doi.org/10.1007/s00170-012-4038-y>
- Nuhu, N.A., Baird, K., Appuhamilage, A.B.: The adoption and success of contemporary management accounting practices in the public sector. *Asian Rev. Account.* **25**(1), 106–126 (2017). <https://doi.org/10.1108/ARA-04-2012-0017>
- Pasch, T.: Strategy and innovation: the mediating role of management accountants and management accounting systems' use. *J. Manag. Control.* **30**(2), 213–246 (2019). <https://doi.org/10.1007/s00187-019-00283-y>
- Pollanen, R.M., Abdel-Maksoud, A.B.: The deployment of contemporary management accounting practices in Canadian firms: a contingency approach. *Int. J. Manag. Financ. Account.* **2**(2), 134–152 (2010). <https://doi.org/10.1504/IJMFA.2010.033287>
- Prahalad, C., Hamel, G.: The core competence of the corporation. *Harv. Bus. Rev.* **68**(3), 79 (1990). [https://doi.org/10.1007/3-540-30763-X\\_14](https://doi.org/10.1007/3-540-30763-X_14)
- Sekaran, U., Bougie, R.: Research methods for business. In: *Research Methods for Business*, p. 436 (2013)
- Shan, A.W., Ahmad, M.F., Nor, N.H.M.: The mediating effect of innovation between total quality management (TQM) and business performance. In: *IOP Conference Series: Materials Science and Engineering*, vol. 160, no. 1 (2016). <https://doi.org/10.1088/1757-899X/160/1/012011>
- Sherine, F., McLellan, J.D.: A system of innovative management accounting practices for Egyptian manufacturers. *J. Account. Ethics Public Policy* **17**(1), 368 (2017)
- Sleihat, N., Al-Nimer, M., Almahamid, S.: An exploratory study of the level of sophistication of management accounting practices in Jordan. *Int. Bus. Res.* **5**(9), 217 (2012)
- Song, M., Droge, C., Hanvanich, S., Calantone, R.: Marketing and technology resource complementarity: an analysis of their interaction effect in two environmental contexts. *Strateg. Manag. J.* **26**(3), 259–276 (2005). <https://doi.org/10.1002/smj.450>
- Tuanmat, T.Z., Smith, M.: Changes in management accounting practices in Malaysia. *Asian Rev. Account.* **19**(3), 221–242 (2011). <https://doi.org/10.1108/13217341111185146>
- Wernerfelt, B.: a Resource-based view of the firm. *Strateg. Manag. J.* **5**(2), 171–180 (1984). <https://doi.org/10.1002/smj.4250050207>
- Zikmund, W., Babin, B., Carr, J., Griffin, M.: *Business Research Methods*, 7th edn. Cengage Learning (2013)

# Latest Challenges of International Migration for Ukraine: Theoretical and Empirical Aspects



Fedun Igor , Kudyrko Liudmyla , Shnyrkov Oleksandr ,  
Novak Olena , Oleinikov Yuriy , and Uzba Valeriy 

**Abstract** The article identifies the problem of international labor migration in Ukraine in terms of its theoretical and empirical aspects and reveals interdisciplinary and sectoral priorities. It is determined that the actualization is caused by a number of factors of exogenous and endogenous origin. It is revealed that in the conditions of the Ukrainian economy the source and driver of external migration processes are political, economic and social factors, while the determinants of socio-economic nature remain dominant. It is substantiated that the actualization of non-economic aspects of research on external labor migration in Ukraine in recent years is due to the military conflict in the East and the purposeful policy of individual states to stimulate migration from abroad. It is determined that the institutional dimension of the issue of international labor migration should be assessed as promising given the new challenges for the world to strengthen the recession in the world economy and the problems in labor markets. The expansion of the range of problems that will be revealed in publications on the impact of the COVID-19 pandemic on international migration flows: the traditional analysis of macroeconomic effects for all participants in these processes will be supplemented by scientific research on problems that cause general civilizational and sociocultural challenges.

---

F. Igor (✉) · K. Liudmyla · S. Oleksandr · N. Olena · O. Yuriy · U. Valeriy  
Kyiv National University of Trade and Economics, Kioto str. 19, Kyiv 02156, Ukraine  
e-mail: [i.fedun@knute.edu.ua](mailto:i.fedun@knute.edu.ua)

K. Liudmyla  
e-mail: [l.kudyrko@knute.edu.ua](mailto:l.kudyrko@knute.edu.ua)

S. Oleksandr  
e-mail: [o.shnyrkov@knute.edu.ua](mailto:o.shnyrkov@knute.edu.ua)

N. Olena  
e-mail: [o.novak@knute.edu.ua](mailto:o.novak@knute.edu.ua)

O. Yuriy  
e-mail: [oleinikov@knute.edu.ua](mailto:oleinikov@knute.edu.ua)

U. Valeriy  
e-mail: [v.yuzba@knute.edu.ua](mailto:v.yuzba@knute.edu.ua)

**Keywords** International labor migration · External labor migration · Migration policy · Ukraine · COVID-19

## 1 Introduction

One of the phenomena that actively influences the development of the world economy and the economy of individual countries today is international labor migration. The scale of migration flows in the world is impressive, and the global nature of this process determines the growing interest of scientists to study its causes and consequences. It should be noted that scientific interest in the problems of labor migration exists both in Ukraine and abroad. For Ukraine, the applied dimension of external migration is obvious: for almost a decade in a row, it is the remittances of foreign workers that exceed the volume of foreign direct investment, and thus serve as a crucial source of financial support for macroeconomic stability in the country. The whole world is waiting for what transformations are expected in the migration policies of the main groups of countries that are recipients of foreign labor according to the results of COVID-19. All this indicates that the research of both domestic and foreign scientists is gaining new ground for further study and prediction.

**The aim of the article** is to identify the latest challenges of international labor migration in Ukraine in terms of its empirical and theoretical dimension based on a comparative analysis of scientific works of domestic and foreign scientists and empirical interpretation of international migration indicators at the current stage of world economy.

## 2 Literature Review

The issue of international migration, both labor and forced, caused by military or environmental factors, is the focus of both specialized international organizations, including the United Nations High Commissioner for Refugees (International migrant stock 2019), the International Organization for Migration (WORLD MIGRATION REPORT 2020) and scientists from many countries. Among Ukrainian scientists who in recent years have turned to research on various aspects of international migration, it is worth mentioning the works of such scientists as G. Rybak and O. Voronina (2018), V. Chaplinskyi (2019), K. Novosad (2020), I. Grabynsky and A. Lekh-Debera (2018), M. Kucher, G. Zaporozhets and E. Rozdobudko (2020), Semenkova (2020a) and others.

And if traditionally scientists appeal to the initial methodological issues, the current views of domestic economic thought present a combination of theoretical and empirical priorities. In particular, the task of returning their migrant workers to the domestic market, which now accounts for up to a third of all able-bodied citizens, is extremely urgent for Ukraine. Therefore, the priorities of G.I. Rybak. and

O.O. Voronina are clear, who in their article “International migration processes in Ukraine” (Rybak and Voronina 2018) look for reasons to intensify labor migration from Ukraine, understanding its displacement of the working population, which is caused primarily by economic reasons and reflects the process of redistribution of labor between national economies.

In their work, the authors note that international labor migration is a tool to regulate the distribution of population, as it reduces it in countries where labor demand is low, and, conversely, helps to meet labor demand in countries where there is such a need. We do not share such approaches, as the demand for labor is not always the main factor that migrants take into account when deciding to move to another country. Moreover, a number of Ukrainian industries and sectors have a huge shortage of staff, especially for engineers and workers.

The authors are impressed by V.R. Chaplynskyi’s approach in the article “International labor migration and its impact on the economic system of Ukraine” (Chaplynskyi 2019), in which he notes that international labor migration is a complex socio-economic process determined by various objective and subjective factors, including the natural and climatic, demographic, ethnic, social, economic ones. We agree with the author that international labor migration is a much more complex phenomenon than simply moving people from one country to another in search of work. Moreover, the decision to relocate may be based on a reason other than the desire to work abroad, and finding a job in the country of relocation will only be a consequence of the decision.

However, appealing to the work of V.R. Chaplynskyi, we note that the recognition of the two main causes of international migration—social and economic, due to the existence of two relevant functions of this process (Chaplynskyi 2019) in the realities of today’s Ukraine is not enough. Thus, the demand for the implementation of the social function, which is manifested in increasing the level of satisfaction of the needs of the population (level of education, culture, wages, professional development) by changing the place of residence, really exists and applies mostly to young people. But the tragic events of the last seven years in Ukraine caused by the military conflict in the East, put forward as a priority the problem of forced migration, including given the threats to life.

In recent years, Ukrainian science has offered a range of research that is both general-theoretical and applied. In this sense, we can fully agree with the position of K. Novosad, who holds the position that international migration belongs to the interdisciplinary objects of study, and, in particular, one of the key areas of its study is sociology (Novosad 2020). Another dimension of the study of the migration problem was proposed by M.M. Kucher, G.V. Zaporozhets and E.V. Rozdobudko. They present an economic model that confirmed the decisive influence of Ukraine’s economic development on the scale of international labor migration (Semenkova 2020a).

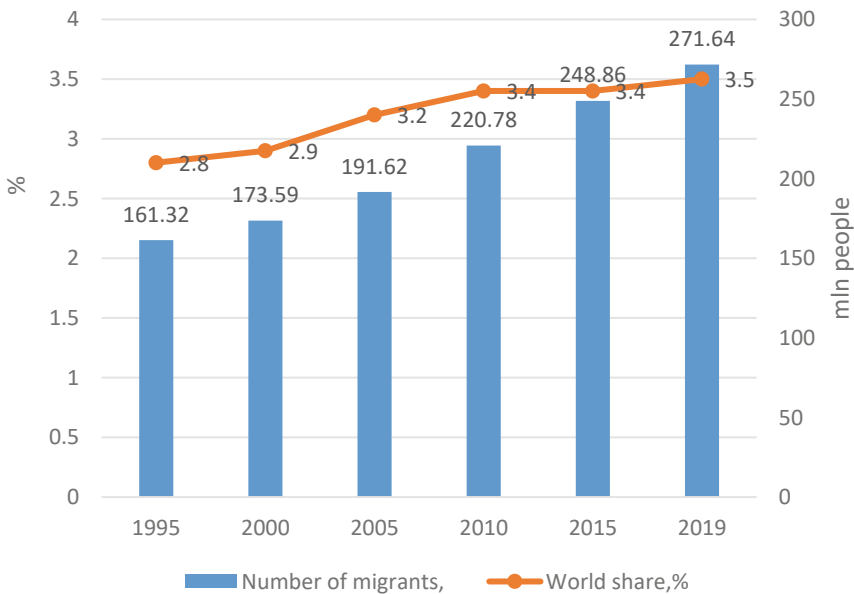
Despite numerous studies of various aspects of migration issues, the authors set the task to identify the most acute problems and challenges of the current migration problem of Ukraine, identifying both endogenous and exogenous channels of their origin.

### 3 Research Results

Examining the global trends of migration processes, first of all it should be noted that in recent years the volume of this process has increased significantly, but the share of migrants in the total population remains quite stable (Fig. 1). Thus, we can say that the aggravation of migration problems is caused not so much by the increase in the number of migrants, but rather by their “quality”, i.e. the structure of migration flows.

Statistics show that the largest number of migrants are men and women aged 20 to 54, that is, the working age population (Fig. 2). This exacerbates the problems of labor migration, because even when the motive for changing the country of residence are reasons not related to employment, the question of finding a job in a new place still arises, so the vast majority of resettlement of working age medium-term employment.

In our opinion, the most in demand attention is the economic function of migration, which is the redistribution of the working population, respectively to the needs of their skills and competencies, which, ultimately, allows to increase the efficiency of the use of labor resources, and it is the recipient countries. Therefore, we explain the significant interest of Ukrainian scholars in studying the problems of international migration by the fact that it is for Ukraine that external labor migration manifests itself in unprecedented economic losses as a donor of labor. At the same time, it should be noted that Ukraine appears in the lists of both the countries with the largest



**Fig. 1** Dynamics of the volume and share of migrants in the world in 1995–2019 (International migrant stock 2019)



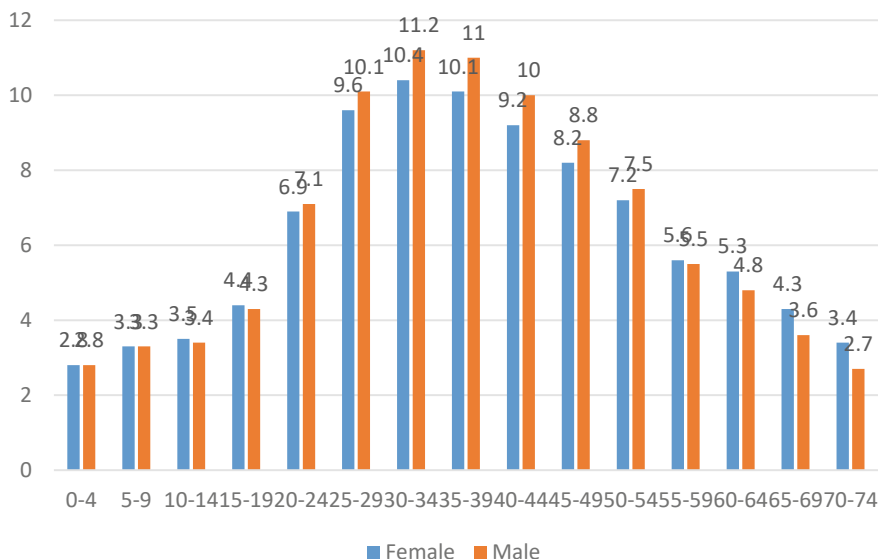


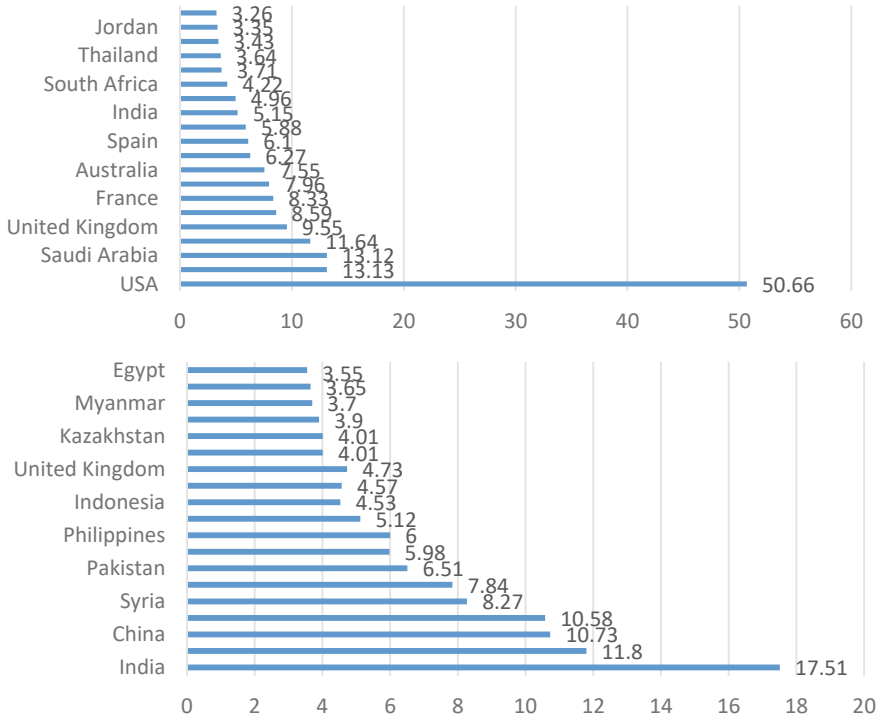
Fig. 2 Age structure of migrants in the world in 2019 (WORLD MIGRATION REPORT 2020)

number of emigrants and immigrants (Fig. 3). This paradoxical fact, in our opinion, is due to the fact that Ukraine, having a fairly high standard of living compared to the least developed countries, is institutionally less protected from immigrants compared to highly developed countries. The high level of the shadow economy creates the preconditions for their illegal employment or business development, which makes it an attractive center of migration.

In turn, the country’s population seeks to further improve the quality of life, change their place of residence, moving to neighboring countries that are members of the EU. Especially often the decision to move is made by students who have the opportunity to study abroad, and then work in the country of study and do not return home.

I. Grabynskyi and A. Lekh-Deber in the article “Evolution of the theoretical foundations of international labor migration” (Grabynskyi 2018), considering the preconditions of international labor migration, note that the main ones are the desire to increase the level of personal and economic freedom, i.e. free choice of field of activity, profession, place of work and residence; disparities in the level of economic development of countries and, accordingly, significant differences in living standards; differences in cultural, social and demographic nature. An important factor, which is also highlighted by the author, is the process of capital movement between countries, which is often accompanied by labor migration—if we talk about Ukraine, among immigrants there is a significant share of international experts and highly skilled workers who moved to Ukraine for work and international companies.

Agreeing on the importance of a retrospective excursion of migration factors, we note that this approach allows us to trace the dominance of three main groups



**Fig. 3** Leading countries in the number of immigrants and emigrants in 2019, million people (Novosad 2020)

of factors in Ukraine that determine the development of international labor migration: objective-historical; economic; institutional and political. It should be noted that these groups of factors are primarily endogenous in origin and for the world community as a whole, so it is the subject of research by both domestic scientists and global international organizations. According to research work of M.A. Semenkova, described in the article “Peculiarities of migration processes during the armed conflict in the east of Ukraine and their impact on the security environment” armed conflicts are the reason for increasing migration, choosing to move to a permanent place of residence instead of circular migration, the emergence of a new group of migrants - entrepreneurs, business owners, wealthy middle class; increasing the share of pupils and students among migrants; appearance in the composition of migrants of people with experience of participation in hostilities (Semenkova 2020a). Such features have an impact on the economies of host countries, provoking both additional positive (highly skilled wealthy migrants) and negative (migrants with weapons skills) consequences.

The fact that Ukraine is a recipient of labor for migrants from countries with even more significant problems in socio-economic development, actualizes for us the direction of research, which until recently concerned only the EU, the United States

(Bondarevska 2019). In this sense, we agree that the benefits of immigration for the host party include a number of macroeconomic effects (stimulating the production of goods produced in the country due to lower prices of foreign labor, which reduces costs; formation of additional demand for goods and services by migrants; savings on training costs (in the case of immigration of highly qualified personnel); savings on funding for social protection of migrants). At the same time, in the context of employment problems caused by the coronavirus pandemic, structural imbalances in the economy, it is necessary to prepare for the exacerbation of problems related to the negative effects of migration, namely: rising unemployment, increased risk of social tensions and conflicts in society and in the case of immigration of low-skilled labor - the deterioration of the quality of labor potential.

It should be noted that most of the studies of Ukrainian international labor migration quite rightly addressed the problems from the standpoint of labor donors. But in the case of a significant influx of illegal migrants, the impact of negative consequences for the country's economy deteriorates significantly, and in this sense, this section of research is only relevant (Kruk 2020). As a result, it should be noted that the consequences of international labor migration may be ambiguous for Ukraine in the coming years, and the prevalence of certain effects largely depends on the composition of migration flows.

In the scientific works of Ukrainian researchers today much attention is also paid to migration policy as a tool to influence international labor migration. In particular, M.A. Semenкова in the work "Approaches to the detection of external management of international migration processes" notes that the state's migration policy can be a convenient and attractive means of achieving foreign policy goals. According to the author, with proper training, the state has the ability to manage migration flows, and to do so both at the stage of their formation and direction, and during the stay of migrants in the host country (Semenkova 2020b). In our view, such a statement contains rational elements, but, in our view, only individual countries are currently able to manage immigration flows, and such influence is also not global.

Yu.V. Tchaikovskiy also focuses his research on migration policy as a tool to reduce the negative effects of migration on countries. In our opinion, the attention of states to the problems of labor migration in view of current trends should really increase. However, given the multifaceted nature of this process, to form a module for managing migration flows that would best meet the interests of all participants will be extremely difficult (Tchaikovskiy 2019).

It should be noted that the interest in migration policy is also noticeable on the part of foreign scholars. Also interesting in this aspect is the work "International Migration: Trends, Determinants, and Policy Effects" (International Migration: Trends, Determinants, and Policy Effects), which was published in the publication "Population and development review" in December 2019 (de Haas et al. 2019). In their study, a team of authors led by Hein de Haas emphasizes that the effects of international migration are largely determined by the policy chosen by a country, because the impact of human capital flows on the economy depends on what goals it wants to achieve in the social sphere.

The authors' view is also quite interesting given their distinction between the concepts of "effect" and "effectiveness" of migration policy: with the first term they denote the actual impact of migration on the country's economy, and the second enlightens the compliance of this impact with the country's goals. This approach, in our opinion, is suitable for use, as it creates the preconditions for identifying the strengths and weaknesses of public policy in the field of migration and, consequently, its improvement.

Currently, another important global factor that has influenced and will continue to influence international migration is the COVID-19 pandemic. Preliminary estimates are not exhaustive, as it is impossible to accurately quantify the impact of this phenomenon on international migration, as statistics on migration in 2020 are not available. As a result, the migration policy of all countries of the world is currently aimed at restricting the entry of representatives of other countries into their territory. In addition, in the context of the economic crisis typical of most markets, employment opportunities for migrants are currently limited.

In such circumstances, a significant amount of research on migration is currently being assessed to assess the impact of the pandemic on this process. Quite interesting is Joseph Chami's article "International Migration amid a World in Crisis" (Chamie 2020), which examines the trends of international migration processes before the pandemic and their change after the spread of the coronavirus.

The author concludes that in a pandemic, international migration is an additional challenge for most countries, both those that are the main destinations for migrants and those that leave the largest populations. For the first countries, the main threat is that the risks of uncontrolled spread of the virus increase, which requires additional costs. In addition, a significant proportion of those who come to the country for temporary employment do not have health insurance, while the state cannot not treat such patients, given that such behavior poses additional threats to a healthy part of the population.

If we talk about countries that are donors of migrants, the additional costs for them are associated with the return from abroad of those residents who want to return home, their testing, etc.

In any case, all countries of the world, including Ukraine, are facing new challenges due to the fact that in the coming years there will be a transformation of migration policy of all countries, which will take place both in the context of strengthening security requirements and changing the overall economic landscape.

## 4 Conclusions

The problem of international labor migration from the standpoint of theoretical intelligence in Ukraine can be identified as interdisciplinary and multisectoral. Its actualization is due to a number of factors of exogenous and endogenous origin. Despite the common approaches that in the conditions of the Ukrainian economy the source and driver of external migration processes are political, economic and social factors,

the dominant thesis is the priority of the determinants of socio-economic nature. The actualization of non-economic aspects of external labor migration in Ukraine in recent years is due to the military conflict in the East and the purposeful policy of individual states to stimulate migration from abroad. The institutional dimension of international labor migration should be assessed as promising given the new challenges for countries around the world to strengthen the recession in the world economy and problems in the labor market. It is worth predicting an increase in the number of publications on the impact of the COVID-19 pandemic on international migration processes, and it is not only about macroeconomic effects for all participants in these processes, but also about general civilizational, socio-cultural and other challenges.

## References

- Bondarevska, K.V.: International labor migration: state, problems, prospects. *Bus. Inform.* **10**, 44–49 (2019). [http://nbuv.gov.ua/UJRN/binf\\_2019\\_10\\_7](http://nbuv.gov.ua/UJRN/binf_2019_10_7)
- Chamie, J.: International migration amid a world in crisis. *J. Migrat. Hum. Secur.* **8**(3), 230–245 (2020). <https://journals.sagepub.com/doi/10.1177/2331502420948796>
- Chaplynskyi, V.R.: International labor migration and its impact on the economic system of Ukraine. *Bull. Kamianets-Podilskyi Natl. Ivan Ohiienko Univ. Econ. Sci.* (14), 394–398 (2019). [http://nbuv.gov.ua/UJRN/vkpnuen\\_2019\\_14\\_60](http://nbuv.gov.ua/UJRN/vkpnuen_2019_14_60)
- Grabynskyi, I., Lekh-Debera, A.: Evolution of theoretical principles of international labor migration. *Visnyk of Lviv National University. Series: International Relations* (45), 357–366 (2018). [http://nbuv.gov.ua/UJRN/VLNU\\_Mv\\_2018\\_45\\_36](http://nbuv.gov.ua/UJRN/VLNU_Mv_2018_45_36)
- de Haas, H., Czaika, M., Flahaux, M.L., Mahendra, E., Natter, K., Vezzoli, S., Villares-Varel, M.: International migration: trends, determinants, and policy effects. *Populat. Dev. Rev.* **45**(4) (2019). <https://onlinelibrary.wiley.com/doi/full/10.1111/padr.12291>
- International migrant stock 2019. United Nations International migration statistics. <https://www.un.org/en/development/desa/population/migration/data/estimates2/estimates19.asp>
- Kalyuzhna, N., Khodzhaian, A. Baron I.: Identification of globalization threats to the economic sovereignty of countries with transition economies. *Naukovyi Visnyk Natsionalnoho Hirnychoho Universytetu* (1), 154–164 (2021). <https://doi.org/10.33271/nvngu/2021-1/154>
- Kruk, O.V.: International labor migration and its challenges for Ukraine. *Theory and practice of public administration and local self-government*, vol. 1 (2020). [http://nbuv.gov.ua/UJRN/Ttpdu\\_2020\\_1\\_18](http://nbuv.gov.ua/UJRN/Ttpdu_2020_1_18)
- Kucher, M.M., Zaporozhets, G.V., Rozdobudko, E.V.: Statistical analysis of labor international migration. *Bus. Navig.* (2), 130–134 (2020). [http://nbuv.gov.ua/UJRN/bnav\\_2020\\_2\\_26](http://nbuv.gov.ua/UJRN/bnav_2020_2_26)
- Melnyk, T., Mazaraki, N., Pugachevska, K.: Development of national economies in the conditions of pandemics. *Baltic J. Econ. Stud.* **7**(1), 69–76 (2021). <https://doi.org/10.30525/2256-0742/2021-7-1-69-76>
- Novosad, K.: Modern models of international migration research. *Grani* **23**(5), 15–27 (2020). [http://nbuv.gov.ua/UJRN/Grani\\_2020\\_23\\_5\\_4](http://nbuv.gov.ua/UJRN/Grani_2020_23_5_4)
- Rybak G.I., Voronina, O.O.: International migration processes in Ukraine. *Effective economy*, p. 6 (2018). [http://nbuv.gov.ua/UJRN/efek\\_2018\\_6\\_47](http://nbuv.gov.ua/UJRN/efek_2018_6_47)
- Semenkova, M.A.: Features of migration processes during the armed conflict in eastern Ukraine and their impact on the security environment. *Epistemol. Studi. Philos. Soc. Polit. Sci.* **3**(1), 233–240 (2020a). [http://nbuv.gov.ua/UJRN/epstphsps\\_2020\\_3\\_1\\_27](http://nbuv.gov.ua/UJRN/epstphsps_2020_3_1_27)
- Semenkova, M.: Approaches to the detection of external management of international migration processes. *Hist. Polit. Probl. Mod. World* **41**, 185–193 (2020b). [http://nbuv.gov.ua/UJRN/Ippss\\_2020\\_41\\_20](http://nbuv.gov.ua/UJRN/Ippss_2020_41_20)

- Tchaikovskiy, Yu.V.: Determinants of development of migration policies of states in modern international legal conditions. *Bull. Southern Regional Cent. Natl. Acad. Legal Sci. Ukr.* **18**, 207–213 (2019). [http://nbuv.gov.ua/UJRN/vprc\\_2019\\_18\\_29](http://nbuv.gov.ua/UJRN/vprc_2019_18_29)
- Teston, S.D.F., Zawadzki, P., Lizote, S.A., Gupta, S.K., Reznik, N.: Valores organizacionais percebidos por sucessores de propriedades rurais em sistema cooperativista: coletivistas ou individualistas? *Contextus—Rev. Contemp. De Econ. Gestão* **18**, 251–263 (2020). <https://doi.org/10.19094/contextus.2020.44354>
- Tkalenko, S., Melnyk, T., Kudyрко, L.: Macroeconomic factors influencing the development of Ukraine's foreign trade. *Baltic J. Econ. Stud.* **6**(3), 143–155 (2020). <https://doi.org/10.30525/2256-0742/2020-6-3-143-155>
- WORLD MIGRATION REPORT 2020. [https://publications.iom.int/system/files/pdf/wmr\\_2020.pdf](https://publications.iom.int/system/files/pdf/wmr_2020.pdf)

# Optimization of Bank Lending in the Context of Modern Realities and Prospects of Financial Market Development



Nadiia Reznik , Galina Palchevich , Tatiana Melnyk ,  
Valerii Podprietnii , and Volodymyr Shalimov 

**Abstract** Optimization of credit activity is the key to stable development, expansion of the customer base, and growth of profits of banking institutions. Therefore, the priority of ensuring the financial stability of a modern bank should be the formation and effective implementation of credit policy. The purpose of the article is to study the features of banking lending and substantiate scientific and practical recommendations for its improvement, taking into account modern realities and prospects for financial market development.

We set a task to determine the main directions of bank lending optimization. For this purpose, the analysis of modern tendencies of credit activity of banks is carried out, problems in the sphere of formation and realization of their credit policy are revealed. Suggestions for strengthening the efficiency of the bank with bad debts are provided. Methodological approaches to the formation of a mechanism for managing problem loans of the bank with the justification of management methods and criteria for their selection, which can be used in the management of credit risks of the bank. The methods of improving the efficiency of the bank's loan portfolio management substantiated in the article have value for improving its quality and increasing the profitability of credit operations. The proposed fundamental aspects of the formation of the bank's credit strategy with the identification of its main objectives, priorities, factors, and sequence of specific actions are appropriate for use by banks in building an effective credit policy and increase the profitability of credit operations.

---

N. Reznik

National University of Life and Environmental Sciences of Ukraine, Kyiv, Ukraine

e-mail: [nadya-reznik@ukr.net](mailto:nadya-reznik@ukr.net)

G. Palchevich (✉) · T. Melnyk · V. Podprietnii · V. Shalimov

Department of Finance, Banking and Insurance, Central Ukrainian National Technical University, Kropyvnytskyi, Ukraine

T. Melnyk

e-mail: [semenovichta@ukr.net](mailto:semenovichta@ukr.net)

V. Podprietnii

e-mail: [podpletniyv@ukr.net](mailto:podpletniyv@ukr.net)

V. Shalimov

e-mail: [v.shalimov@ukr.net](mailto:v.shalimov@ukr.net)

**Keywords** Credit activity of the bank · Credit policy · Credit products · Credit operation · Problem loans · Credit risk · Credit portfolio · Credit strategy · Financial stability of the bank

## 1 Introduction

Successful development of the banking system today is impossible without the active lending activities of banks and strengthening their competitiveness in the financial market. The key to the bank's profitable operation is the use of the latest credit products, flexible response to customer requests, and the creation of an effective credit risk management system. This requires the formation of an effective credit policy and the definition of methods for its successful implementation. The relevance of the chosen direction of research is enhanced by the fact that the intensification of lending to the real economy is a powerful means of expanding production, increasing fixed capital, building new large and technically well-equipped enterprises, modernizing the economy on an innovative basis.

At the same time, the development of Ukraine's economy and its financial and credit sector takes place in conditions of political and economic instability, which significantly limits the financial resources available in the country and complicates the work of banking institutions. Insufficient lending to the economy worsens the prospects for the development of production, trade, demand and consumption. Therefore, when formulating the credit policy of banks it is necessary to take into account the action of all favorable and unfavorable factors and use all opportunities to ensure the efficiency of the credit process and stable development.

This article contains a study of methods and tools of banking lending, the peculiarities of the formation and implementation of credit policy of a modern bank in the conditions of transformational transformations in the economy and social sphere. The use of our problem management mechanism in the bank's lending activities will serve to reduce credit risk and increase the level of profitability of credit operations. Identified and substantiated fundamental aspects of the formation of the bank's credit strategy are valuable for the bank to take into account when developing a development strategy, outlining ways to implement it effectively.

The following issues are consistently covered in our work:

- the essence of bank lending and credit policy of the bank is specified;
- the state of bank lending to non-financial corporations and households is considered, the systemic reasons for its restraint are determined;
- the directions of modernization of the main functions of the credit policy of a modern bank are outlined;
- ways to optimize the bank's credit policy are highlighted;
- the methods of increasing the efficiency of the bank's loan portfolio management are substantiated;
- strategies and methods of problem debt management are defined
- the algorithm of actions of bank on return of problem credits is offered;



- the sequence of stages of formation of credit strategy of bank is reflected.

## 2 Literature Review

The scientific works of many scientists are devoted to the study of credit activity of the bank, in particular: N. Avanesova (2015), N. Antipova (2010), O. Bykova (2017), T. Bolgar (2013, 2014), V. Vovk (2008), O. Gasiy (2020), I. Gutsal (The effectiveness of the credit mechanism in the economy of Ukraine), O. Dzyublyuk (2009), G. Zabchuk (2018), I. Karbivnychy (2011), V. Kremen (2020), M. Krupky (2016), L. Kuznetsova (2018), O. Lysenko (2016), O. Lyubar (2010), A. Mankuta (2017), L. Maryniuk (2015), G. Mykhailyak (2018), I. Osadchy (2011), I. Pasynovych (2019), O. Rybak (2020), O. Rusina (2014), M. Savluka (2011), V. Solyar (2019), A. Sokolova (2019) and others. The researchers focused on defining the content, principles, and functions of credit, its role in economic development, finding the causes of credit risk and methods of minimizing it, defining mechanisms for managing the bank's loan portfolio.

According to M. Savluk, lending means the granting and repayment of loans, i.e. involves long-term interaction between lender and borrower (Savluk 2011). A. Sokolova argues that bank lending can be defined as a financial service provided in the financial services market in the process of economic relations that arise in the presence of intermediaries-creditors (banking institutions) who have temporarily free funds to meet the existing need for credit financial services; borrowers (the state, business entities, individuals) who are able to timely and fully fulfill obligations under the provided credit service for a fee in the form of interest rates, and the state regulator of the credit market (National Bank of Ukraine), as well as legislative institutional, informational, resource and other types of support (Sokolova 2019).

We hold the view that bank lending can be defined as a specific financial service of a banking institution that is provided in the range of active operations of the bank and provides the bank with a certain level of income.

Bank lending involves the implementation of appropriate lending operations. The current regulations of the National Bank of Ukraine (NBU) define the essence of a credit transaction as a type of active banking operation related to the placement of borrowed funds by the bank by providing them for temporary use or commitments to provide funds for temporary use under certain conditions, and also the provision of guarantees, sureties, letters of credit, acceptances, avals, placement of deposits, factoring operations, financial leasing, issuance of loans in the form of promissory notes, in the form of repo transactions, any extension of debt repaid in exchange for obligations the debtor to repay the amount owed, as well as the obligation to pay interest and other fees from such amount (deferred payment) (Pro poriadok formuvannia ta vykorystannia bankamy Ukrainy rezerviv dlia vidshkoduvannia mozhyvykh vtrat za aktyvnymy bankivskymy operatsiyamy 2012). O. Lysenok notes that strategic management of credit operations is an activity of developing credit strategies of a banking institution, forming goals, objectives and choosing methods of achieving

them. The basis of such strategic management is the analysis of factors influencing credit operations, strategic planning, mechanisms for linking strategic and tactical decisions, monitoring the implementation of the strategy, and the possibility of timely adjustment (Lysenok 2016).

Bank loans are an important source of financing for all areas of economic activity. Therefore, we fully agree with the statement of G. Zabchuk, according to which the accumulation of necessary investments in the real sector of the economy involves the intensification of lending activities of commercial banks. At the same time, the state should take the most active part in resolving this issue, which, using regulatory tools, provides incentives for bank lending in order to develop the real sector of the economy (Zabchuk 2018). O. Gasiy and V. Klymenko hold a similar view, arguing that the development of credit banking is an important component of stabilizing the national economy, that the state should promote the partial formation of a competitive lending market, stimulate the creation of banking institutions sufficient to invest capital and ensure its safety, to reduce risk in lending and investment activities (Ghasij and Klymenko 2020).

Bank lending plays an important role in ensuring and maintaining economic growth and sustainable development, as banks provide loans to the real sector of the economy, and stimulate the processes of increasing production, expanding employment, creating new jobs, implementing investment and innovation projects. The key to effective lending in the current unstable conditions of economic development is a proper sound and balanced credit policy of the bank. It is the basis for the successful operation of the bank, as it determines the conditions, principles, rules of lending, provides measures for the implementation of the lending process, and the implementation of appropriate control.

The study of the essence of the bank's credit policy is based on a review of the understanding of this concept by scientists and experts in the field of economics, finance and banking. G. Mykhailiak represents credit policy in the narrow and broad sense and believes that in the narrow sense, credit policy is a system of bank measures during customer lending, which are carried out by the bank to implement its strategy and tactics in the region over time. In a broader sense, credit policy as the basis of the credit management process determines the priorities in the development of credit relations and the functioning of the credit mechanism (Mykhajljak and Mykhajljak 2018).

A similar approach in the interpretation that credit policy is a set of measures and actions of the bank, we see in research O. Lyubar, which determines that credit policy in the narrow sense—a system of measures of the bank in lending to its customers by the bank to implement its strategy and tactics in the region over a period of time. Credit policy as the basis of the credit management process determines the priorities in the development of credit relations, on the one hand, and the functioning of the credit mechanism - on the other (Ljubar 2010). According to I. Gutsal, credit policy is an integral part of the general policy of the bank aimed at achieving its strategic goals: compliance with financial stability, reliability, liquidity, and solvency (Ghucal: The effectiveness of the credit mechanism in the economy of Ukraine).

We believe that the definition of the essence of credit policy by these scientists, despite all their value, does not fully take into account the specifics of credit policy and its role in the organization of credit activities of the bank. In this perspective, we are impressed by the definition of L. Maryniuk, who emphasizes that the bank's credit policy considers and explains a number of key tasks and objectives of the modern banking segment, identifies clear methods, methods, and techniques for making credit operations as profitable as possible., establishes an acceptable level of banking risks in the field of lending (Marynjuk 2015).

We can agree with the statement of I. Karbivnychy, who interprets the bank's credit policy as a set of basic principles and criteria for making management decisions in the field of credit activities of the bank in order to realize its credit potential and effective impact on the economy at various levels (Karbivnychyj 2011). O. Bykova has a similar opinion, noting that credit policy determines the organization of credit activities of the banking structure, becomes the basis for the entire lending process, determines its parameters and features (Bykova and Marchenko 2017). We believe that the statements of these researchers regarding the role of credit policy in the organization of the lending process and the realization of the bank's credit potential are quite fair and consistent with the purpose of credit policy.

Many scholars see the main purpose of credit policy in the formation of an effective credit risk management system. A. Mankuta and S. Lysenko adheres to the view that the bank's credit policy is a tool of the bank's credit management system, the ultimate goal of which is to prevent risks in achieving its strategic goals. Therefore, researchers argue that the essence of the bank's credit policy is to ensure security, reliability, and profitability of credit operations, ie the ability to minimize credit risk (Manjkuta and Lysenko 2017). O. Dzyublyuk interprets credit policy as a set of measures and actions to form the composition of the loan portfolio and control over it as a whole, as well as the establishment of standards for specific decisions (Dzjubljuk 2009).

Among the definitions of credit policy are those that relate it to a combination of strategy and tactics of credit activities of the bank. In particular, according to V. Vovk, credit policy determines the main directions of the credit process, priorities, principles, and goals of a bank in the credit market—the strategy of credit activities of the bank, and involves the use of specific financial and other instruments used in the implementation of credit agreements—tactics of the bank on the organization of the lending process (Vovk and Khmelenko 2008).

It is worth noting the definition of credit policy that takes into account the human factor. We find such a definition in the scientific works of N. Avanesova, who notes that credit policy creates the necessary general prerequisites for the effective work of bank staff, reduces the likelihood of errors in decision-making (Avanesova and Voznikova 2015). In our opinion, the approach to defining the essence of N. Antipova's credit policy is original loan rates (Antipova 2010).

Based on the analysis of different approaches to determining the essence of the bank's credit policy, we can conclude that there is no common perception of its economic nature. Each of the researchers highlights some aspects of this complex and multifaceted concept. That is, today the issues of defining the essence of the concept of "credit policy", modern mechanisms of its formation and implementation

remain insufficiently researched. The system of problem debt management of banks, development of credit strategy taking into account existing and potential challenges and threats requires further scientific and methodological developments. Theoretical and practical need to improve the lending activities of banks and increase the efficiency of formation and implementation of credit policy determines the relevance of this area of research, its purpose, and objectives.

### **3 Purpose of the Study**

The purpose of the article is to study the features of banking lending and substantiate scientific and practical recommendations for its improvement, taking into account modern realities and prospects for financial market development.

### **4 Methodologie**

The theoretical and methodological basis of our study are the scientific provisions of modern economic theory and finance, the work of domestic and foreign scientists on the basics of banking. Both general scientific and specific methods were used to solve the research tasks set in the work, in particular:

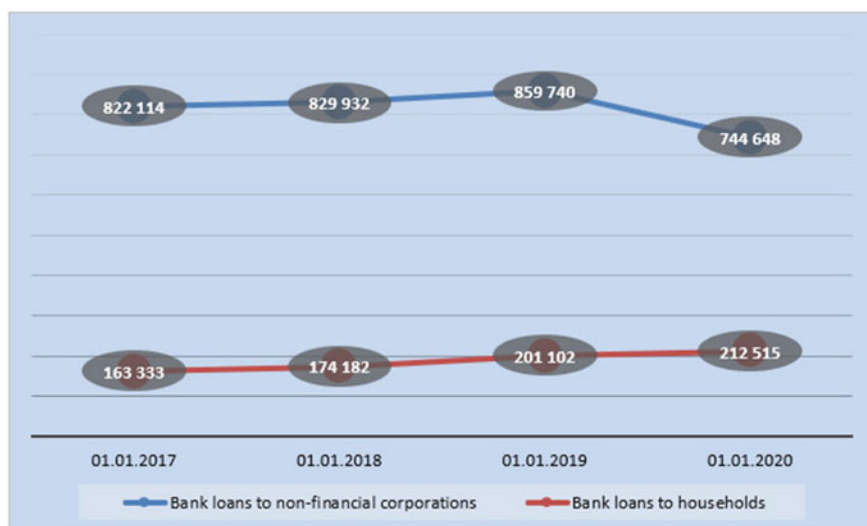
- for research of theoretical bases of bank credit activity—logical method, methods of generalization and abstraction;
- for analysis and assessments of credit activity of banks—methods of grouping, statistical comparison, index method, graphical method;
- for substantiation of directions of improvement of formation and realization of credit policy of bank—methods of induction, deduction, extrapolation, and forecasting.

### **5 Findings and discussion**

During 2019–2020, the banking system of Ukraine showed a reduction in corporate lending, and only a slight increase in retail lending (Fig. 1).

Among the systemic reasons for curbing bank lending in Ukraine should be noted:

- a significant exacerbation of the problem of insufficient reliability of borrowers with objective macroeconomic circumstances (the presence of a significant number of unprofitable enterprises, the complexity of doing business in the conditions of quarantine restrictions, decrease in demand for products of exporters, etc.), and with traditionally unsatisfactory payment discipline of subjects of managing and the population;



**Fig. 1** Loans to non-financial corporations and households (million UAH\*). *Source* Compiled by the authors on the basis of (Prioritytety aktyvizatsii bankivskoho kredyтування v Ukraini 2021). \* UAH - Ukrainian hryvnia

- high level of interest rates due to the tight monetary policy of the NBU;
- over-regulation of lending processes, in particular;
- slower dynamics of economic development,
- high share of bad credit debt, which increases the risk of non-repayment of loans. from the formation and implementation of its credit policy.

We associate the bank's credit policy with the development of goals, objectives, principles, functions, strategic priorities of the bank's lending activities and the implementation of tactical actions aimed at improving the quantitative and qualitative characteristics of the loan portfolio and minimizing credit risk.

O. Rusina and M. Kovtun emphasize that the purpose of credit policy development is to ensure control over risks (indirect currency, interest rate, operational risks and liquidity risk) in the process of the most effective placement of credit resources to obtain the maximum possible income from credit operations while maintaining the optimal ratio between profitability and the level of credit risk in the conditions of active promotion of the bank in the priority sectors of the economy and regions of the bank's presence (Rusina and Kovtun 2014).

The objectives of credit policy are as follows:

Maximization of income from credit operations within the established risks and in accordance with applicable law;

- approval of loans for economically productive purposes in the market zone of the bank;
- creating reliable and profitable regular customers;

- training and advanced training of credit employees;
- creation and maintenance of loans and deposits corresponding to the capital, potential and deposit base of the bank, as well as the composition of non-credit assets;
- adaptation to changes in both legislation and the country's economy (Ljubar 2010).

According to N. Maryniuk, the bank's credit policy has a functional purpose. As an integral part of banking policy, it performs general and specific functions. General functions are the basis of banks' credit policy. The general functions include: supervisory function, which aims to assess credit risk and minimize it; stimulating function, which is manifested in meeting the needs of the state and bank customers in credit resources; commercial function, which is defined in the target orientation of the bank to make a profit. Specific functions of credit policy can be classified as the following: optimization of bank credit products and loan portfolio of the bank, ensuring the combination of interests of different creditors and borrowers and forming a system of goals for managing the bank's credit activities (Marynjuk 2015).

It is worth noting that credit policy is quite heterogeneous, distinguishing certain types of credit policy. O.Lyubar points out the expediency of dividing credit policy on the following grounds (Ljubar 2010):

- by lending entities—lending to legal entities and individuals;
- by type of market—money market, financial market, capital market;
- by geography of application—credit policy pursued by the bank: at local, regional, national and international levels;
- by industry—credit policy for lending: industrial enterprises (heavy, light, food industry),
- trade organizations, construction companies, transport companies, agricultural enterprises, sales organizations, enterprises language, etc.;
- collateral—for the provision of secured loans, for the provision of unsecured loans,
- at the price of the loan—credit policy for the provision of: standard loans, soft loans, problem loans (at increased interest rates).

Credit and the policy provides regulations that must be followed by all participants in the credit process. This applies to: general provisions on bank auditing; the procedure for decision-making by the credit committee; the procedure for drawing up a loan agreement; the order of work of the banking institution with borrowers; procedures for ensuring the repayment of loans. The credit policy of a modern banking institution should be based on the following main objectives:

- quality servicing of the loan portfolio;
- ensuring the maximum profitability of the bank with a minimum level of risk;
- ensuring the proper distribution and use of bank credit resources; equity and other liabilities of the bank;
- compliance with the optimal ratio between deposits, loans, equity and other liabilities of the bank,
- providing high quality lending services to expand the bank's clientele;

- achieving a high level of customer confidence in the bank’s activities by meeting their needs.

In view of this, there is a question of modernization of the main functions of credit policy of a modern bank. We believe that they should be formulated as follows:

- optimization of the staff of credit departments of the bank by reducing staff turnover, improving skills and loyalty, enhancing intellectual potential, the introduction of programs “lifelong learning—career growth” in including in the field of new technologies, functional delimitation of work with different groups of creditors;
- improving the quality policy of customer service (borrowers) of the bank by introducing appropriate standards and regulations, including codes of ethics, formation of a system of motivation for their implementation, transparent contractual relations;
- strengthening the level of credit security through the use of flexible tools for credit risk management, expanding the number of selection criteria for projects that require lending, setting standards for the ratio of loan and deposit portfolios, liabilities of the bank and its assets, financial stability, business activity, adequacy of cash flows of customers, the planned level of interest income, the amount of risk;
- formation of a system of flexible loan portfolios and their conditions, their application in accordance with the structure of the bank’s clients, the results of the analysis of their creditworthiness, reliability, loyalty to the bank;
- increase the level of information security and security of the service through the use of appropriate software for reliable protection of information, its collection, storage, use;
- reorientation of credit policy to the basic principles of customer-oriented marketing approach in the provision of services, which will ensure the formation of rational, stable relationships with customers, increase their loyalty to banks.

In Fig. 2 shows ways to optimize the credit policy of the banking institution.



**Fig. 2** The main ways to optimize the bank’s credit policy. *Source* developed by the authors

The digitalization of the economy challenges banks to respond quickly to consumer expectations by automating relevant processes: immediate response to retail or corporate credit, quick online account opening, online account management, etc.

Bank relations are essential today with insurance companies, consider them necessary partners in the field of lending. Both for insurance companies and for the bank, this relationship is very important, because insurance companies have high growth potential, and for the bank lending is the main and most profitable type of active operations.

With clients, studying current and identifying their future needs. The bank's credit managers must constantly study the specifics of clients' business and initiate the renewal of their capital base. The bank's credit products offered by the bank should take into account the needs of customers, help them to create conditions for a successful business, solve production and personal problems. The solution of these issues will be facilitated by the joint efforts of the state, the banking system, and the subjects of the real sphere of the economy and the implementation of such measures as the formation of the infrastructure of the banking business; improving banking regulation and supervision; significant updating and changing of the legislative and regulatory framework; improving the sphere of public finances (taxation, public expenditures, guarantee funds, etc.).

Given the realities of today, the state should legislate the consolidation of preferences for banks that actively lend to investment projects in the real sector of the economy, by reducing liquidity ratios and contributions to reserve funds; changes in the order of payments; introduction of tax benefits; introduction of individual standards of supervision. To reduce the risk of innovative projects due to insufficient ability of banks to manage these risks, it is necessary to form an appropriate credit market infrastructure, which includes:

- structures capable of professionally checking potential clients (credit bureaus);
- institutes of financial expertise of economic projects;
- a single system of information support for credit investment activities.

In this regard, when lending to investment projects, it seems appropriate to move from assessing the financial condition of the borrower, based on the analysis of its financial statements, to assessing the integrated indicator of its investment creditworthiness, ie the ability to repay loans as a result of successful project implementation. due to the introduction of innovations (Reznik et al. 2019). We believe that this indicator should take into account both the financial statements of the initiators of investment projects and the economic parameters of these projects.

In order to increase the attractiveness of their credit products in the real sector of the economy, domestic banks need to perform the following tasks of credit policy:

- ensuring the maximum level of profitability of credit instruments;
- ensuring balanced and optimal financing by the bank of the development of the real sector of the economy;



- ensuring the financial stability of a commercial bank in the process of lending to businesses;
- achieving compliance between the volume and quality of the loan portfolio;
- provision of high quality credit services;
- timely tracking of credit risks and neutralization of possible losses;
- maintaining a high level of trust of business entities and individuals in a commercial bank, providing services in compliance with all deadlines.

To improve the efficiency of loan portfolio management today it seems necessary:  
*to maintain and strengthen liquidity:*

- to improve the work of the bank with mortgaged property, which provides for updating according to the need of a periodic inspection of mortgaged property in order to respond in a timely manner to changes in its availability, condition and value;
- to carry out personal inspections of the property by employees of the relevant service of the bank with the obligatory drawing up of an inspection report;
- conduct a mandatory periodic revaluation of the value of property in accordance with the internal regulations of the bank to verify the adequacy of the value of collateral to cover the amount of debt;
- check the availability of a valid insurance policy or insurance contract of the borrower's property, as well as the needs of the borrower;

*to reduce the level of credit risk:*

- adhere to a sound approach to determining the significant increase in credit risk,
- determining the materiality of increasing credit risk based on the credit rating developed by the bank for the loan; very carefully check the quantitative indicators of the borrower's financial statements and qualitative indicators;

*to increase profitability:*

- focus on the long-term allocation of resources, as it provides most of the profits while maintaining the existing prudent credit policy;

*to ensure effective management:*

- create more flexible conditions for credit products, which would allow credit experts to optimally allocate resources among existing borrowers, maximizing the benefits for both the bank and the borrower;

*to improve the structure of the loan portfolio:*

- constantly update approaches to diversifying the allocation of resources in accordance with current indicators of economic sectors, regions, and activities;

*to determine the average rates of the portfolio:*

- monitor changes in rates on similar credit products in the banking market and respond accordingly by changing their own parameters. The focus of the bank's credit policy on improving the quality of the loan portfolio involves the use of methods to influence the reduction of problem loans. Solving this problem is extremely important, because in today's conditions of weak economic development, the negative impact of the pandemic, the problems of doing business are exacerbated, real incomes of the population are significantly reduced, the level of solvency of bank customers is reduced. This causes an increase in bad debts of borrowers. The level of problem debts of banks primarily depends on the activities of the bank, on the professionalism of credit management. We offer the following mechanism for managing problem loans of the bank (Fig. 3).

The operation of this mechanism is aimed at improving the quality of the loan portfolio, reducing the level of credit risks and on this basis—ensuring the stable operation and financial stability of the bank.

To manage bad debts, the bank can choose three strategies: management strategy;

The essence of the management strategy is that the bank continues to hold distressed assets on the balance sheet and seeks a solution to the problem (this may be restructuring or debt collection in court). The sales strategy involves the sale of problem loans to a third party. In this case, the contract may provide for the right to further service the portfolio by the seller. The write-off strategy is that the bank writes off troubled assets from the balance sheet and terminates debt collection measures. The methods provided by the strategies described above have their advantages and disadvantages. The bank must take a very prudent approach to the choice of methods, taking into account the criteria and conditions of the internal and external environment.

Intrabank methods of problem loan management are divided into methods of rehabilitation and liquidation. According to the method of rehabilitation, a joint action plan with the borrower to repay the debt is developed and implemented. In this regard, the restructuring of problem loans is common. I. Osadchy believes that the expediency of the restructuring requires the following condition: the cash flow generated by the current business of the borrower, after the restructuring should exceed the cash flow from liquidation (Osadchyj 2011). If it is impossible to rehabilitate the debt, the bank may use the liquidation method, according to which the loan is repaid through the sale of collateral or by declaring the debtor bankrupt and selling its assets.

The main external methods of managing problem loans are: securitization of assets; sale of problem debts to unrelated financial companies in the form of factoring operations; transfer of bad debts to a third party (collection company); sale of distressed assets.

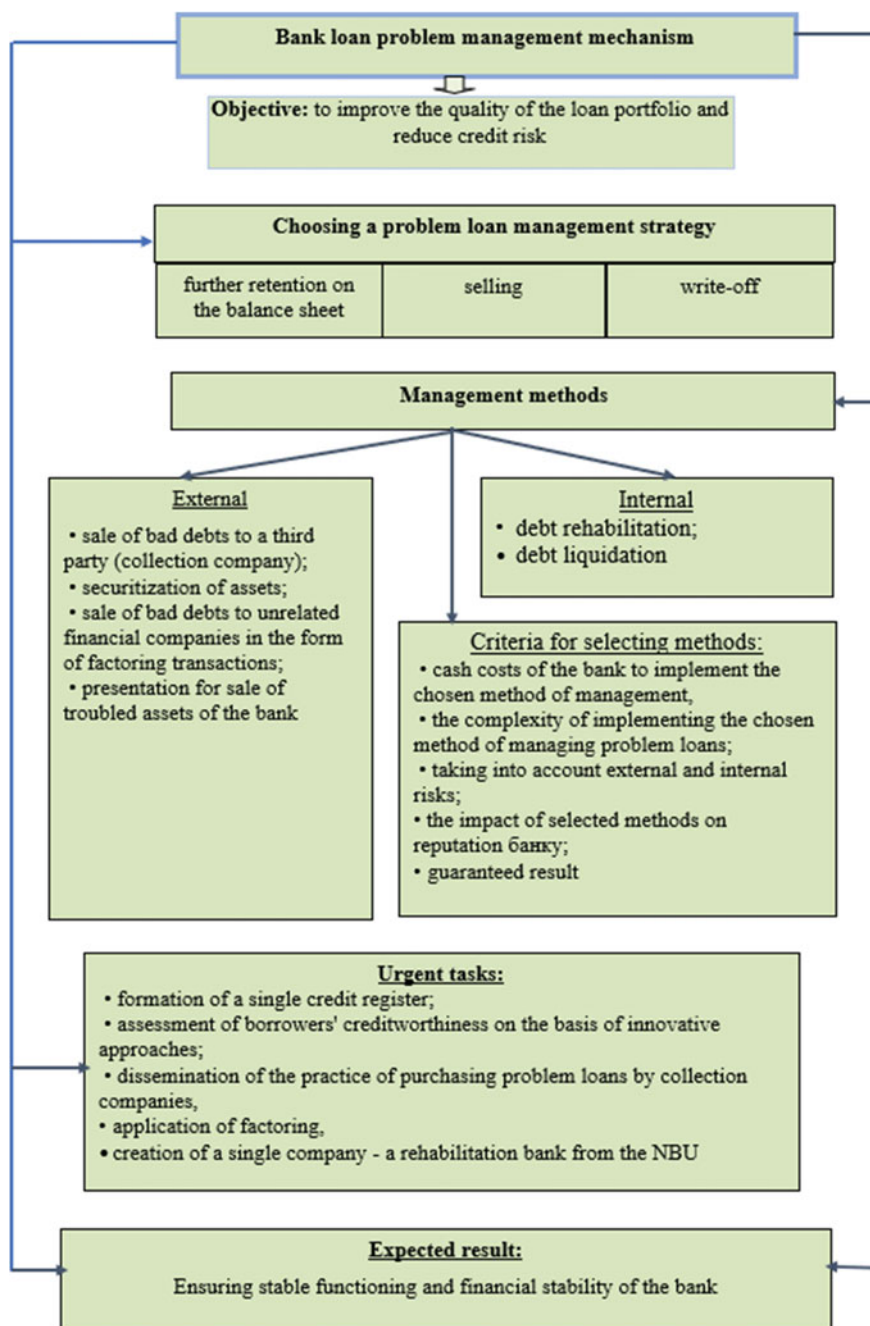


Fig. 3 Bank problem loan management mechanism. Source developed by the authors

Restructuring is a fairly effective method of reducing the level of bad debts. According to T. Bolgar, restructuring of problem loans is a set of legislation and regulatory measures of the bank, aimed at settling credit debts and adapted to the current solvency of the debtor (Ghucal: The effectiveness of the credit mechanism in the economy of Ukraine).

Among other methods of working with problem loans, restructuring is characterized by the following advantages:

- reducing the amount of payment on the loan for the period required to restore the financial condition of the debtor;
- deferral and distribution of debt for a certain period, if it is not possible to repay overdue payments;
- no debt collection costs (work with collectors, factoring companies, court costs);
- maintaining a positive credit history of the borrower and the customer base of the bank.

The basic principles of the bank's work with problem debts should be:

- 1) transformation of work on collection of problem credit debt into a separate, independent activity;
- 2) when working with problem loans to follow the interests of all parties.

When working with problem loans, one should not focus only on the interests of the bank, it is necessary to prevent conflicts with debtors. Compromise should be the main factor in deciding on the procedure, content and methods of debt repayment.

Based on this and for the purpose of more professional work of banks with problem credit debts, it is proposed to create banks' own collection enterprises. Not one, but several banks could take part in the establishment of such enterprises. By working with bank debt, such companies could simultaneously provide services to other entities, thereby enhancing their professional skills and minimizing the cost of their maintenance.

Figure 4 shows the algorithm of the bank's actions to repay problem loans.

Measures such as:

- strengthening the legal regulation of protection of creditors 'and borrowers' rights in debt restructuring;
- expanding the participation of the state, banks, factoring and collection companies and individuals in the market will help improve the bank's management mechanism. bad debts;
- the fullest possible use of all methods and means for financial restructuring of credit debt according to the standard procedure, if borrowers can confirm that the debt is related to operating activities or lack of liquidity;
- improving the mechanisms of out-of-court restructuring of problem credit debt through the use of world best practices;
- increasing the level of capitalization of banks;
- improving corporate governance in banks;

- introduction of mechanisms for conversion of problem loans into the right to demand capital of the borrower, etc.

The creation of a specialized structural unit of the bank is an important method of reducing bad credit debt. The main functions of this unit should be:

- problem-oriented monitoring of debt on credit operations of the regional network of the bank;
- ensuring repayment of bad debts in the bankruptcy procedure of debtors (borrowers and their guarantors) of the bank;
- ensuring the repayment of bad debts on credit transactions through the sale of collateral;
- out-of-court settlement of problem debts on credit operations, including legal support and methodological support;
- judicial representation in cases of compulsory debt collection.

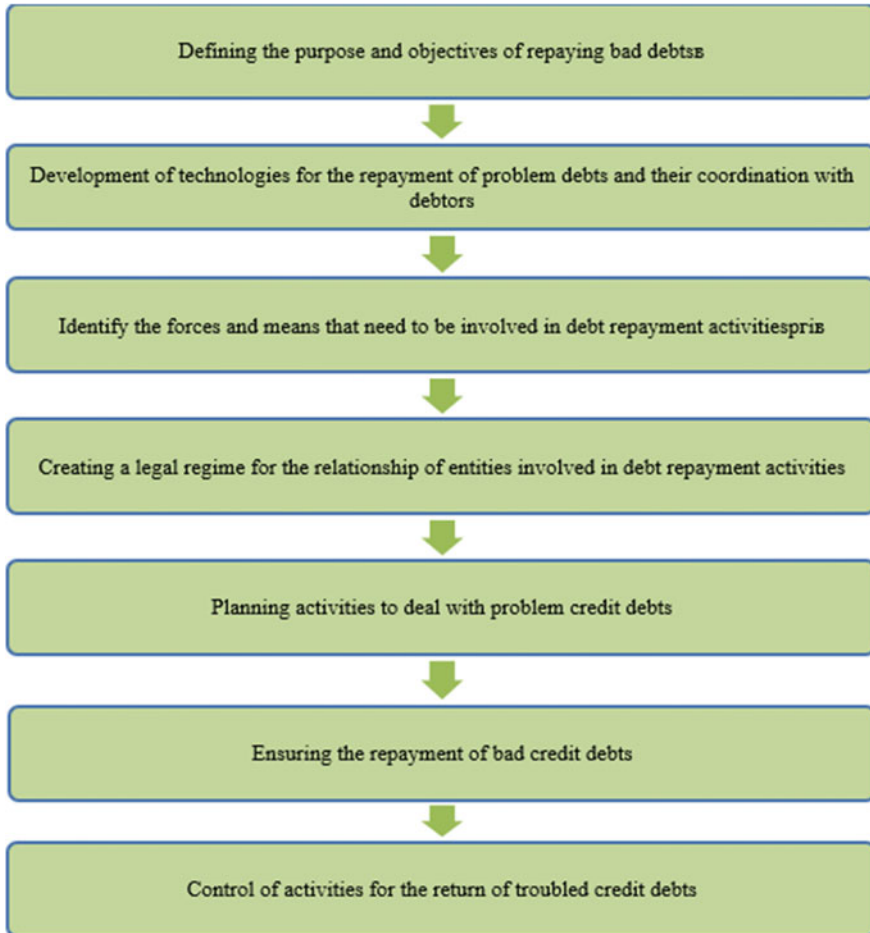
Specialists of this department must constantly monitor the bank's lending activities, identify problem loans in a timely manner, make decisions on repayment of problem or bad loans, transfer loans from problem to reliable. Thanks to the work of the special unit, the process of resolving the situation with problem loans will become more transparent, clear and manageable.

National Bank of Ukraine, National Commission on Securities and Stock Market, National Commission for State Regulation of Financial Services Markets, Ministry of Finance of Ukraine and the Deposit Guarantee Fund of individuals on 16.01.2020 signed and began to implement the Strategy for the development of the financial sector of Ukraine until 2025. This strategy is a step-by-step plan to create a full-fledged fintech ecosystem in Ukraine with innovative financial services and affordable digital services. There are five strategic areas: financial stability, macroeconomic development, financial inclusion, financial market development, innovation development. Further development of the digital economy is expected. From October 2020, the National Bank of Ukraine has a permit to open a bank account with a digital passport. That is, it is possible for citizens to open a bank account remotely without physically presenting a biometric passport or ID card. It is enough to have a digital passport or a foreign digital passport in the mobile application "Action".

The credit strategy for the development of domestic banks is developed on the basis of the principles of introduction of digital technologies and intensification of innovative development of the financial sphere. The formation of the bank's credit strategy must take into account the strategic goals of its development: profit maximization; ensuring the bank's liquidity; risk minimization; achieving a stable competitive advantage in the market of banking services; promoting the improvement of economic development and welfare of the population.

The credit strategy of the bank includes requirements for:

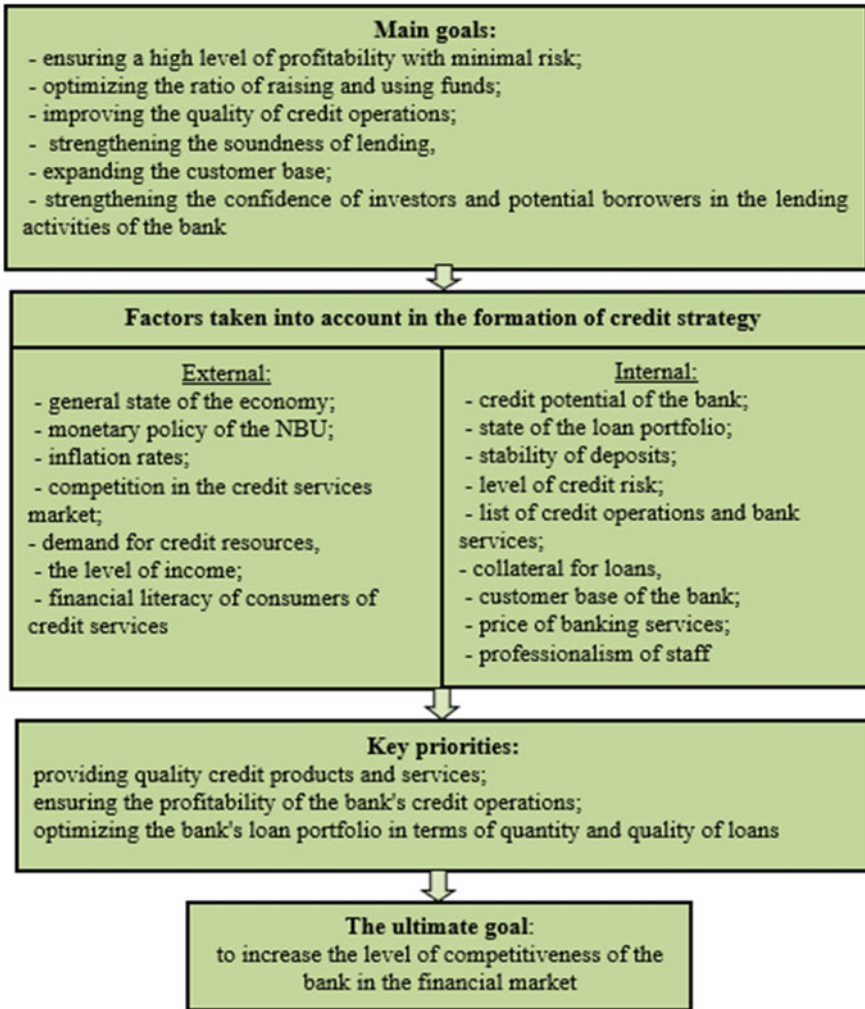
- ensuring effective lending, which provides a flexible response to changes in the external and internal environment,
- concentration of efforts and resources of the bank to achieve its goals;



**Fig. 4** Algorithm of the bank's actions to repay problem loans. *Source* developed by the authors

- compliance with the compatibility of the credit strategy with other development strategies of the bank;
- the use of alternatives in choosing the most effective lending solutions;
- ensuring a sufficient level of motivation of credit managers, achieving compliance of their interests and values with the functions performed in the strategic management of credit activities,
- the use of innovative credit products and services to strengthen the competitive position of the bank.

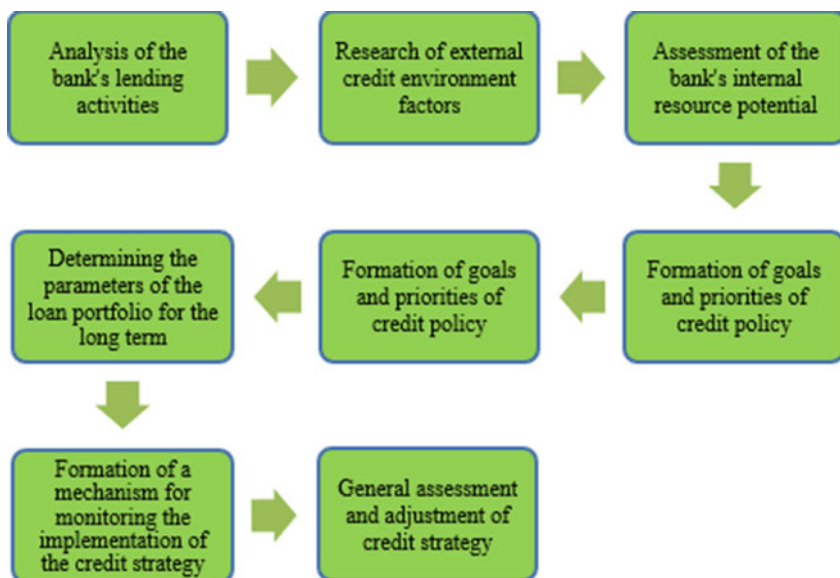
The basic aspects of the formation of the bank's credit strategy are shown in Fig. 5.



**Fig. 5** Fundamental aspects of the formation of the bank's credit strategy. *Source* developed by the authors

The development of the bank's credit strategy helps to determine long-term goals and priorities for future development of the bank. The credit strategy envisages opportunities to make the best use of the bank's credit potential in the future, development of new lending areas, selection of effective and realistic projects for lending, as well as tools for its implementation. The formation of the bank's credit strategy is gradual.

Of course, such a division into separate stages is conditional, as some actions at one stage may not be completed yet, and at the next stage they are already beginning. However, it is necessary to structure the stages of the credit policy formation process (Fig. 6).



**Fig. 6** Stages of formation of the bank's credit strategy. *Source* developed by the authors

The first stage analyzes the bank's lending activities, the volume and structure of the loan portfolio by loan types and types, the share of problem debt and its causes.

The second stage analyzes the impact of external factors on the bank's lending activities. This includes factors such as the general state of the economy, monetary policy of the NBU, inflation, competition in the credit services market, demand for credit resources, income level, financial literacy of consumers of credit services.

In the third stage assessment of the bank's resource potential, namely: the bank's credit potential; loan portfolio status; stability of deposits; level of credit risk; list of credit operations and bank services; loan security; customer base of the bank; price of banking services; professionalism of the staff.

At the fourth stage, the goals of the credit strategy are formulated, which ultimately should ensure the achievement of the strategic goals of the bank as a whole. The main objectives of the credit strategy are: to ensure a high level of profitability with minimal risk; optimization of the ratio of raising and using funds; improving the quality of credit operations; strengthening the validity of loans; expanding the customer base; strengthening the confidence of investors and potential borrowers in the bank's lending activities.

The fifth stage is the choice of the type of lending strategy of the bank. The main criterion for this choice is the level of acceptable credit risk of the bank. The following are considered in detail: the main methods of credit risk management; credit limits for counterparties and for the portfolio as a whole; ratio of profitability and credit risk; expected characteristics of the loan portfolio, including the marginal level of



credit risk concentration; internal capital adequacy ratios required for provisions to cover losses due to credit risk, etc.

The sixth stage determines the main parameters of the loan portfolio for the long term, taking into account the acceptable level of credit risk.

The seventh stage is the development of a system of control over the implementation of the credit strategy in order to achieve the goals and timely response to any negative deviations.

The eighth stage is a general assessment and, if necessary, adjust the credit strategy.

A bank's credit strategy is considered effective if it meets the following criteria: consistency of the bank's credit strategy with the overall strategy of its development; taking into account forecast changes in the external economic environment; compliance of the bank's credit strategy with the capabilities of its internal resource potential; acceptability of the level of risks associated with the implementation of the credit strategy; economic efficiency of credit strategy implementation.

## 6 Conclusion

Thus, in the current conditions of financial market development, banks are forced to constantly improve their lending activities, offer new banking products and services, demonstrate their reliability, stability and ability to respond quickly to changes in market conditions. The key to effective lending activities of banks is an adequate credit policy, which defines the conditions, principles, rules of lending, provides measures for the implementation of the lending process and the implementation of appropriate control.

Directions for optimizing the credit policy of a modern bank are: improving the structure of the loan portfolio and improving the quality of its service; raising the level of qualification and professionalism of credit management, its ability to respond flexibly to the state of the credit market, to introduce innovative credit products and services; regular analysis of the state of credit relations with each client-borrower; use of effective credit risk assessment and stress testing systems, continuous monitoring and control of credit debt; implementation of a customer-oriented approach, balancing the interests of all participants in the credit process; improvement of credit technologies in accordance with the requirements and opportunities of digitalization of the economy and financial and credit sphere.

The result of the study is a proposed mechanism for managing problem loans of the bank, the operation of which is aimed at improving the quality of the loan portfolio, reducing credit risks and on this basis—ensuring the stable operation and financial stability of the bank. The mechanism has a specific purpose, provides for urgent tasks, expected results and methods of managing bad debts. The following criteria for choosing methods are identified: the bank's cash costs for the implementation of the chosen method of management; the complexity of implementing the chosen method of problem loan management; taking into account external and internal risks; the impact of selected methods on the bank's reputation; guaranteed result. It was

emphasized that the improvement of the bank's management mechanism will be facilitated by such measures as: strengthening the legislative regulation of protection of the rights of creditors and borrowers in debt restructuring; expanding the participation of the state, banks, factoring and collection companies and individuals in the problem debt market; increasing the level of capitalization of banks; improving corporate governance in banks.

It is proved that the success of the bank's lending activity depends on the formation and effective implementation of the lending strategy. The credit strategy envisages opportunities to make the best use of the bank's credit potential in the future, development of new lending areas, selection of effective and realistic projects for lending, as well as tools for its implementation. The main priorities of the bank's credit strategy are related to the provision of quality credit products and services, ensuring the profitability of credit operations, optimizing the bank's loan portfolio in terms of the number and quality of loans.

## References

- Antipova, N.A.: Vdoskonalennja efektyvnosti kredytnoji polityky banku jak odniji z predumov konkurentospromozhnosti ekonomiky [Improving the efficiency of the bank's credit policy as one of the prerequisites for the competitiveness of the economy]. *Bull. Natl. Tech. Univ. "KhPI": Collect. Sci. Works* **8**, 17–22 (2010). [in Ukrainian]
- Avanesova, N.E., Voznikova, Ju.M.: Kredytna polityka bankivsjkykh ustanov: strategichni aspekty ta ryzyky [Credit policy of banking institutions: strategic aspects and risks]. *Ghlobaljni Ta Nacionaljni Probl. Ekon.* **8**, 956–961 (2015). [in Ukrainian]
- Bolghar, T.M.: *Problem Loans in Banking in the Financial Crisis*. Publishing House PE Shcherbatiykh OV, Kremenchuk (2013). [in Ukrainian]
- Bolghar, T.M.: Problemi kredyty bankiv jak rezuljtat realizaciji kredytnogho ryzyku [Problem loans of banks as a result of credit risk]. *Econ. Nobel Herald* **1**, 50–58 (2014). [in Ukrainian]
- Bykova, O.V., Marchenko, O.V.: Ocinka efektyvnosti kredytnoji polityky banku [Evaluation of the effectiveness of the bank's credit policy]. *Young Sci.* **43**, 586–589 (2017). [in Ukrainian]
- Dzjubljuk, O.V.: *Banking operations*. TNEU "Economic Thought" Publishing House, Ternopil (2009). [in Ukrainian]
- Ghasij, O.V., Klymenko, V.I.: Stan ta perspektyvni vektory rozvytku bankivsjkoi kredytnoji dijaljnosti v Ukraini [Status and perspective vectors of development of banking credit activity in Ukrainian]. *Efficient Econ.* **1** (2020). [in Ukrainian]. [http://www.economy.nayka.com.ua/pdf/1\\_2020/63.pdf](http://www.economy.nayka.com.ua/pdf/1_2020/63.pdf). Accessed 10 Aug 2021
- Karbinnychyj, I.V.: *The mechanism of formation and implementation of the bank's credit policy* (Ph.D. thesis). State Higher Educational Institution Ukrainian Academy of Banking of the National Bank of Ukraine, Sumy (2011). [in Ukrainian]
- Kremenj, V.M., Kremenj, O.I., Ghuljajeva, L.P.: Rolj bankivsjkogho kredyтуvannja u rozvytku ekonomiky Ukrainy [The role of bank lending in the development of Ukraine's economy]. *Probl. Ekon.* **3**, 176–183 (2020). [in Ukrainian]
- Krupka, M.I., Baran, O.B.: Ekonomichna sutnistj problemnogho kredytu u bankivsjkij dijaljnosti [The economic essence of problem credit in banking]. *Sci. Bull. NLTU Ukr.* **26**(2), 209–217 (2016) [in Ukrainian]
- Kuznjecova, L.V.: *Bank lending to the corporate sector of the economy in a cyclical environment*. Disa Plus, Kharkiv (2018). [in Ukrainian]

- Ljubar, O.O.: Kredytna polityka bankiv: vydy ta modeli [Credit policy of banks: types and models]. *Bull. Univ. Bank. Natl. Bank Ukr.* **3**(9), 183–185 (2010). [in Ukrainian]
- Lysenok, O.V.: Formuvannja strateghiji ta polityky upravlinnja kredytnymy operacijamy bankiv [Formation of strategy and policy of credit operations management of banks]. *Bull. Zhytomyr State Technol. Univ. Ser.: Econ. Sci.* **1**, 185–190 (2016). [in Ukrainian]
- Manjkuta, A.I., Lysenko, S.V.: Teoretychni ta praktychni aspekty orghanizaciji kredytnoji polityky v banku [Theoretical and practical aspects of the organization of credit policy in the bank]. *Mod. Econ.* **5**, 67–72 (2017). [in Ukrainian]
- Marynjuk, L.V.: Formuvannja ta osoblyvosti kredytnoji polityky banku [Formation and features of the bank's credit policy]. *Econ. Manag. Bus.* **1**, 153–159 (2015). [in Ukrainian]
- Mykhajljak, Gh.V., Mykhajljak, I.V.: Kredytna polityka bankiv ta shljakhy jiji optymizaciji [Credit policy of banks and ways to optimize it]. *Black Sea Econ. Stud.* **27**(2), 103–106 (2018). [in Ukrainian].
- Osadchyj, I.: Shljakhy vdoskonalennja roboty z problemnymy aktyvamy bankiv Ukrajinj [Ways to improve work with problem assets of Ukrainian banks]. *Bull. Ukr. Acad. Bank.* **1**, 39–44 (2011). [in Ukrainian]
- Pasinovych, I.I., Dmytruk, V.O.: Kredytuvannja realjnogho sektoru ekonomiky rehionu: stan, problemy, perspektyvy [Lending to the real sector of the region's economy: state, problems, prospects]. *Soc.-Econ. Probl. Mod. Period Ukr.* **3**, 42–49 (2019). [in Ukrainian]
- Priorytety aktyvizatsii bankivskoho kredytuvannja v Ukraini. [Priorities of activation of bank lending in Ukraine]. [in Ukrainian]. <https://niss.gov.ua/doslidzhennya/ekonomika/prioriteti-aktivizacii-bankivskogo-kredytuvannja-v-ukraini-0>. Accessed 10 Aug 2021
- Pro poriadok formuvannja ta vykorystannja bankamy Ukrainy rezerviv dlja vidshkoduvannja mozhylyvykh vtrat za aktyvnymy bankivskymy operatsijamy: Polozhennia vid 25.01.2012 №. 23 [Regulations on the procedure for the formation and use of reserves by banks of Ukraine to reimburse possible losses on active banking operations №. 23, 25 January 2012. <https://zakon.rada.gov.ua/laws/show/z0231-12#Text>. Accessed 10 Aug 2021. [in Ukrainian]
- Reznik, N.P., Demyan, Y.Y., Tokar, Y.I., Gupta, S.K., Ostapchuk, A.D.: Mechanism of investment maintenance for the sustainable development of the agricultural sphere. *Int. J. Innov. Technol. Explor. Eng.* **8**, 112–116 (2019). <https://www.scopus.com/inward/record.url?eid=2-s2.0.085073495954&partnerID=MN8TOARS>
- Rusina, Ju.O., Kovtun, M.V.: Mekhanizm formuvannja ta realizaciji kredytnoji polityky banku [The mechanism of formation and implementation of the bank's credit policy]. *Econ. Manag. Innov.* **1**(11) (2014). [in Ukrainian]
- Rybak, O.M., Pusjkov, D.O.: Restrukturyzacija problemnykh kredytiv bankiv v umovakh kryzovykh javyssh [Restructuring of problem loans of banks in the conditions of crisis phenomena]. *Innov. Econ.* **4**, 65–70 (2020). [in Ukrainian]
- Savluk, M.I.: Money and credit. KNEU, Kyiv (2011). [in Ukrainian]
- Sokolova, A.M.: Bankivskie kredytuvannja v Ukrajinj: suchasnyj stan ta tendenciji rozvytku [Bank lending in Ukraine: current status and development trends]. *Sci. Bull. Poltava Univ. Econ. Trade* **4**(95), 67–74 (2019). [in Ukrainian]
- Soljar, V.V.: Credit in the Conditions of Modernization of Banks' Activity. Ivanchenko Publishing House IS, Kharkiv (2019). [in Ukrainian]
- Vovk, V.Ja., Khmelenko, O.V.: Lending and control. Knowledge, Kyiv (2008). [in Ukrainian]
- Zabchuk, Gh.M.: Aktyvizacija bankivskogho kredytuvannja realjnogho sektoru ekonomiky jak peredumova vidnovlennja ekonomichnogho zrostantnja [Activation of bank lending to the real sector of the economy as a prerequisite for the resumption of economic growth]. *Econ. Anal.* **28**(1), 172–177 (2018). [in Ukrainian]

# Management Accounting Information Usefulness, Digital Inclusion and Performance of SMEs



Haslina Hassan and Ruhanita Maelah

**Abstract** The aspects of life and industry and also model and principles of business has changed significantly parallel with the phenomena of rapid growth in today's digital age. In addition, the Information and Communications Technology (ICT) will give significant affects to digital economy. Therefore, in the case of fully utilizing the technology, conventional business systems is highly recommending to replace by ICT which is believed as the best platform that could lead the firm to be more competitive in the current market. On the other hand, one of the factor to ensure the effectiveness and efficiency of the business is management accounting information (MAI). MAI is a primary information source for planning, decision-making and control which is crucial for business in achieving competitive advantage. The main focus of this study is to investigate the relationship between MAI and performance moderated by digital inclusion among SMEs in Malaysia. Resource Based View (RBV) has been used as the underpinning theory, which expect that digital inclusion moderates the relationship between MAI and performance. The data was collected by survey method using questionnaires and distributed to SMEs in Malaysia. Based on the samples of 338 respondents the study employs Structured Equation Model (SEM) using SmartPLS 3 software to analyze the data. The results reveal that MAI (include broad scope, timeliness and integration) has a positive direct effect on performance. However, there is no evidence that digital inclusion moderating the relationship between MAI and performance. The finding of this study suggest that SMEs in Malaysia should include all information needed in their management accounting system., quickly and effectively disseminate the information to the relevant parties and integrate the information between departments in order to improve the performance of the organization.

**Keywords** Management accounting information · Digital inclusion · SME performance · Resource based view

---

H. Hassan (✉)

Business School, Universiti Kuala Lumpur, Kuala Lumpur, Malaysia

e-mail: [haslina.hassan@unikl.edu.my](mailto:haslina.hassan@unikl.edu.my)

R. Maelah

Faculty of Economics and Management, Universiti Kebangsaan Malaysia, Bangi, Selangor, Malaysia

## 1 Introduction

Small and medium-sized enterprises (SMEs) are young and constantly changing their field of activities in work environments that are characterised by technological complexity, hyper-competition and change (Christauskas and Miseviciene 2012). SMEs are different to large-sized companies in term of challenges faced by SME which lack of access to finance, human resources, limited or inability to adopt technology, and a lack of information (Ting 2004). For this reason, SMEs are recognised as being inherently different from their large firm counterparts, not least from a resource constraint perspective. Even though SMEs are unlikely to fully utilize management accounting practices because of limited resources and relatively small size, management accounting information (MAI) is still an important system to be used to ensure the efficiency and effectiveness of the business (Ahmad 2013). Moreover, Al Lami et al. (2019) found that every dimension of the MAI are considered as useful for SMEs in decision-making process. Ahmad (2012) indicates that MAI (and its absence) is associated with success (and failure) in SMEs.

MAI is a primary information source for decision-making, planning and control (Ahmad 2012; Dewi 2020). In addition, Hui and Yusof (2010) revealed that MAI is not only important in helping managers for decision-making but also for communication in the organization and performance evaluation. Moreover, Al Lami et al. (2019) also reported the significance of MAI in managerial work, and the important of MAI to select the relevant information of the current business environment. This could help the company to growth and to be more competitive in the market. In view of this, MAI is relevant to all levels of managers in serving multiple roles simultaneously (Fitsum 2014). Meanwhile, the main focused of earlier studies in Malaysia done by Rahman et al. (1997), Sulaiman et al. (2004) and Azhar (2005) was emphasis on practices of management accounting. In addition, Hui and Yusof (2010) reported that less studies focused on MAI. Nevertheless, there was studied on MAI done by Salmon and Joiner (2006) which concentrated on the MAI contextual conditions. Thus, there is a dearth of research regarding the use of management accounting among SMEs (Ahmad 2013). Furthermore, Mitchell and Reid (2000), Tripathi (2017) and Nandan (2010) reveal that there is lack of research initiatives studying the provision of MAI and the use of management accounting in SMEs. Similarly, the current literature reveals little research evidence about MAI in SME enterprises in both developed and developing countries (Alattar et al. 2009).

The aspects of life and industry and also model and principles of business has changed significantly parallel with nowadays phenomena of aggressive growth in digital revolution. Thus, ICT is not only used as a source of information and channel of communication but also important as an instrument for online business. Therefore, if technology is fully utilized, conventional business systems is highly recommending to replace by ICT which is believed as the best platform that could lead the firm to be more competitive in the current market.

Nowadays, digital inclusion is expected to be useful for SMEs in facing the industrial revolution 4.0 which is emerging rapidly. The use of ICT can improve business

competitiveness and provide genuine advantages for SMEs, thereby enabling them to be more competitive in the market (Alshamaila et al. 2013). Despite the benefits and opportunities that the ICT could offer, at present, the study on use of information technology in SMEs is still dearth and distinctive (Riemenschneider et al. 2003). Furthermore, Christauskas and Miseviciene (2011) found that the advances of accounting information technology have headed for online accounting for the past few years. Thus, technology adoption, especially at the organisational level, has become of paramount importance. Nevertheless, research in this area is still lacking, particularly in Malaysia (Tarmidi et al. 2014).

Therefore, this study contributions organizations in highlighting the importance of MAI in achieving competitive advantage, and how MAI plays the roles in selection of information characteristics that relevant to their business environment. In addition, this study enhance the understanding on the role of digital inclusiveness to improve performance in the light of competition in SMEs. This contributes to the literature on MAI and helps fill the gap in terms of ICT and performance in SMEs. On this note, this study has the following objectives:

1. To examine the influence of management accounting information on performance of SMEs.
2. To examine the moderating effect of digital inclusion on the relationship between MAI and performance.

## ***1.1 SME in Malaysia***

As stated in the SME Insights 2019/20: Economic Report of SMEs in the New Normal: Rebuilding the Economy.

The growth of SME GDP decreased to 5.8% in 2019 (2018: 6.2%), due to slow-down of Malaysia's economic in 2019 which is in line to weaker global economic growth. Nevertheless, SMEs contributed 38.9% (2018: 38.3%) to overall GDP, 17.9% (2018: 17.3%) to total exports and 48.4% (2018: 48.0%) to total employment. Meanwhile, SME GDP growth (5.8%) is faster compared to the overall GDP growth (4.3%). The growing of share contribution by SMEs to overall GDP and the growth rate of SME GDP proved that SMEs play an important role in Malaysian economy. For SME employment, the highest hiring volume was generated from by services sectors with 63.2%, followed by manufacturing (16.3%), agriculture (10.6%), construction (9.7%) and mining & quarrying (0.3%). In year 2020, the performance of SMEs has been affected by the implementation of Movement Control Order (MCO) due to unprecedented Covid-19 pandemic. Hence, SMEs nowadays has to adopt with a new normal in difference strategies of business by embracing digitalisation in the operations of their business to survive.

To ensure that SMEs continue to prosper, the Government continue its efforts to spur greater growth by providing support through strategic policies for financing, infrastructure, innovation and technology uptake, human capital development, market access as well as transformation of the legal and regulatory environment

to encourage the formalisation of businesses. Table 1 shows the distribution of SME development programmes in 2018.

In addition, the government was announced the Prihatin stimulus package and Pelan Jana Semula Ekonomi Negara (PENJANA) as an initiative to support SMEs in their business. Under PENJANA, there are 40 initiatives, which 24 initiatives for SMEs with RM14.5 billion has been allocated. The initiatives are included financial assistance, moratorium period, tax incentives and Wage Subsidy Programme which could minimize the negative impact of Covid-19 pandemic and lead to survival and growth of SMEs business.

Table 2 provides detailed definition by category namely micro, small and medium. SMEs in Malaysia are defined based on the following qualifying criteria in relation to sales turnover and employment:

**Table 1** SME development programmes in 2020 by focus area

Focus area	Number of programmes	Financial commitment (RM million)	Number of beneficiaries
Access to financing	38	9,122.2	444,640
Human capital development	54	193.1	139,624
Innovation and technology adoption	29	100.7	7,245
Market access	37	127.3	63,816
Infrastructure	16	42.4	1,143
Legal and regulatory environment	1	5.5	–
<b>Total</b>	<b>175</b>	<b>9,591.2</b>	<b>656,468</b>

Source: [www.SMECorp.com.my](http://www.SMECorp.com.my)

**Table 2** Definition of SMEs

	Micro		Small		Medium	
	Sales turnover	Employees	Sales turnover	Employees	Sales turnover	Employees
Manufacturing	<RM300,000	<5 employees	RM300,000 to <RM15 million	5 to <75 employees	RM15 million to ≤RM50 million	75 to ≤200 employees
Services & other sectors			RM300,000 to <RM3 million	5 to <30 employees	RM3 million to ≤RM20 million	30 to ≤75 employees

Source: [www.SMECorp.com.my](http://www.SMECorp.com.my)

- Manufacturing sector: Sales turnover maximum RM50 million OR full-time employees maximum 200.
- Services and other sectors: Sales turnover maximum RM20 million OR full-time employees maximum 75.

## 2 Literature Review

### 2.1 Management Accounting Information (MAI)

MAI can serve multiple purposes or functions simultaneously and play a vital role in all phases of the management process in the organisation. MAI has long been recognised as one of the most important internal information sources in contemporary organisations, and an effective tool that can provide useful information to the organisation to address recent developments in the business environment. The literature on management accounting and the studies of MAI have widely documented the importance of MAI in the organisation, particularly in respect of monitoring, controlling, planning, and decision-making. Ahmad (2012) found that MAI is a primary information source for decision-making and control. Similarly, Hui and Yusof (2010) suggested that MAI That consists of financial and non-financial are the main source for analysing business activities in an organisation, and one of the useful and essential sources which are useful to help them in making decision and evaluation of performance. Fitsum (2014) identified three main objectives of MAI: First, provide information for costing out products and services, and other interest area to management. Second, provide information for planning, controlling, evaluation, and continuous improvement. Third, provide information for decision-making. These three objectives have covered all important phases in management, which are planning, controlling and decision-making. Thus, it shows that MAI is needed and useful in the organization to be competitive and perform well. The managers and other users need access to relevant and accurate information about the activities required to achieve the organisation's intended strategies.

Raman et al. (2009) stated that MAI provides information that is used for multiple purposes in organisations process, from decision-making to organisational learning. Schäffer and Steiners (2004) noted that MAI could stimulate curiosity, enable rational decision processes and help the organisation to cope with environmental variety. MAI also contributes to planning and the implementing of organisation strategies. According to Kaplan et al. (2011), the usage of MAI enhances decision-making, guides strategy development, evaluates existing strategies, and focuses efforts related to improving organisational performance, and to evaluating the contribution and performance of organisational units and members.

Hui and Yusof (2010) defined MAI as an information source which consists of both financial and nonfinancial information, is useful for the management in planning, implementing and evaluating strategies for the long-term welfare of the



organization as a whole. Traditional MAI consists of only internal, historical, and financial information. Over time, they evolved to include a broader scope of information, includes internal/external, financial/non-financial, quantitative/qualitative, and historical/future oriented information (Heidmann 2008). Examples of such information are; cost, revenue, wastage, sales growth, customer satisfaction and loyalty, capacity utilization, employee motivation and product quality (Mia and Winata 2008). The four key information characteristics of MAI which are scope, timeliness, aggregation, and integration has been first formalized by Chenhall and Morris (1986). They proposed that MAI which are broad scope, timely, aggregated and integrative could be more useful by managers. Table 3 summarizes information characteristics of MAI dimension as discussed in Chenhall and Morris (1986).

Previous studies including Haedr (2012); Mia and Winata (2014) and Ghasemi et al. (2016) utilized Chenhall and Morris (1986) instrument to investigate MAI (e.g. usefulness, availability, use, and importance) that addressing MAI with emphasis on the scope of MAI dimension either individually or combinations of the dimensions. In this study, all four characteristics of MAI are examined and investigated collectively and separately. Additionally, this study utilizes Resource Based View as the underlying theory.

Christauskas and Miseviciene (2012) reveals that SMEs are undeveloped and their activities of business always changes in work environments that are characterised by change, hyper-competition and technological complexity. Meanwhile, Ting (200) reveals that SMEs are different to large-sized companies in term of challenges faced by SME which are a lack of access to finance, human resources, limited or inability to adopt technology, and a lack of information. For this reason, SMEs are recognised as being inherently different from their large firm counterparts, not least from a resource constraint perspective. However, MAI cannot be denied as an important factor for SMEs to ensure the effectiveness and efficiency of the business (Ahmad 2013; Kamal 2017). Ahmad (2012) indicates that MAI (and its absence) is associated with success (and failure) in SMEs.

**Table 3** Information characteristics

MAI dimension	Information characteristics
Scope	External information Nonfinancial information Future-oriented (e.g., probabilistic)
Timeliness	Frequency of reporting Speed of reporting
Aggregation	Aggregated by time-period Aggregated by functional area Analytical or decision models (e.g., marginal analysis, DCF, inventory models)
Integration	Precise targets for activities and their interrelationship within sub-unit Reporting on intra-sub-unit interactions

Source: Chenhall and Morris (1986)

## 2.2 *Digital Inclusion*

The 20/20 Trust, an organization that provides digital inclusion leadership, partnering with local communities to deliver digital literacy and inclusion programmes in New Zealand adopted digital inclusion as a social inclusion in the twenty-first century that ensures individuals and disadvantaged groups have access to, and skills to use ICT and allow them to take part and gain benefit from updated knowledge and information. By referring to Digital Inclusion Strategy of the UK Government, New Zealand Government define digital inclusion as:

- Digital skills—capable to use computers and the internet.
- Connectivity—access to the internet (fit infrastructure).
- Accessibility—services designed to meet all users' needs.

Based on literature review, Sheikh Khairuddin et. al. (2018) identified social networking, entertainment, business information search, e-commerce, business website, advertising and e-marketing as the domains of digital inclusion of entrepreneurs in SMEs. Digital skills on the other hand had been identified as operational skills, information gain, social, creative, and mobile. The use of ICT in business benefits the SMEs through productivity, internationalization and innovation (Giotopoulos et al. 2017), where Migiro (2006) added that SMEs organize business processes, deal with partners and address business markets. Ashrafi and Murtaza (2008) found that by using ICT, SMEs in Oman have realized business impact beyond their geographical area, cost reduction, improved revenue, and impact on customer relationship. The SMEs are also found to be more positive of future expected benefits of ICT implementation and investment to their organizations. Their study suggested that stimuli for ICT investments in SMEs may include demands of stakeholders; better and faster customer support and services; to stay ahead of competition; following the strategy set by top management; advice from consultants; demand of your suppliers and government requirements.

Compared to more restricted local market, business that employed e-commerce services is more capable to infiltrate a wider future and improve their sales (Ahmad Firdaus and Mohd Rafi 2017). However, SME Corporation (2012) reports the low adoption of technologies for ICT utilization, and it could be the reason for SMEs did not performed. ICT usage practices which consist of the purpose, technique and impulse to use it have impact on digital inclusion. Digital inclusion of ICT is regarded as a platform that benefits in managing the business better. In this study, digital inclusion is measured by three dimensions: (a) ICT utilization as a source of information; (b) ICT as a medium of communication; and (c) ICT as a medium for e-transaction activities.

### 2.3 *Organizational Performance*

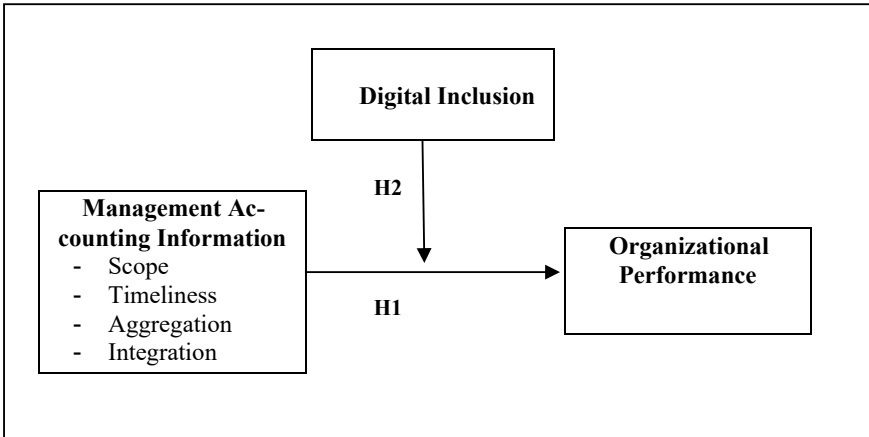
Organizational performance is defined as the result of the operations performed by organisational members (Ramayah et al. 2011; Delfi et al. 2018). Organizational performance has also been defined as a measure of how well organizations are managed and the value they deliver to customers and other stakeholders (Antony and Bhattacharyya 2010). Usually, performance measurements consist of two dimensions, which are the financial and non-financial and includes their indicators (Chenhall and Langfield-Smith 2007). In this study, performance comprises a list of financial and nonfinancial indicators that provide information on the degree of achievement of the results and objectives of SMEs.

The definition of performance remains an open question as only a few studies have used consistent definitions and measures of the term. The term performance became prevalent in management, strategic, and accounting research, but its structure and definition were rarely justified (Kirby 2005). Instead, the appropriateness of organizational performance, regardless of its form, was merely assumed in previous literature (March and Sutton 1997). The activities of an organization may allow an accurate assessment of the extent to which an organization achieves its strategic, tactical, and operational objectives and may serve as the basis of the reward and appraisal systems (Kuwaiti 2004). Performance is the most vital measure to evaluate organizations, environments and actions. As a result, organizational performance is most suitable to be developed as a dependent variable.

## 3 **Research Framework**

Generally, this study use research-based view (RBV). The RBV focuses on internal resource and capabilities to identify the determinants of a firm's competitive advantage and performance (Juan Manual et al. 2019). Based on RBV, Kornchai et al. (2020) confirms that all dimensions of strategic management accounting play a significant role in determining business outcome of the firms. The research framework of this study is illustrated in Fig. 1:

This study developed two hypotheses to explain the relationships between the variables. Delfi et al. (2018) proved that business performance has been affected by the use of management accounting system information. The study found that in order to successfully deal in the age of digital technology and globalization, companies must use MAI systems to perceive and recognize their environmental and industry changes and strategies of their competitors (Delfi et al. 2018). Meanwhile, Alimoradi and Borzoupour (2017) and Kornchai et al. (2020) reveals the importance of management accounting systems and how management accounting systems played the role to improve organization performance. Kasravi et al. (2017) also suggest that management accounting has the positive impact on company performance, namely financial and organizational performance. Bahaa et al. (2019) indicates that strategic MAI



**Fig. 1** Research framework

(information on product analyses, competitor and client) has positive impact on performance. Do et al. (2020) found that the use of broad scope MAI has a positive impact on the performance of Vietnamese tourism businesses. As such, the hypothesis is developed as follows:

*H1: There is a positive relationship between the usefulness of MAI and performance of the SMEs.*

Chenhall and Morris (1986) formalized the four key information characteristics of MAI which are broad scope, timeliness, aggregation and integration, thus H1 is further developed as follows:

*H1a: There is a positive relationship between the usefulness of the MAI characteristic (broad scope) and performance.*

*H1b: There is a positive relationship between the usefulness of the MAI characteristic (timeliness) and performance.*

*H1c: There is a positive relationship between the usefulness of the MAI characteristic (aggregation) and performance.*

*H1d: There is a positive relationship between the usefulness of the MAI characteristic (integration) and performance.*

Faradillah et al. (2018) reports the important role played by the level of frequency in digital inclusion in the development of the business globalization direction. Therefore, nowadays those SMEs employed ICT can run their business more efficient. (Faradillah et al. 2018). Meroño-Cerdan et al. (2007) concluded that the organizational performance are positively influenced by collaborative technologies and moreover it can be enhanced by using collaborative technologies through informational orientation. On the basis of the above discussion, second hypothesis is developed as follows:

*H2: Digital inclusion moderates the relationship between MAI usefulness and performance of SMEs.*

## 4 Methodology

A quantitative research design involving the use of questionnaires were carried out to examine the relationship between the variables. Instrument to measure the variables under study are derived from the literature and previous surveys. Malaysia has a large number of SMEs, thus it is not practical for this study to include all SMEs throughout Malaysia. Therefore, the distributions of questionnaires were only focus on SMEs situated in the state of Johor, Selangor, Putrajaya and Kuala Lumpur. According to the Malaysian SME statistics (2016), which was published in 2020, these four state represent 45.3% of total SMEs in Malaysia, which is the highest number of SMEs has been recorded and estimated total of 410,900. A total of 600 questionnaires were distributed to Malaysian SMEs in various sectors to elicit useable responses. The samples are determined using probability sampling procedures by combining two sampling procedures, i.e. stratified random sampling and systematic sampling. Data collection period is between March 2021 until June 2021.

A total of 400 questionnaires were distributed by email to the SMEs respondents in Johor, Selangor, Putrajaya and Kuala Lumpur. Another 200 questionnaires were distributed at random through social networking platforms such as WhatsApp, Instagram, Facebook, and Twitter. Received a total of 200 responses out of 400 sets of questionnaires distributed by email and received 138 responses for the social networking platform sent. The total number of responses is 338 or 56% percent, 200 from emails and 138 from social networking platforms. Data were analysed using SPSS and Smart PLS 3.0 (Partial Least Square) to examine the research hypotheses. Instrument to measure the variables under study are derived from previous studies.

Likert scale of 1 to 5 (1 = Strongly Disagree; 5 = Strongly Agree) were used gauge the perceptions of respondents on MAI, digital inclusion and organizational performance influencing it. Summary of measurements is shown in Table 4.

### 4.1 Data Analysis

Demographic analysis presented in Table 5 shows demographic information of respondents and their organizations.

Data analysis includes tests such as reliability, validity and hypotheses of the study. For the reflective measurement model, internal consistency has been tested by using reliability test which are Cronbach's alpha, and composite reliability (CR). Whereas convergent validity has been tested using Average Variance Extracted (AVE). Accepted value of reliability for Cronbach Alpha and CR are 0.7 or more and convergent validity of AVE is 0.5 or more (Bagozzi and Yi 1998). (Sekaran and Bougie 2013). The results of the Cronbach alpha, CR and AVE which are calculated by Structural Equation Modeling (SEM) are shown in Table 6 below. The value for all constructs for Cronbach's alpha and CR are greater than 0.7 and AVE for all

**Table 4** Variables of study

Variable	Item	Source
MAI	<ol style="list-style-type: none"> <li>1. Information that relates to possible future internal events (e.g. new projects, pricing decision, new product development, change of supplier)</li> <li>2. Information that relates to possible future external events (e.g. customer preferences, attitudes of government and consumer bodies, competitive threats, technological developments, etc.)</li> <li>3. Quantification of the likelihood of future events occurring (e.g., probability estimates)</li> <li>4. Non-financial information that relates to production process (e.g. output rates, scrap levels, machine efficiency, and employee productivity)</li> <li>5. Non-financial information that relates to product markets (e.g. market size, market growth)</li> <li>6. Information on board factors external to your organization (e.g. economic conditions, population growth, technological developments, etc.)</li> <li>7. Report are provided frequently on a systematic, regular basis (e.g. daily, weekly reports)</li> <li>8. Relevant information is supplied to managers automatically upon its receipt into information systems or as soon as processing is completed</li> <li>9. Requested information to arrive immediately upon request</li> <li>10. There is no delay between an event occurring (e.g. competitors' actions, market demand) and relevant information being reported to managers</li> <li>11. Information is provided on the different sections or functional areas in your organization (e.g. marketing and production, or sales, cost, or profit centers)</li> <li>12. Information on the effect of events on particular time periods (e.g. monthly/quarterly/annual summaries, trends, comparisons)</li> <li>13. Information that has been processed to show the influence of events on different functions, such as marketing or production, associated with particular activities or tasks</li> <li>14. Information on the effect of different sections' activities on summary reports (e.g. profit, cost, and revenue reports for other sections)</li> <li>15. Information provided in formats suitable for input into decision models (e.g. discounted cash flow analysis, incremental or marginal analysis, inventory analysis, credit policy analysis)</li> <li>16. Information on precise targets for the activities of all sections within your organization</li> <li>17. Information on the impact that your decisions will have on other sections in your organization</li> <li>18. Information that relates to the impact that your decisions would have on the performance of your whole organization</li> <li>19. Information on the influence of other individuals' decisions on your area of responsibility</li> </ol>	Haedr (2012)

(continued)

**Table 4** (continued)

Variable	Item	Source
Digital inclusion	<ol style="list-style-type: none"> <li>1. ICT is used to deal with customers</li> <li>2. ICT is used to deal with suppliers</li> <li>3. ICT is used to get feedback from customers</li> <li>4. ICT is used to reach out to a bigger market share</li> <li>5. ICT is used to get more “like” from customers</li> <li>6. ICT is used to get information about entrepreneurship</li> <li>7. ICT is used to get information about new and latest products in the market</li> <li>8. ICT is used to get information about carnivals that I can be involved in</li> <li>9. ICT is used to get information about product that are similar with my product</li> <li>10. ICT is used to get information about business policies determined by the government agencies</li> <li>11. ICT is used to do online financial transactions with customers</li> <li>12. ICT is used to do online financial transactions with suppliers</li> <li>13. ICT is used to make purchases and order items online</li> <li>14. ICT is used to do online financial transactions with the government to pay taxes and others</li> <li>15. ICT is used to do online financial transactions with stakeholders</li> <li>16. Products or services are advertised on the internet / web / social media</li> <li>17. Subscription to pay advertisement on the internet</li> <li>18. Advertising live products or services on social media</li> <li>19. Celebrity’s social media space is use to advertise products or services</li> <li>20. Celebrity’s testimonials on social media is use to sell products or services</li> <li>21. Online quizzes are used to market products or services</li> <li>22. Provide online membership cards to attract customers</li> </ol>	Faradillah et al. (2018)
Organizational performance	<ol style="list-style-type: none"> <li>1. My organization is more <b>competitive</b> than the key competitors</li> <li>2. My organization have more <b>customers</b> than the key competitors</li> <li>3. My organization is <b>growing</b> faster than the key competitors</li> <li>4. My organization is more <b>profitable</b> than the key competitors</li> <li>5. My organization is more <b>innovative</b> than the key competitors</li> <li>6. My organization have more <b>workers</b> than the key competitors</li> </ol>	King et al. (2010)

**Table 5** Demographic information (N = 338)

Profile	Description	Frequency	Percent (%)
Highest education level	SPM/STPM	20	5.9
	Diploma	84	24.9
	Bachelor degree	180	53.3
	Master degree	40	11.8
	Professional qualification	14	4.1
Current position	Top management	153	45.3

(continued)

**Table 5** (continued)

Profile	Description	Frequency	Percent (%)
	Middle management	101	29.9
	Low level management	54	16.0
	Non-managerial position	30	8.9
Total years worked in this organization	Less than 5 years	173	51.2
	5 to 10 years	109	32.2
	11 to 15 years	42	12.4
	More than 15 years	14	4.1
Total years of work experience	Less than 5 years	134	39.6
	5 to 10 years	118	34.9
	11 to 15 years	33	9.8
	16 to 20 years	36	10.7
	21 to 25 years	10	3.0
	More than 25 years	7	2.1
Main industrial sector of organization	Service	251	74.3
	Manufacturing	31	9.2
	Agriculture	9	2.7
	Construction	29	8.6
	Mining and Quarrying	5	1.5
	Others	13	3.9
Number of full time employees in the organization	Less than 4	49	14.5
	5 to 29	92	27.2
	30 to 74	96	28.4
	75 to 200	57	16.9
	More than 200	44	13.0
Location	Selangor	110	32.5
	Kuala Lumpur	115	34.0
	Putrajaya	32	9.5
	Johor	81	24.0
Annual sales turnover	Less than RM300,00	66	19.5
	RM300,000 - RM3 Million	69	20.4
	RM3 Million – RM15 Million	71	21.0
	RM15 Million – RM20 Million	81	24.0
	RM20 Million – RM50 Million	28	8.3
	More than RM50 Million	23	6.8
Organization age in existing industry	Less than 5 years	68	20.1
	5–10 years	105	31.1
	11–15 years	81	24.0
	16–20 years	30	8.9
	More than 20 years	54	16.0



**Table 6** Reliability and convergent validity test

Variables	Cronbach alpha	Composite reliability	AVE
M.A.I			
A1 (scope)	0.793	0.9606	0.828
A2 (timeliness)	1.000	1.000	1.000
A3 (aggregation)	1.000	1.000	1.000
A4 (integration)	1.000	1.000	1.000
Digital inclusion	0.962	0.972	0.898
Organization performance	0.938	0.956	0.843

constructs are more than 0.5. In conclusion, Table 6 shows the data collected are accurate and suitable for statistical analysis.

In addition, the discriminant validity for this study has been evaluated based on the Fornell-Larcker criteria and Heterotrait-Monotrait (HTMT) (Henseler et al. 2015). The Fornell & Larcker criterion was defined by the AVE latent variable squared roots, which should be greater than the inter-constructions between the dependent variables and other variables (Fornell and Larcker 1981). Table 7 shows that all the square roots of the constructs range from 0.864 to 0.948 is higher than the correlation coefficient among constructs. Moreover, for HTMT, the maximum threshold is 0.9. Results for discriminant validity shows that HTMT of all construct are less than 0.9, providing clear evidence for discriminant validity.

**Table 7** Fornell-Larcker criterion and Heterotrait-Monotrait ratio (HTMT)

Variables	A1	A2	A3	A4	DI	OP
M.A.I						
A1 (scope)	0.910					
A2 (timeliness)	0.473 (0.530)	0.873				
A3 (aggregation)	0.431 (0.484)	0.433 (0.433)	0.892			
A4 (integration)	0.429 (0.482)	0.404 (0.404)	0.410 0.410	0.864		
Digital inclusion	0.060 (0.069)	0.227 (0.232)	0.143 (0.147)	0.089 (0.091)	0.948	
Organization performance	0.325 (0.377)	0.335 (0.346)	0.265 (0.274)	0.343 (0.354)	0.320 (0.333)	0.901

## 5 Finding and Discussion

The findings of this study highlight two objectives which are the relationship between MAI and organizational performance and digital inclusion as moderating on the relationship between MAI and organizational performance. Hypothesis testing is carried out using SEM by bootstrapping in SmartPLS to test the relationship between MAI, digital inclusion and organizational performance. A fit measurement model is evaluated by looking at the model index that required achieving the minimum value requirement. The results show a good model fit for all variables, MAI, digital inclusion and organizational performance, where there are in the values proposed for SRMR (<0.08) and NFI (>0.90). Model fit for this study is good where the value of SRMR (0.333) and NFI (0.905). Therefore, the proposed model was accepted because the value of the index has reached the proposed value. Following the Chin (1998), and Hair et al. (2013), recommendation process. It will test the 6 (six) hypotheses that were generated in Chapter 2.

In the path coefficients, Table 8 shown the importance of the direct effect of the variables and T-value/statistics. From the result shown in Table 8, this study can conclude that the path coefficient is significant based on the empirical T-value is higher than 1.65 at 10% significance level (alpha = 0.10; two-tailed test), higher than 1.96 at 5% significance level (alpha = 0.05; two-tailed test) and higher than 2.57 at 1% significance level (alpha = 0.01; two-tailed test). The value for R<sup>2</sup> = 0.262 which is higher than 0.1, confirm that research model is consistent with the data collected.

Hypothesis test results in Table 8 showing that H1a, H1b and H1d are supported. Thus the usefulness of broad scope, timeliness and integration of MAI are positively affecting the organizational performance. Meaning, if the usefulness of broad scope, timeliness and integration of MAI increase by 1, organizational performance will increase by 11.8%, 12.2% and 20.4% respectively. This decision is consistent with Delfi et al. (2018), Do et al. (2020), Bahaa et al. (2019), Alimoradi and Borzoupour (2017), Kasravi et al. (2017). In contrast, hypothesis H1c is not supported, Therefore,

**Table 8** Hypothesis result

Hypothesis	β	p-value	t-value	Conclusion
<b><i>Hypotheses: direct effect</i></b>				
H1: MAI → performance				
H1a: MAI (broad scope) → performance	0.118	0.099	1.660	Supported
H1b: MAI (timeliness) → performance	0.122	0.032	2.154	Supported
H1c: MAI (aggregation) → performance	0.042	0.502	0.672	Not supported
H1d: MAI (integration) → performance	0.204	0.014	2.473	Supported
<b><i>Hypothesis: indirect effect</i></b>				
H2: Digital inclusion moderates the relationship between MAI usefulness and performance	0.021	0.592	0.537	Not supported

there is no prove that usefulness of aggregation of MAI will affect organizational performance.

## 6 Conclusion

The objectives of study were to obtain an empirical evidence of the relationship between MAI and organizational performance and the effect of digital inclusion as a moderator on this relationship. Based on the analysis of the conceptual model, SEM shows a good model fit and the results is consistent with the theory used. Thus, the framework of the study can be used as a basis in this study. The results show that the usefulness of broad scope, timeliness and integration of MAI positively affect the organizational performance for SMEs in Malaysia. Therefore, this research has proven the significant role of broad scope, timeliness and integration of MAI in business operation to increase organizational performance.

Broad scope characteristic of MAI encompasses financial and non-financial information about production process, product marketing and external factors of the organization such as economic conditions, population growth, and technology developments. The information is important in decision making process and in helping SMEs to successfully implement their business strategies. Meanwhile, for timeliness characteristic of MAI, the information is available upon request by the managers. It helps managers to decide and act effectively without delay. In addition, Integration characteristics of MAI is needed because the impact of decision from one department not only affected that particular department, but affect performance of other department, and of the whole organization. It could also influence other individual's decision on the related area of responsibility. In particular, SMEs in Malaysia should evolve their management accounting system that consist of complete information needed, quickly and effectively disseminate the information to the relevant parties and integrate the information between departments in order to improve the performance of the organization.

Besides, the study results did not find significant effect of digital inclusion as a moderator on the relationship between MAI and organizational performance. This study did not find evidence to support that digital inclusion moderates the relationship between MAI and organizational performance. Meaning, the digital inclusion in the organization will not give any impact to this relationship.

There are several limitations that must be taken into account in this study. First, the approach used was cross-sectional or data is collected at one point of time. This approach does not include continuous improvement that may influence the results of the hypothesis. Second, the use of self-assessment data may allow bias feedback. Third, generalization study findings could not be performed against all SMEs in Malaysia because the data collected only from companies located at Kuala Lumpur, Putrajaya, Selangor and Johor only. Future research may consider longitudinal case study, or survey of multiple respondents covering wider sample.

## References

- Ahmad, K.: The use of management accounting practices in Malaysian SMEs. University of Exeter, United Kingdom (2012)
- Ahmad, K.: The adoption of management accounting practices in Malaysian small and medium-sized enterprises. *Asian Soc. Sci.* **10**(2), 236 (2013)
- Ahmad Firdause, M.F., Mohd Rafi, Y.: Psikologi usahawan: peranan motivasi kepada penciptaan perniagaan baharu E-Dagang. *J. Bus. Soc. Dev.* **5**(1), 49–59 (2017)
- Al Lami, M.F.F., Maelah, R., Ghassan, G.: Management accounting information usefulness and cloud computing qualities among small-to-medium enterprises. *Int. J. Manag. Stud.* **26**(1), 1–31 (2019)
- Alattar, J.M., Kouhy, R., Innes, J.: Management accounting information in micro enterprises in Gaza. *J. Account. Organ. Chang.* **5**(1), 81–107 (2009)
- Alimoradi, A., Borzoupour, S.: Strategy, management accounting system, and performance of Iranian petrochemical companies in the light of contingency theory. *Iran. J. Oil Gas Sci. Technol.* **6**(2)(19): 61–74 (2017).
- Alshamaila, Y., Papagiannidis, S., Li, F.: Cloud computing adoption by SMEs in the north east of England: a multi-perspective framework. *J. Enterp. Inf. Manag.* **26**(3), 250–275 (2013)
- Antony, J.P., Bhattacharyya, S.: Measuring organizational performance and organizational excellence of SMEs—part 2: an empirical study on SMEs in India. *Meas. Bus. Excell.* **14**(3), 42–52 (2010)
- Ashrafi, R., Murtaza, M.: Use and impact of ICT on SMEs in Oman. *Electron. J. Inf. Syst. Eval.* **11**(3), 125–138 (2008)
- Azhar, Z.: Application of management accounting techniques in Malaysian higher learning institutions: a survey of practices. Ph.D. thesis, Universiti Teknologi Mara (2005)
- Bagozzi, R.P., Yi, Y., Nassen, K.D.: Representation of measurement error in marketing variables: review of approaches and extension to three-facet designs. *J. Econom.* **89**(1–2), 393–421 (1998)
- Bahaa Alden, H.M., Ruhanita, M., Amizawati, M.A.: Strategic management accounting information and performance of private hospital in Malaysia. *Int. J. Econ. Manag. Account.* **2**, 473–502 (2009)
- Chenhall, R., Langfield-Smith, K.: Multiple perspectives of performance measures. *Eur. Manag. J.* **25**(4), 266–282 (2007)
- Chenhall, R.H., Morris, D.: The impact of structure, environment, and interdependence on the perceived usefulness of management accounting systems. *Account. Rev.* 16–35 (1986)
- Christauskas, C., Miseviciene, R.: Online accounting software for the business. *Acta Universitatis Lodzianis. Folia Oeconomica Acta Universitatis Lodzianis, Folia Oeconomica nr 257/2011*, pp. 35–46 (2011)
- Christauskas, C., Miseviciene, R.: Cloud-computing based accounting for small to medium sized business. *Eng. Econ.* **23**(1), 14–21 (2012)
- Delfi, P., Desy, L., Maimunah, M.: Effect of use of management accounting systems on competitive advantages: business unit performance as a mediator (study of MSMES in Palembang City). *J. Account. Strategic Financ.* **1**(1), 33–34 (2018)
- Dewi, K.P.: Quality analysis of management accounting information systems and organizational structures on management decision making. *JASa (J. Akuntansi Audit dan Sistem Informasi Akuntansi)* **4**(1), 31–43 (2020)
- Faradillah, I.O., Husna, A.D., Norazirawati, A., Sheikh Muhamad Hizam, S.K.: Digital inclusion among entrepreneurs of small and medium enterprise (SMEs): a preliminary survey. *J. Educ. Soc.* **9**(2), 90–97 (2018)
- Fitsum, K.W.: The role of management accounting information systems on managerial decisions in printing industry in Ethiopia: the case of medium and large scale printing companies (Doctoral dissertation, Andhra University) (2014)
- Fornell, C., Larcker, D.F.: Evaluating structural equation models with unobservable variables and measurement error. *J. Mark. Res.* **18**(1), 39–50 (1981)

- Ghasemi, R., Mohamad, N.A., Karami, M., Bajuri, N.H., Asgharizade, E., Liu, M.: The mediating effect of management accounting system on the relationship between competition and managerial performance. *Int. J. Account. Inf. Manag.* **24**(3), 1–28 (2016)
- Giotopoulos, I., Kontolaimou, A., Korra, E., Tsakanikas, A.: What drives ICT adoption by SMEs? Evidence from a large-scale survey in. *J. Bus. Res.* **81**(August), 60–69 (2017)
- Haedr, A.R.: A contingency theory-based investigation of the role of management accounting information in management control systems in large manufacturing companies in Libya. Ph.D. thesis, University of Huddersfield (2012)
- Hair, J.F., Ringle, C.M., Sarstedt, M.: Editorial - partial least squares structural equation modeling: rigorous applications, better results and higher acceptance. *Long Range Plan.* **46**(1–2), 1–12 (2013)
- Heidmann, M.: *The Role of Management Accounting Systems in Strategic Sensemaking*. Springer, Wiesbaden (2008)
- Henseler, J., Ringle, C.M., Sarstedt, M.: A new criterion for assessing discriminant validity in variance-based structural equation modeling. *J. Acad. Mark. Sci.* **43**, 115–135 (2015)
- Hui, W.S., Yusof, N.A.B.M.: The use of management accounting information (Mai): perceptions of preparers and users. In: *International Conference on Science and Social Research (CSSR)*, pp. 259–264 (2010)
- Juan Manual, R.J., Raquel, F.L., Pedro, A.P.: Resource-based view and SMEs performance exporting through foreign intermediaries: the mediating effect of management controls. *Sustainability.* **11**, 3241 (2019)
- Kaplan, R., Atkinson, A., Young, S.: *Management Accounting: Information for Decision Making and Strategy Execution*. M Com Book (2011)
- Kasravi, N., Mortega, G., Najafi, Z.: The effect of management accounting on financial performance and organizational performance in Tafresh University. *J. Internet Bank. Commer.* **22**(3), 1–10 (2017)
- King, R., Clarkson, P.M., Wallace, S.: Budgeting practices and performance in small healthcare businesses. *Manag. Account. Res.* **21**, 40–55 (2010)
- Kirby, J.: Toward a theory of high performance. *Harv. Bus. Rev.* **83**, 30–39 (2005)
- Kornchai, P., Khajit, N.A.: Strategic management accounting and firm performance: evidence from finance businesses in Thailand. *J. Asian Financ. Econ. Bus.* **7**(8), 309–321 (2020)
- Kuwaiti, M.: Performance measurement process: definition and ownership. *Int. J. Oper. Prod. Manag.* **24**(1), 55–78 (2004). <https://doi.org/10.1108/01443570410510997>
- March, J.G., Sutton, R.I.: Organizational performance as a dependent variable. *Organ. Sci.* **8**, 698–706 (1997)
- Meroño-Cerdan, A., Soto-Acosta, P., López-Nicolás, C.: Analyzing collaborative technologies' effect on performance through intranet use orientations. *J. Ent. Inf. Manag.* **21**(1), 39–51 (2007)
- Mia, L., Winata, L.: Manufacturing strategy, broad scope mas information and information and communication technology. *Br. Account. Rev.* **40**(2), 182–192 (2008)
- Mia, L., Winata, L.: Manufacturing strategy and organisational performance: the role of competition and mas information. *J. Account. Organ. Chang.* **10**(1), 83–115 (2014)
- Migiro, S.O.: Diffusion of ICTs and E-commerce adoption in manufacturing SMEs in Kenya. *South Afr. J. Libr. Inf. Sci.* **72**(1), 35–44 (2006)
- Mitchell, F., Reid, G.C.: Problems, challenges and opportunities: the small business as a setting for management accounting research. *Manag. Account. Res.* **11**(4), 385–390 (2000)
- Nandan, R.: Management accounting needs of SMEs and the role of professional accountants: a renewed research agenda. *J. Appl. Manag. Account. Res.* **8**(1), 65 (2010)
- Rahman, A.Z.A., Omar, N.H., Hoo, T.Y.: A survey of management accounting practices in Malaysian manufacturing companies. BS. thesis, University of Technology MARA (1997)
- Raman, N., Yuserrie, Z., Michael, T.: Strategic management accounting information elements: Malaysian evidence. *Asia-Pac. Manag. Account. J.* **4**(1), 17–34 (2009)
- Ramayah, T., Samat, N., Lo, M.C.: Market orientation, service quality and organizational performance in service organizations in Malaysia. *Asia-Pac. J. Bus. Adm.* **3**, 8–27 (2011)

- Riemenschneider, C.K., Harrison, D.A., Mykytyn, P.P.: Understanding it adoption decisions in small business: integrating current theories. *Inf. Manag.* **40**(4), 269–285 (2003)
- Salmon, S., Joiner, T.: Integrative management information, role ambiguity and managerial performance: an intervening model. Paper presented at the 20th Australia and New Zealand Academy of Management Conference (2006)
- Schäffer, U., Steiners, D.: The use of management accounting information, learning and organizational performance. *Eur. Bus. Sch.-Chair Manag. Account. Control*, 1–34 (2004)
- Sekaran, U., Bougie, R.: *Research methods for business: a skill-building approach* (2003). <http://www.wileyresearchmethodsforbusiness.com/>. ISBN13: 9781119942252
- Khairuddin, S.M.H.S., Omar, F.I., Ahmad, N.: Digital inclusion domain in entrepreneurship: a preliminary analysis. *Adv. Sci. Lett.* **24**, 2721–2724 (2018)
- SME Insights 2019/20. SMEs in the New Normal: Rebuilding the Economy: Economic Performance and Outlook, SME Corp. Malaysia. <https://www.smecorp.gov.my/index.php/en/component/content/article/191-laporan-tahunan/4323-sme-insights-2019-20?layout=edit>. Accessed March 2021
- Sulaiman, M.B., Nazli Nik Ahmad, N., Alwi, N.: Management accounting practices in selected asian countries: a review of the literature. *Manag. Audit. J.* **19**(4), 493–508 (2004)
- Tarmidi, M., Rasid, S.Z.A., Alrazi, B., Roni, R.A.: Cloud computing awareness and adoption among accounting practitioners in Malaysia. *Proc. Soc. Behav. Sci.* **164**(1), 569–574 (2014)
- Ting, O.: SMEs in Malaysia: Pivot points for change. <http://www.mca.org.my>. Accessed 27 Jan 2004
- Do, T.H., Le, H.M., Luong, D.T.T., Tran, Q.T.: Relationship between the management accounting information usage, market orientation and performance: evidence from vietnamese tourism firms. *J. Asian Financ. Econ. Bus.* **7**(10), 707–716 (2020)
- Tripathi, V.: *The management accounting needs of small enterprises and the role of small accounting practices*. Ph.D. thesis, The Open University (2017)
- Kamal Abu Amsha, M.: Evaluation and predictability of performance sector portfolio's and Al-Quds index/evidence from Palestine exchange. *Palestine Tech. Univ. Res. J.* **5**(1), 16–34 (2017). <https://doi.org/10.53671/pturj.v5i1.49>

# Capital Adequacy and Profitability Indicators: An Empirical Study on Palestinian Banks



Bahaa Abo Awwad 

**Abstract** This study aims to test the relationship between the capital adequacy and profitability indicators of Palestinian banks. The study sample consists of six Palestinian local banks, listed on the Palestine Stock Exchange and operating between 2010 and 2019. A simple linear regression model is used to determine the relationship between the measure of capital adequacy and measures of bank profitability. The results show that, in general, there is a negative relationship between capital adequacy and return on equity and that the capital adequacy ratio for banks operating in Palestine is high and exceeds the minimum specified according to Basel III standards (10.5%), which is a very good indicator of the strength of the banking system in Palestine.

**Keywords** Capital adequacy · Palestinian banks · Palestine monetary authority return on assets · Return on equity · Earnings per share

## 1 Introduction

Capital adequacy is one of the most important tools used to identify a bank's solvency and its ability to withstand potential financial risk, as the lower the probability of financial risk for a bank, the lower the degree of its financial solvency and vice versa (Al-Harith and Hazouri 2018) Also, increasing capital adequacy means achieving better protection for depositors. This is what a bank's management wants, as it reflects positively on its shareholders (Al-Jamil 2017) Financial institutions, in general, are exposed to various financial risks that affect their profits, especially with the increasing role banks play in the economic environment. These risks vary in their forms and causes. Most are linked to budget items banks can control, including the adequacy of capital. However, bank managers must adopt scientific methods in banks management and innovate methods that work to achieve goals and increase returns (Al-Taie and Abdul-Hadi 2013).

---

B. A. Awwad (✉)

College of Business and Economics, Department of Computerized Banking and Financial Science, Palestine Technical University-Kadoorie, Tulkarem, Palestine

Financial performance represents a narrow concept of companies' performance as it focuses on using financial indicators to measure the extent to which goals are being achieved. However, it is also the main factor in companies' survival and growth (Al-Khatib 2010). The primary goal of banks is to maximize shareholder wealth. Achieving this goal is linked to many factors, including banks' ability to earn profits. Profitability is a measure of banks' overall performance. It plays a critical role in their sustainability, especially for banks that work to increase their capital either by allocating part of their revenues as capital reserves, as determined by regulation or instructions, or through mergers and acquisitions. Profits are one of the most important factors in attracting investors and in increasing investor confidence (Al-Rubaie and Radi 2012).

The Palestinian banking environment is controlled by the Palestinian Monetary Authority, which was established after the signing of the Paris Protocol on Trade Relations between the Palestinian National Authority and Israel in 1994. The purpose of this protocol was to implement and regulate monetary policies in Palestine. The Palestinian Monetary Authority operates under the Palestinian Monetary Authority Law No. (2) which was issued by the Palestinian Legislative Council in 1997, which defined its independence in addition to Banking Law No. 9 of 2010, where in 2019 the number of licensed banks in Palestine reached 14, including 7 local banks, and 7 foreign commercial banks, with a number of 370 branches distributed among 239 branches of local banks and 131 branches of foreign banks (Palestine Monetary Authority, annual report 2019).

Due to the importance of the banking sector in revitalizing the Palestinian economy as the main component of the financial system, ensuring the safety of the Palestinian national banking system in general, avoiding any banking shocks that might weaken confidence in it, and ensuring that banking risks are confronted, it was necessary through this study to shed light on the adequacy of the capital of Palestinian banks.

Based on the foregoing, Palestinian banks should strike a balance between their capital adequacy index, as a measure of hedging their financial risks, and their profitability indicators. Hence, the objectives of this study are to identify the role capital adequacy plays in enhancing the profitability indicators (return on assets, return on equity, and earnings per share) of Palestinian banks.

## **2 Theoretical Framework and Literature Review**

### ***2.1 The Relationship of Capital Adequacy and Profitability Indicators***

Some believe that the interest in the issue of capital adequacy dates back to the global debt crisis at the beginning of the eighties of the last century, as they consider it the real and only reason for the issuance of the Basel decisions known as "Basel". In fact, the interest in capital adequacy dates back a long time before that, in the middle



of the ninth century, a law was issued for the banks of the United States of America, which determines the minimum capital for each bank according to the number of residents in the area in which it operates.

The bank's capital measures the amount of funds that secure the bank a part of the liquidity that provides protection for the bank in the face of losses that may occur in the future. Capital adequacy expresses the provision of the volume of liquidity required to face the events that may occur in the future (Khasawneh and Obeidat 2016). Also, capital adequacy is the expected capital to maintain a balance with the risks to which the financial institution is exposed. These risks could be credit risks, market risks and operational risks (Dang 2011). In addition, capital adequacy increases the ability of banks to expand their banking operations and activities, innovate and provide new services, achieve a profitable and acceptable profit for them, contribute to creating the competitive advantage of the bank and keeping it able to continue to compete (Odekina et al. 2019).

It is necessary to direct banks' managements towards a very important issue in evaluating their performance and continuity of work without difficulties. This issue is related to some internal factors or indicators, such as capital adequacy, that directly affect their activities and then their financial performance. This effect is reflected in particular on the banking sector and the national economy in general, as well as a statement of the impact of these factors on the continuity of commercial banks' profits, which give commercial bank administrations strength and opportunity to work with their tools, and achieve continuity in their future profits.

## **2.2 *Basel Committee***

It can be said that the Basel Committee on Banking Supervision is the committee that was established and formed by the ten industrialized countries at the end of 1974 under the supervision of the Bank for International Settlements in Basel, Switzerland. It was granted by international banks and the failure of some of these banks, in addition to the strong competition on the part of Japanese banks with American and European banks due to the lack of capital of these banks, bearing in mind that in light of globalization, those American and European banks are expanding around the world outside the mother country (Rice 2015).

It is worth noting that the Basel Committee is a technical advisory committee which is not based on any international agreement. However, it was established by a decision of the governors of the central banks of the industrialized countries. This committee does not have any legal or obligatory status, although it has become over time of greater "actual" value. The decisions and recommendations of the committee include setting appropriate principles and standards for banking supervision with reference to examples of good practices in different countries in order to motivate countries to follow those principles and standards and benefit from Among these practices (Al-Shammari 2016).

In 1988, the Basel Committee approved a unified standard for capital adequacy to be binding to all banks operating in banking activity as an international or global standard to indicate the position of the financial position of the bank and strengthen the confidence of depositors in it from the perspective of deepening the solvency of the bank. All operating banks must adhere to the ratio of their capital to their total risky assets, after weighting them with credit risk weights, reach 8% as a minimum. Moreover, everyone must reconcile their situation with this ratio at the end of 1992 (Al-Ali and Daoud 2017).

The Basel 1 agreement included Regulatory Capital: It is the capital that must be maintained based on the instructions of the supervisory authorities to cover the main risks, and it represents the first line of defense to face unexpected losses (risks), and it consists of (Al-Moussawi 2018):

Primary Capital, which constitutes (written and paid up capital + declared reserves (statutory, optional), premium (discount), other reserves + retained earnings (losses) + non-controlling interests), and subtracts from the basic capital + losses for the period (cost of purchase of treasury shares + intangible assets).

Supplementary Capital includes (foreign currency translation differences + fair value reserve for financial assets through equity, with a maximum of 45%, added if positive or subtracted if negative + general banking risk reserve + medium or long-term support loans Term with common characteristics between equity instruments and debt instruments, with certain conditions.

Owing to the criticisms of Basel 1, including non-discrimination in risk, bias towards Organization for Economic Co-Operation and Development (OECD) countries, and granting private sector facilities a risk weight (100%), which led to poor quality Assets with banks, and insufficient (recognition) of credit risk mitigation tools, in mid-1999, the Basel Committee published preliminary proposals for a new framework for measuring bank solvency (capital adequacy) to replace the Basel 1 Convention in 1988. After long discussions of the proposals of this agreement, it was approved and agreed upon in 2004 and then it became known as the Basel II Agreement, so that it will be ready for implementation during a transitional period that extends to the end of 2006. Basel II aims to develop the general framework for capital more sensitive to the risks of credit losses, which requires the formation of high levels of capital for those with high credit risks and vice versa. She has (Al-Jamil 2017).

Since the introduction of the Basel III project, the Basel Committee has taken the initiative to increase the capital required for securitization and other complex instruments, the operations in which many banks were involved during the last global financial crisis of 2008. By covering liquidity (the ratio of liquid assets held by the bank to the volume of its inflows). Cash for 30 days) in order to meet its liquidity needs. The second is the measurement of liquidity in the medium and long term, the aim of which is to provide resources with stable liquidity to the bank. (Abdul Qader et al. 2015). As for the main axes approved by Basel III, the most important of them are (Financial and Banking Illuminations 2012) obligating banks to maintain a certain amount of a Primary Capital, which is of the first level and consists of paid-up capital and retained profits and is equivalent to at least 4.5% of their risky

assets, an increase from the previous ratio estimated at 2% according to the Basel II Agreement, and the formation of a new separate reserve consisting of common shares and equivalent to 2.5% of the assets, meaning that the banks must increase the amount of premium capital that they maintain to face future shocks to three times to reach 7%. In case the reserve funds ratio drops below 7%, the financial authorities can impose restrictions on banks distributing profits to shareholders or granting financial rewards to their employees.

### 2.3 Literature Review

The capital adequacy ratio reveals the internal strength of the bank to withstand potential losses, as the high of this ratio indicates that the bank has the most strength and ability to protect the rights of investors, and ensures that the bank is able to meet liabilities and other risks such as operational risks, credit risks and market risks. There are many studies that indicated that the capital adequacy ratio has a relationship with the profitability of banks Al-Maqtari et al. (2018), which found a positive relationship between the capital ratio and the profitability of commercial banks, and this study is consistent with the study Alper and Anbar (2011), a study by Hassan (2016) shows that capital adequacy is an important issue for both the supervisory authorities and banks as it represents the most important component of banking strength. This was confirmed in Basel I, in 1988, where banking standards were applied to more than 100 countries. However, this standard's many weaknesses prompted the Basel Committee to amend its regulations in Basel II and finally to propose a new standard, in 2009, to require a measure of capital adequacy in what is referred to as Basel III.

Muhammad and Mubarak (2013) indicate that commercial banks face many challenges, including protecting depositors' funds and increasing the confidence of those dealing with banks by applying the capital adequacy standard set by the Central Bank of Iraq.

On the relationship between capital adequacy and profitability indicators, a study by Fakhri and Qadeer (2016) clarifies the impact of capital, liquidity, exchange rates, inflation, and interest rates on the profitability of Iraqi commercial banks. Their research concludes that there is a positive correlation between paid-in capital and interest rates and bank profitability (return on equity (ROE); return on assets (ROA)) and a negative correlation between exchange rates, the inflation rate, and the volume of liquidity and bank profitability.

Najat (2016) uses capital adequacy as an indicator of bank solvency and uses three variables to measure the market value of bank shares: the profit rate index, the stock multiplier index, and the share price. The study concludes that applying the capital adequacy standard of a bank's solvency has no significant effect on the market value of its shares. However, Obaidat (2010) uses stock prices and the stock multiplier index and finds that capital adequacy has a positive impact on banks' profitability indicators; that is, there is a positive relationship between a bank's degree of capital

adequacy and its liquidity risk and ROA, and a negative relationship between the degree of capital adequacy and ROE, the interest rate risk, capital risk and credit risk. A similar later study by Al-tamimi and Obeidat (2013) arrived at the same conclusions for banks in Jordan. Their results study also shows that the ROA and ROE combined have a relatively large impact on capital adequacy, as their model's ratio is about 61%.

A study by Dahiyat (2016) examines the effect of liquidity and capital adequacy on bank solvency among banks listed on the Oman Stock Exchange. Their results show that liquidity has a major impact on banks' profitability while solvency has no impact on the profitability indicators of these banks.

Based on a framework and Literature Review of these studies, it was necessary to test the soundness of the Palestinian banking sector by linking capital adequacy with Palestinian banks' profitability indicators.

### 3 Research Methodology

#### 3.1 Research Sample

The study sample reflects the study population, which consists of seven banks listed on the Palestine Stock Exchange. Financial statements are available for the period 2010 to 2019 for these banks; Al-Safa Bank was excluded due to the lack of all the required data during the study period. Table 1 provides a list of the sample selection, the year each bank was established and its number of branches.

**Table 1** Sample selection

Bank	Number of branches	Year established
Arab Islamic Bank (AIB)	29	1996
Bank of Palestine (BOP)	77	1960
National Bank (NB)	41	2012
Palestine Investment Bank (PIBC)	22	1995
Al Quds Bank (Quds)	40	1995
Palestinian Islamic Bank (ISBK)	50	1997
Total	259	

Source: Palestinian Companies Directory, companies listed on the Palestine Stock 2021. Palestine Monetary Authority 2021

### 3.2 Study Hypothesis and Models

This study investigates the impact of capital adequacy on the profitability indicators of banks listed on the Palestine Stock Exchange. Three major factors are tested to determine their relation with banks' capital adequacy.

The study's hypothesis is as follows:

Ha1: Capital adequacy has no statistically significant effect on the profitability indicators of banks listed on the Palestine Stock Exchange.

The main hypothesis will be measured through the following sub-hypotheses: -

Ha1-1: Capital adequacy has no statistically significant effect on the return on assets of banks listed on the Palestine Stock Exchange.

Ha1-2: Capital adequacy has no statistically significant effect on the return on equity of banks listed on the Palestine Stock Exchange.

Ha1-3: Capital adequacy has no statistically significant effect on the earnings per share of banks listed on the Palestine Stock Exchange.

To test these hypotheses, we estimate the following three simple regression models:

$$ROA_{i,t} = \alpha + \beta_1 CA_{i,t} + \varepsilon_i$$

$$ROE_{i,t} = \alpha + \beta_1 CA_{i,t} + \varepsilon_i$$

$$EPS_{i,t} = \alpha + \beta_1 CA_{i,t} + \varepsilon_i$$

where the dependent variables are

ROA<sub>i, t</sub>: return on assets, which is the ratio of net income to total assets for Bank (i) in year (t);

ROE<sub>i, t</sub>: return on equity, the ratio of net income to total equity for Bank (i) in year (t);

EPS<sub>i, t</sub>: earnings per share, the ratio of net income to the number of outstanding common shares, for Bank (i) in year (t);

and the independent variable is

CA<sub>i, t</sub>: capital adequacy as measured by dividing (Primary Capital + Supplementary Capital) by total risky assets, for Bank (i) in year (t).

$\alpha$  is the constant;  $\beta_1$ , 2, and 3 is the slope of the independent variable; and  $\varepsilon_i$  is a random error.

### 3.3 Measuring the Variables

The variable selection is based on an examination of previous empirical studies where capital adequacy is defined as the ratio of total equity to total assets, and

**Table 2** The variables and their definitions and measurements

Variables	Abbreviations	Definitions and measurements
Independent variables		
Capital adequacy ratio	CA	Measures the extent to which banks rely on property rights in financing assets, and can be calculated as follows: Capital Adequacy = (Primary Capital + Supplementary Capital)/total risky assets. Wikipedia Encyclopedia (2017), Al-Mousawi (2018)
Dependent variables		
Return on assets	ROA	The ratio of net profits after interest and taxes on total assets. Haddad (2009)
Return on equity	ROE	The ratio of net profits after interest and taxes on total equity. Haddad (2009)
Earnings per share	EPS	Net income divided by the number of outstanding common shares. Haddad (2009)

profitability is measured by ROA, ROE and EPS. Table 2 shows the dependent and independent variables.

## 4 Empirical Study

The study data was obtained from the Palestine Stock Exchange database and then transferred to an excel spread sheet to define the variables. SPSS was used to test the study model and verify the hypothesis.

In this part of the study, two major issues will be discussed: the descriptive statistics and testing the hypothesis.

### 4.1 Descriptive Statistics

Table 3, presents the descriptive statistics of the capital adequacy ratio, return on assets, return on equity and earnings per share for our study sample of six Palestinian banks.

Table 3 shows that the capital adequacy ratio ranged from 0.106, in 2019, to 0.27, in 2015, a range that is within the permissible limits according to Palestinian Monetary Authority regulations. This is a positive indication of these banks' commitment to the safety and durability of the local banking system in Palestine.

With regard to return on assets, despite its relative stability, we note that this rose from 0.005 in 2010 to 0.0107 in 2016 and then slowly decreased in subsequent years. Here, it is possible emphasize the increase in management efficiency in regard to banks' assets; this also applies to the return on equity, which rose from 0.04 in

**Table 3** Descriptive statistics of six Palestinian banks

Variables	Year	Minimum	Maximum	Mean	Std. deviation
Capital adequacy ratio	2010	0.10607133	0.247693273	0.159377694	0.05201770781
	2011	0.116701004	0.26452405	0.156519152	0.0598144560
	2012	0.110239242	0.254878762	0.1593673521	0.053860039
	2013	0.036954226	0.26959220	0.112650184	0.0828280671
	2014	0.105394786	0.21386359	0.131081337	0.0408784761
	2015	0.095692944	1.000	0.27404527	0.358856908
	2016	0.092771433	0.226924068	0.1240794	0.05107873
	2017	0.09039024	0.205055675	0.113659742	0.04529124820
	2018	0.0852094951	0.2144738604	0.113896351	0.0497028306
	2019	0.080859646	0.198645557	0.106352520	0.04537252831
Return on assets	2010	-0.007945	0.0194943221	0.00510936	0.0092058590
	2011	0.00229694	0.020545030	0.0093923126	0.0066074051
	2012	0.00172837189	0.01913071088	0.009040588	0.00628281928
	2013	0.006790819	0.0172223337	0.0100321652	0.00422463419
	2014	0.0058234774	0.01581483371	0.010083445	0.00357328947
	2015	0.005251086	0.0154988448	0.0099842369	0.0043236038
	2016	0.0072625903	0.015453225	0.0107781034	0.003242942
	2017	0.0062780115	0.0149961932	0.0099811960	0.003003399
	2018	0.0061787368	0.0137012467	0.0098124196	0.00260271466
	2019	0.00645021595	0.011016323756	0.008247902	0.00163958726
Return on equity	2010	-0.0472604	0.183785012897	0.04619501	0.0801888910
	2011	0.0156025392	0.17479791461	0.0684782108	0.0594271690
	2012	0.011336005850	0.1735381211	0.06815359602	0.05998531363
	2013	0.02883048326	0.16045947	0.08112130	0.04568289
	2014	0.0412	0.13690287	0.073057306	0.038538551
	2015	0.0234	0.141182479	0.071365410	0.046225084
	2016	0.04233188873	0.139276781	0.1006412157	0.0414803443
	2017	0.0431164541	0.1382130421	0.09388397647	0.0363977683
	2018	0.0439693188	0.13778730274	0.095695700	0.0373518301
	2019	0.0453355533	0.125352759041	0.084540214	0.026914008
Earnings per share	2010	-0.051687	0.30119469	0.04726825767	0.1294146690
	2011	-0.039	0.28317227	0.0696045996	0.1125619062
	2012	-0.035	0.286174604	0.077210604	0.114559986
	2013	0.036954226	0.26959220	0.112650184	0.0828280671
	2014	0.05144534	0.2513906	0.1238972513	0.0750019062
	2015	0.03057104	2.00677634	0.4344003701	0.7738286482

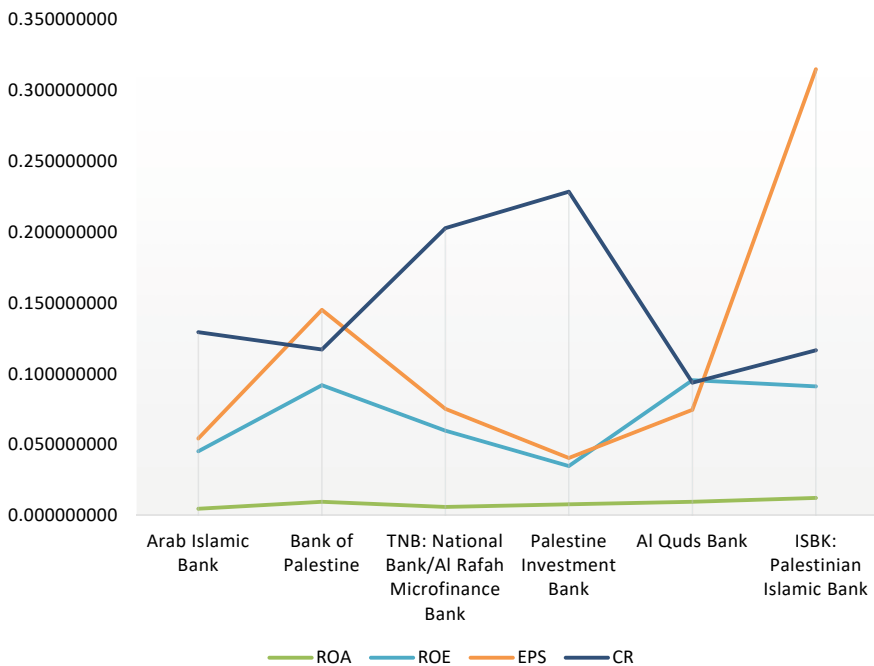
(continued)

**Table 3** (continued)

Variables	Year	Minimum	Maximum	Mean	Std. deviation
	2016	0.056849027	0.2720698310	0.15419994	0.077317621
	2017	0.057636147	0.27004464	0.151605474	0.0795860719
	2018	0.057897653	0.27055046	0.17052330	0.087216953
	2019	0.05794871794	0.2323076	0.1451856783	0.0621453584

2010 to 0.10 in 2016, with a slight decrease afterward. Earnings per share grew rapidly from 0.04 in 2010 to 0.43 2015, and then remained almost constant from 2016 onward. Hence, it can be said that local Palestinian banks achieved remarkable returns during previous periods, which is clearly reflected in profitability indicators, while also maintaining their capital adequacy requirements to satisfy shareholders and protect depositors.

Through Fig. 1, it is possible to compare the rates of profitability and capital adequacy indicators among the study banks. We note that the rate of return on assets was somewhat stable and ranged between (0.005–0.0012), while the highest rate of return on equity reached et al.-Quds Bank and Bank of Palestine ( 0.095, 0.091). The lowest ratio was for the Palestine Investment Bank and the Arab Islamic Bank (0.034, 0.045). The fluctuation was clear in the earnings per share ratio, as the highest



**Fig. 1** Profitability and capital adequacy indicators rates for the sample banks



ratio for the Palestine Islamic Bank reached (0.315), the lowest ratio for the Palestine Investment Bank was (0.040), While the capital adequacy ratio reached the highest ratio at the Palestine Investment Bank (0.228) and its lowest ratio with Al-Quds Bank (0.093).

## 4.2 Testing the Hypothesis

The main hypothesis questions the effect of capital adequacy on Palestinian banks' profitability indicators and will be tested through the following three sub-hypotheses.

Ha1-1: Capital adequacy has no statistically significant effect on return on assets.

Tables 4, 5, and 6 above, show the study's simple linear regression model (Model 1). Table 4 shows that the model can predict a small part of the dependent variable (ROA?), as the values of the three correlation coefficients reached ( $R = 0.200$ ) and the determination coefficient ( $R^2 = 0.040$ ) and the corrected coefficient of determination ( $R^2 * = 0.024$ ), which means that the independent variable "capital adequacy" explains 2% of the changes in the dependent variable "rate of return on assets" and the rest is attributed to other factors.

**Table 4** Model summary

Model	R	R square	Adjusted R square	Std. error of the estimate
1	0.200a	0.040	0.024	0.004762160185040

a. Predictors: (Constant), CA

**Table 5** ANOVA

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	0.000	1	0.000	2.428	0.125b
	Residual	0.001	58	0.000		
	Total	0.001	59			

a. Dependent Variable: ROA

b. Predictors: (Constant), CA

**Table 6** Coefficients

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Std. error	Beta		
1	(Constant)	0.010	0.001		10.870	0.000
	CA	-0.008	0.005	-0.200	-1.558	0.125

a. Dependent Variable: ROA

Table 5 represents the analysis of the variance through which the explanatory strength of the model can be determined by means of the F statistic. We also note the high significance of the F test, meaning that there is no statistically significant relationship between capital adequacy and return on assets, which is confirmed by the results shown in Table 7, where the statistical significance from the t-test ( $p = 0.125$ ) is greater than 0.05 and this indicates the same result. We also note that the Beta value =  $-0.2$ ; this indicates a negative relationship between the variables. This result is consistent with (Dahiyat 2016).

Ha1-2: Capital adequacy has no statistically significant effect on return on equity.

Tables 7, 8, and 9, above, show the study’s simple linear regression (Model 2). Table 7 shows that the model can predict a small part of the ROE as the values of the three correlation coefficients is ( $R = 0.286$ ), the determination coefficient is ( $R^2 = 0.082$ ) and the corrected coefficient of determination is ( $R^2 * = 0.066$ ), which means that the independent variable “capital adequacy” was able to explain 8% of the changes in the dependent variable “rate of return on equity” and the rest is attributed to other factors.

Table 8 represents an analysis of the variance, through which the explanatory strength of the model can be determined by means of the F statistic. Here, we note the small significance of the F test, which means that there is a statistically significant

**Table 7** Model summary

Model	R	R square	Adjusted R square	Std. error of the estimate
1	0.286a	0.082	0.066	0.046496768855075

a. Predictors: (Constant), CA

**Table 8** ANOVA

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	0.011	1	0.011	5.162	0.027b
	Residual	0.125	58	0.002		
	Total	0.137	59			

a. Dependent Variable: ROE

b. Predictors: (Constant), CA

**Table 9** Coefficients

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Std. error	Beta		
1	(Constant)	0.095	0.009		10.134	0.000
	CR	-0.111	0.049	-0.286	-2.272	0.027

a. Dependent Variable: ROE

relationship between capital adequacy and the return on equity. Table 9 shows the results of the t-test that confirms this finding. It shows that as the statistical significance is less than 0.05 ( $p = 0.027$ ), this indicates the same result: That there is a statistically significant relation between capital adequacy and return on equity. We also note that the Beta value for =  $-0.286$ , which indicates the negative relationship between these two variables. This result is consistent with the studies by (Najat 2016); (Obaidat 2010); and (Al-tamimi and Obeidat 2013).

Ha1-3: Capital adequacy has no statistically significant effect on earnings per share.

Tables 10, 11, and 12 provide the data for the simple linear regression in model 3. Table 10 shows that the model can predict a very small part of the dependent variable as the values of the three correlation coefficients are ( $R = 0.135$ ), the determination coefficient is ( $R^2 = 0.018$ ) and the corrected coefficient of determination is ( $R^2 * = 0.001$ ), which means that the independent variable capital adequacy explains 0.1% of the changes in the dependent variable earnings per share and the rest is attributed to other factors.

Table 11 represents an analysis of the variance through which the explanatory strength of the model can be determined by means of the F statistic. We also note the high significance of the F test, meaning that there is no statistically significant

**Table 10** Model summary

Model	R	R square	Adjusted R square	Std. error of the estimate
1	0.135a	0.018	0.001	0.260950851233641

a. Predictors: (Constant), CA

**Table 11** ANOVA

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	0.073	1	0.073	1.071	0.305b
	Residual	3.950	58	0.068		
	Total	4.022	59			

a. Dependent Variable: EPS

b. Predictors: (Constant), CA

**Table 12** Coefficient

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Std. error	Beta		
1	(Constant)	0.190	0.052		3.631	0.001
	CR	-0.284	0.275	-0.135	-1.035	0.305

a. Dependent Variable: EPS

relationship between capital adequacy and earnings per share. This is confirmed by the results shown in Table 12, where the statistical significance from the t-test ( $p = 0.305$ ) is greater than 0.05 and thus indicates the same result. We also note that the Beta value is  $= -0.135$ , this indicates a negative relationship between capital adequacy and earnings per share. This result is consistent with Dahiyat (2016).

## 5 Conclusion and recommendation

### 5.1 Conclusion

The study aimed to identify the effect of the capital adequacy on the profitability indicators of six banks listed on the Palestine Exchange during the period 2010 to 2019. Three dependent variables were selected: return on assets, return on equity and earnings per share. The descriptive statistical analysis indicates that there is a clear variation in the capital adequacy ratio with fluctuation in the rate of return on equity and earnings per share among banks despite the relative stability in the rate of return on assets. Three hypotheses were put forward and tested. A negative relationship was found between the capital adequacy ratio and the return on equity. This confirms the weakness of achieving a balance between the safety factor by avoiding investing in risky assets to maintain high liquidity that faces operational risks, credit risks, market risks, and returns on investments, especially financed by owners, and this agrees with the scientific truth. Low risks are offset by low returns. The results also show that the capital adequacy ratio for local banks in Palestine (Primary Capital + Supplementary Capital)/total risky assets, a ratio that measures banks' ability to withstand risks) reached a percentage that is higher than the minimum set according to the Basel Convention. This reflects the strength of the Palestinian banking sector, The researcher believes that the exceptional political and economic conditions of the Palestinian environment, which are characterized by instability, require banks to maintain a high rate of capital adequacy.

### 5.2 Recommendations, Study Limitation and Future Studies

Based on the results, we recommend that local banks listed on the Palestine Exchange re-balance according to the requirements of the Palestinian Monetary Authority and hedge against potential risks without affecting shareholder returns. The study also recommends that the Palestinian Monetary Authority complete the application of Basel III requirements regarding capital components and the financial leverage ratio. After directly implementing the Basel III, requirements for liquidity management in 2018. This study is considered limited due to the small sample size taken from the Palestine Stock Exchange; therefore, these results may not be generalized to other

banks in other countries. More variables could be studied and foreign banks operating in Palestine could be added to the sample.

**Acknowledgements** The author is thankful to Palestine Technical University—Kadoorie for funding this research.

## References

- Al-maqtari, F.A., Al-Homaidi, E.A., Tabash, M.I., Farhan, N.H.: the determinants of profitability of Indian commercial banks. *Int. J. Financ. Econ.* **24**(1), 168–185 (2018). <https://doi.org/10.1002/ijfe.1655>
- Alper, D., Anbar, A.: Bank specific and macroeconomic determinants of commercial bank profitability. Empirical evidence from Turkey. *Bus. Econ. Res. J.* **12**(2), 139–152 (2011). ISSN 1309-2448. [https://www.researchgate.net/publication/227489043\\_Bank\\_Specific\\_and\\_Macroeconomic\\_Determinants\\_of\\_Commercial\\_Bank\\_Profitability\\_Empirical\\_Evidence\\_from\\_Turkey/citations](https://www.researchgate.net/publication/227489043_Bank_Specific_and_Macroeconomic_Determinants_of_Commercial_Bank_Profitability_Empirical_Evidence_from_Turkey/citations)
- Al-Khatib, M.: Financial Performance and its Impact on the Returns of Shares of Joint Stock Companies. Dar Al-Manhal for Publishing and Distribution, Jordan (2010)
- Al-Rubaie, H., Radi, H.: Banking Governance and its Impact on Performance and Risk. Al-Yazoury House for Publishing and Distribution, Cairo (2012)
- Al-Taie, S., Abdul-Hadi, S.: Measuring the level of profitability of Islamic banks and analyzing them in light of the global financial crisis, an analytical study of Al-Baraka banking group for the period 2004–2010. *Tikrit J. Adm. Econ. Sci.* **9**(28), 114–132 (2013)
- Arab International Economic Newspaper, what is meant by the concept of bank capital adequacy? 9 January 2018. [http://www.aleqt.com/2011/04/23/article\\_530068.html](http://www.aleqt.com/2011/04/23/article_530068.html). Accessed 1 Apr 2021
- Al-Shammari, S.: Risk Management Strategy, 4th edn. Al-Yazouri Scientific Publishing and Distribution House, Amman (2016)
- Al-Jamil, S.: Introduction to Financial Institutions Management Theories and Applications. Dar Al-Manhal for Publishing and Distribution, Amman (2017)
- Al-Ali, A., Dawood, M.: The impact of capital adequacy determinants on the performance of Syrian commercial banks. *Al-Baath Univ. J.* **39**(23), 131–159 (2017). <https://docplayer.gr/82166339-thr-mhddt-kfy@-r's-lml-%60l~-d-lmsrf-ltjry@-lswry@-lmsrf.html>
- Al-tamimi, K., Obeidat, S.: Determinants of Capital Adequacy in Commercial Banks of Jordan an Empirical Study. *Jordan Int. J. Acad. Res. Econ. Manag. Sci.* **2**(4), 44–58 (2013). [https://www.researchgate.net/publication/315453809\\_Determinants\\_of\\_Capital\\_Adequacy\\_in\\_Commercial\\_Banks\\_of\\_Jordan\\_an\\_Empirical\\_Study](https://www.researchgate.net/publication/315453809_Determinants_of_Capital_Adequacy_in_Commercial_Banks_of_Jordan_an_Empirical_Study)
- Al-Moussawi, H.: Islamic Banks, Their Financial Performance and Impact on the Market. Dar Al-Manhal for Publishing and Distribution, Amman (2018)
- Al-Harith, M., Hazouri, H.: Credit risks and their impact on the adequacy of banking capital “an applied study”. *J. Al-Quds Open Univ. Res. Stud.* **2**(43), 244–252 (2018)
- Dang, U.: The CAMEL rating system in banking supervision “A case study”. Published Master’s thesis, Arcada University of Applied Sciences-International Business (2011). [https://www.the.seus.fi/bitstream/handle/10024/38344/Dang\\_Uyen.pdf](https://www.the.seus.fi/bitstream/handle/10024/38344/Dang_Uyen.pdf)
- Financial and Banking Highlights: Basel III, an awareness newsletter issued by the Institute of Banking Studies, fifth series, No. 5, Kuwait, p. 27 (2012). [http://www.kibs.edu.kw/upload/EDAAT\\_Dec\\_2012\\_Basel\\_III\\_404.pdf](http://www.kibs.edu.kw/upload/EDAAT_Dec_2012_Basel_III_404.pdf)
- Qader, A., Brish, Greyh, Zahar: Basel 3 and its role in realization good-governance principles. *J. Econ. Financ.* **1**(1), 97–118(2015). [https://www.univ-chlef.dz/ref/wp-content/uploads/2015/11/V2015\\_00\\_8.pdf](https://www.univ-chlef.dz/ref/wp-content/uploads/2015/11/V2015_00_8.pdf)

- Haddad, F.: *Fundamentals of Financial Management*, 2nd edn. Dar Al-Hamid for Publishing and Distribution, Amman (2009)
- Hassan, M.: Measuring the solvency of Islamic banks in the framework of the new standard for capital adequacy. A Working Paper Presented to the Third World Conference on Islamic Economics, pp. 8–32. Umm Al-Qura University, Makkah Al-Mukarramah (2016)
- Najat, B.: The Impact of banking solvency on the market value of the bank's shares, a study of a sample of banks listed on the Qatar stock exchange during the period (2005–2015). A Master Thesis Published, College of Economic Sciences, Commercial Sciences and Management Sciences, Qasidi Merbah and Ouargla University, Algeria (2016). <https://dspace.univ-ouargla.dz/jspui/bitstream/123456789/15179/1/blhasini-nadjet.pdf>
- Fakhri, S., Qadir, A.: Banking profitability and factors affecting it an empirical study in a sample of the Iraqi commercial banks. *J. Kirkuk Univ. Adm. Econ. Sci.* **6**(2), 145–170 (2016). <https://www.iasj.net/iasj?func=fulltext&aId=115759>
- Khasawneh, A.S., Obeidat, Z.M.: The impact of capital risk on the financial performance of the Jordanian Islamic banks according to Basel (2) during the period (2007–2013). *Int. J. Adv. Res.* **4**(2), 182–193 (2016). [https://www.journalijar.com/uploads/62\\_IJAR-8752.pdf](https://www.journalijar.com/uploads/62_IJAR-8752.pdf)
- Muhammad, S., Mubarak, M.: Measuring the adequacy of money “in the civil arc”, an applied study in the investment and finance bank. *J. Baghdad Coll. Econ. Scie.* **30**(4), 23–35 (2013). <https://www.iasj.net/iasj?func=fulltext&aId=72650>
- Odekina, I.I., Gabriel, A.O., Solomon, T.T.: Effect of capital adequacy, credit risk and operating efficiency on the performance of commercial banks in Nigeria. *Financ. Mark. Inst. Risks* **3**(1), 106–114 (2019). <https://core.ac.uk/download/pdf/324276203.pdf>
- Obaidat, S.: Determinants of capital adequacy in Jordanian commercial banks, an applied study. Published master's thesis, Department of Administrative and Financial Sciences, Irbid College, Balqa University, Jordan (2010). <https://ketabonline.com/ar/books/104106/read?page=1&part=1>
- Rice, M.: *The Implications of Financial Globalization on the Banking System*. Dar Al-Jinan for Publishing and Distribution, Amman (2015)
- Dahiyat, A.: Does liquidity and solvency affect banks profitability? Evidence from listed banks in Jordan. *Int. J. Acad. Res. Account. Financ. Manag. Sci.* **6**(1), 35–40 (2016). <https://doi.org/10.6007/IJARAFMS/v6-i1/1954>. [https://www.researchgate.net/publication/306039744\\_Does\\_Liquidity\\_and\\_Solvency\\_Affect\\_Banks\\_Profitability\\_Evidence\\_from\\_Listed\\_Banks\\_in\\_Jordan](https://www.researchgate.net/publication/306039744_Does_Liquidity_and_Solvency_Affect_Banks_Profitability_Evidence_from_Listed_Banks_in_Jordan)
- Palestinian Companies Directory, companies listed on the Palestine Stock, 27 January 2021  
Palestine Monetary Authority, 27 January 2021. <http://www.pma.ps/ar-eg/home.aspx>  
Wikipedia Encyclopedia, 27 January 2021

# Market Reaction to an Audit Firm Change Decision



Dorine Mattar , Rim El Khoury , and Melissa Chaanine

**Abstract** This research aims to test the market reaction following the audit firm change announcement. The sample includes all UK companies listed on the London Stock exchange that have announced changing their auditors between March 2013 and February 2018. The companies' daily stock prices as well as the market index daily value are collected from the Eikon DataStream. Using the event study methodology, a positive market reaction one day following the switch to a Big N auditor has been observed. The originality of this study lies in its context, as the UK audit market is currently the subject of considerable media attention with the debate of the merits of breaking up the big 4 audit firms considering the demise of the construction giant Carillion, while including the long period windows. The findings help stakeholders better understand the audit firm change context before taking any strategic decision.

**Keywords** Audit firm change · Big N · Event study methodology · Market reaction

## 1 Introduction

Audit firm change has been the focus of attention of academics, practitioners, and regulators for several years. On one side, audit firm change might be the result of the opinion shopping theory where poorly performing companies decide to change their auditors to avoid receiving unfavorable audit reports (Chow and Rice 1982). Thus, the market is expected to react negatively when there is an auditor switch, regardless of the type.

On the other side, the decision to change auditors might be triggered by the search for a higher quality auditor that will send a positive sign to the investors and

---

D. Mattar · R. El Khoury (✉) · M. Chaanine  
Notre Dame University, Louaize- 72 Zouk Mikayel, Zouk Mosbeh, Lebanon  
e-mail: [rkhoury@ndu.edu.lb](mailto:rkhoury@ndu.edu.lb)

D. Mattar  
e-mail: [dhaddad@ndu.edu.lb](mailto:dhaddad@ndu.edu.lb)

M. Chaanine  
e-mail: [mchaanine@ndu.edu.lb](mailto:mchaanine@ndu.edu.lb)

to the market. Accordingly, auditor's quality is important, since a brand name auditor is more likely to have a better monitoring (Dunn et al. 1999). Thus, the market is expected to react positively when the switch is to a brand name auditor and negatively when the switch is from a brand name auditor.

In the United States, the Public Company Accounting Oversight Board (PCAOB) and the Security Exchange Commission (SEC) expressed their confidence in the skills of smaller accounting firms and motivated smaller companies to hire them. Despite this encouragement, the audit market continues to be dominated by the Big N auditors since companies are still perceiving brand name auditors as providers of higher quality audit services when compared to smaller accounting firms. This perception explains the negative market reaction following a switch to a non-Big N firm (Knechel et al. 2007).

In UK, public and private companies are required, under the Companies Act, to have their accounts audited externally. Although there are many audit firms that can carry out these auditing services, the market is dominant by the branded international network of audit companies, known as Big N. The term Big N dated back to the 1980s. Originally, the Big N audit firms were known as the 'Big Eight', then as the 'Big Six' in 1989 following two mergers. In 1998, another merger took place which made them the 'Big Five'. In 2002, only 'Big Four' audit firms remained following the Enron scandal and the demise of Arthur Andersen. They are PricewaterhouseCoopers (PwC), KPMG, Ernst & Young (EY) and Deloitte. In addition to the Big Four, the UK audit market embraces many smaller audit firms and several challenger firms (such as Grant Thornton, Mazars, BDO, RSM, and Moore Stephens) who have international networks of firms.

Even though Big N auditors are known for their quality, there were many scandals, both in UK and elsewhere. There have been a number of cases in which external auditors failed to inform about imminent business' failure, necessitating the need for a going-concern opinion (Alareeni 2019a; Alareeni and Branson 2011). In 2002, Enron, the seventh largest company in the US, filed for bankruptcy because of flawed accounting. In response to this failure, many reforms were put in place such as Sarbanes-Oxley Act (2002) in US, often referred to as SOX. The Act included establishing standards for external audit independence, introducing audit partner rotation, and restricting auditors from providing non-audit services for audit clients. The Act also established an oversight board (the PCAOB). These reforms failed the test in 2008. The Global Financial Crisis in 2007–2008 and the failure of many banks highlighted some serious shortcomings and raised questions about the effectiveness of auditors. According to Parliamentary Commission on Banking Standards, auditors fell down of their duties to ensure the provision of accurate information to shareholders and to inform their users about the financial condition of banks (Parliamentary Commission on Banking Standards 2013).

Following the financial crisis, regulators, governments, and authorities made many attempts to improve the audit market. In UK, the Competition Commission (CC) had set an Order that came into force on January 1st, 2015. The CC conducted an audit market investigation between 2011 and 2013 and suggested several remedies to reduce the negative effects of competition. These remedies included mandatory



tendering of audit contracts by the FTSE 350 companies (which refer to FTSE 100 and 250 collectively) at least every ten years, better review of audits by the Financial Reporting Council (FRC), greater shareholder engagement with the management on audits, and greater accountability of auditors to Audit Committees, mandatory switching of audit contracts for Public Interest Entities (PIEs) (at least every twenty years) (Competition Commission 2013). Like CC in UK, the European Commission (EC) introduced legislative changes, effective June 2016. This legislation closely mirrored CC's remedies. Furthermore, the Statutory Auditors and Third Country Auditors Regulations (SATCAR 2016) came into effect in June 2016. SATCAR 2016 selected the FRC as the UK's Competent Authority responsible for public oversight of statutory auditors. SATCAR 2016 modified the Companies Act 2006 as well, to reflect the EU reforms, comprising the process for auditor appointments, retendering and rotation (Financial Reporting Council 2016).

Despite these remedies, several failures took place in recent years. A recent one happened in early 2018 in UK, when Carillion, a British multinational management and construction services company, audited by KPMG, collapsed. Furthermore, in the same year, FRC audit quality review reported a decline in the quality of the Big Four (Financial Reporting Council 2018a).

Nowadays, the audit market in the UK has changed significantly with a much higher rate of tendering and switching of auditors than previously. The overall annual audit switching rate for FTSE350 increased significantly since the introduction of the CC remedies, from 6% in 2013 to 14% in 2015, before falling to less than 3% in 2018. Such changes were almost between the four largest auditors. Another supporting indicator of the increased rate of auditor rotation is the reduction in the length of current auditor engagements between 2012 and 2017. According to FRC, there was a significant increase in the number of auditor with a tenure of less than five years (from 22% in 2012 to 47% in 2017) (Financial Reporting Council 2017).

The UK market was and is still dominant by the Big Four. Beattie et al. (Beattie et al. 2003) found that the market share of the Big Four firms in the UK market increased following the Enron collapse from 67 to 73% based on the number of audits, and from 90 to 96% based on the value of audit fees. The Competition Commission (CC) found that between 2001 and 2010, the Big Four firms had a share of over 95% of the audits of FTSE 350 and over 99% of the audit fees of FTSE 350 companies. Recently, in 2016/2017, 97% of the companies listed on FTSE 350 are audited by the Big Four auditors (Financial Reporting Council 2017). The Big Four firms represent 84% of all UK PIEs in 2017 (Reporting and Council: Key facts and trends in the accountancy profession 2018b). The high combined share of the Big Four firms is also reflected in the share of audit fees. Each of the Big Four firms received between 20 and 35% of the audit fees paid by FTSE 350 companies in 2018, while the challenger firms combined had less than a 1% share. Furthermore, the audit fees paid depended on the sector, with the Financial and the Insurance activities representing the largest one (34% of total fees paid), followed by the manufacturing (17%).

The UK audit market is currently the subject of considerable media attention with the debate on the merits of breaking up the Big 4 audit firms considering the Carillion demise. As such, this study can provide some insight into the market perception of

Big 4 audit firms in the UK market as means of contributing to this debate. This study sheds light on the market reaction following an audit firm change in the UK market, to better understand the investors' attitudes towards and perception of the categorization of the audit firms between Big N and smaller ones, and the difference in the quality of audit services offered. Moreover, results will highlight the extent to which the new reforms were able to act as a cushion safeguarding the quality of the audit services regardless of the provider, and the extent to which the new scandals were able to deteriorate the reputation of Big Four auditors.

The rest of this paper proceeds as follows. Section 2 presents the literature review, while Sect. 3 describes the data, variables, and the model. Sections 4 and 5 presents and discusses the findings respectively, while Sect. 6 concludes the paper.

## 2 Literature Review

The audit firm choice is a critical decision that might affect every stakeholder in the company. The auditors act as mediators between the management and the shareholders, and safeguard that the published financial statements are trustworthy. Their ability to take role in corporate governance makes the auditor's choice decision so critical (Houghton and Jubb 2003).

Many theories discussed the audit firm change decisions. First is the agency theory, which is based on the agency relationship that arises when the ownership and the management are separated. While the owners expect the managers to work for their best interest and maximize their wealth, managers take the role of "satisfiers" rather than "maximizers". They play it safe in taking growth opportunities because preserving their positions in the company is more important than satisfying the owners' needs (Simon 1959). Farooq and Tabine (2015) found that the presence of high agency problems is positively related to the choice of a Big N auditor. More specifically, a low dividend payout ratio, a high ownership concentration and a high complexity intensify the principle-agent conflict and thus alarm the need for a high-quality auditor to mitigate the problem. Second is the signaling theory, which assumes that companies decide to switch to a brand name auditor to send a signal about an optimistic future vision for the shareholders (Teh et al. 2016). Choosing high quality auditors shows that the managers are working for the shareholders' best interest and they are mitigating all signs of the agency problem (Houghton and Jubb 2003). Third is the opinion shopping theory, which assumes that when the company is struggling financially, it searches for a new auditor to avoid receiving unfavorable audit reports from its current auditor (Chow and Rice 1982). Fourth is the assurance theory, which assumes that companies, that have previously issued unreliable financial reports, change their auditors in order to strengthen back their position (Teh et al. 2016).

Literature relates the causes of auditor switching to three wide categories: auditor-initiated resignation, client-initiated change, or mandatory legal requirements for auditor rotation. In the case of non-mandatory auditor switching, changes in auditor

are caused by different factors such as the growth of a client-firm (Johnson and Lys 1990), client-firm financial distress (Hudaib and Cooke 2005), opinion shopping (Chow and Rice 1982; Lennox 2000) and disagreements with auditors over reporting issues (Magee and Tseng 1990). However, determining the accurate intention behind this auditor change is not as easy as it seems. In some situations, the reason provided for the change may actually disguise the true underlying cause (Krishnan 1994). Given the different reasons behind an auditor change, the capital markets' reaction and the following effect on stock prices might not be accurately forecasted (Shu 2000). For instance, Johnson and Lys (Johnson and Lys 1990) failed to find a significant reaction to auditor changes in case of voluntary auditor realignments. However, in the case of auditor resignations, a negative reaction in stock prices was reported (Wells and Loudder 1997).

For publicly listed firms in the US, the reason for a switch (Fried and Schiff 1981) and the side that initiated it (auditor resignation or client dismissal) is often revealed to researchers via a form 8-K (Stefaniak et al. 2009). However, this is not the case in UK. UK auditors change information, especially information on the party initiating the change, is not readily available from Companies House based databases. To add, switching auditor can result in extensive costs for both, the firm, and the auditor. DeAngelo (DeAngelo 1982) argues that the low rate at which firms change auditors is a proof of these substantial switching costs. Thus, in addition to the inherent difficulties in finding out the true reason for the change, concerns might be raised by both regulatory bodies and shareholders as to the true underlying reason for the switch (Kwon and Pan 2010). As a result, switching auditor may influence the company's stock price or cost of capital.

Big N auditors are known for their professionalism and for the quality of services they offer (Alareeni 2019b). They have much to lose if they tend to lower the quality of the auditing services offered (Houghton and Jubb 2003). However, after the dismissal of the giant auditing firm Arthur Andersen and the widespread accounting failures, the public perception of the Big firms' professionalism and credibility have changed (Agrawal and Chadha 2005). When it comes to quality, some scholars documented similar audit services offered by the Big N and the non-Big N audit firms, and others even argued that non-Big N provide better audit services. Gaeremynck and Willekens (Gaeremynck and Willekens 2003) stated that Big N firms are considered to be sometimes stricter in their reports. Chang et al. (2010b) found that a switch from a Big N to a smaller auditor creates a positive market reaction, especially when the latter is an industry specialist.

The evidence regarding the market reaction to an audit firm change is mixed, and the impact is reported to be negative in some places, positive in other ones, or even neutral. Some scholars found that regardless of the circumstances, the auditor's type, or the companies' size; audit firm change decisions are perceived by the public as a negative signal since companies switching their auditors are considered riskier, with poorer economic performance. Consequently, the companies' stock return slumps following any change announcement (Dunn et al. 1999; Fried and Schiff 1981). This

immediate rejection from the public is believed to be the result of the “opinion shopping” associated with each audit firm change announcement. Furthermore, Eisenhardt (Eisenhardt 1989) and Teh et al. (Teh et al. 2016) have all supported the same argument and reported a negative market reaction following the audit firm change decision in general. They explained that the audit firm change signals a doubt concerning the credibility of the financial statements which causes the share price to decline and the cost of capital to increase following the announcement. Whisenant et al. (2003) reported a significant negative market reaction over a three-day window and a seven day-window for all audit switches that are caused by a lack of internal control and unreliable financial reports during the predecessor auditor’s tenure.

Prior to the SOX act, Big N auditors were perceived to provide better audit quality but at the expense of higher audit fees. Consequently, the empirical evidence did not converge on a single sign. When the public outweighed the quality over the higher fees, the market reacted positively to a change to a Big N (Knechel et al. 2007; Huson et al. 2000) and negatively to a change to a non-Big N (Dunn et al. 1999; Knechel et al. 2007; Eichenseher et al. 1989). Thus, the results suggest that the market still reacts more favorably to the Big N auditor shift and less favorable to a Non-Big N (Chan et al. 2011).

On the other hand, when the public outweighs the negative impact of the higher audit fees over the better audit quality provided by Big N, the market is expected to react negatively to a Big N shift and positively otherwise. For example, in their study that extended from 1993 to 1996 (i.e. preceding the SOX/Andersen era), Sankaraguruswamy and Whisenant (Sankaraguruswamy and Whisenant 2004) found that, using a seven-day window, the market reacted positively to the change from Big N to non-Big N auditor, when the auditor switches are motivated by better services and/or lower fees.

Within the same context, when the public perceives an equal trade-off between the higher audit quality and the higher audit fees, the market is not expected to react. Consequently, the public does not show any significant reaction to such announcements and the opinion shopping becomes a minor factor for audit firm change especially after the SOX regulations (Klock 1994; Davidson et al. 2006). Several scholars have failed to report any reaction following the audit firm change announcement (Johnson and Lys 1990; Fried and Schiff 1981; Klock 1994).

After the enactment of the SOX act, the market perception in the USA has changed. More specifically, non-Big N are now associated with better services and lower fees. More IPOs are now relying on smaller accounting firms, and investors became more receptive to such firms (Reilly 2006). Moreover, the audit quality difference between Big N and non-Big N is expected to converge over time (Choi et al. 2008). If this is the case, then a non-Big N auditor is an optimal choice for companies to avoid paying higher fees, while at the same time, maintaining acceptable level of audit quality. As for the empirical evidence, if the market does not longer see a significant drop in the audit quality while switching to a non-Big N, the negative market reaction previously observed should not exist. Rather, a positive market reaction following the switch to a non-Big N should be found due to a perceived positive benefit associated from lower audit fees and similar audit quality. Empirically, Chang et al. (2010a) extended the

study of Sankaraguruswamy and Whisenant (2004) by examining the auditor switch following the SOX act, and by controlling the quality of the auditor switch. They found that the positive market reaction is more pronounced when companies are switching from a low-quality Big N to a non-Big N, particularly when the latter is considered a specialist that provides better services. Furthermore, they reported a nonnegative market reaction to switches from a Big N auditor to a small auditor, to a medium 2 and to another Big N in the post-SOX 404/PCAOB inspection era. Thus, after intended improvements in the financial reporting and audit quality, the market does not perceive an audit quality drop when companies switch from a “low-quality” Big N auditor to a small auditor, suggesting that smaller audit firms do not necessarily deliver inferior audit quality (Chang et al. 2010a).

The findings related to the market reaction following the audit firm change decisions are depending on the period. Studies conducted prior to the SOX act led to various outcomes. In some studies, the public seems to be convinced by the opinion shopping assumption, as it is translated in a negative market reaction, regardless of the successor auditor’s type. In other research, the public showed a favorable reaction to Big N auditors, which is reflected in both positive reaction to the switch to a Big N, and a negative reaction to the switch to a non-Big N; thus, fortifying the fact that Big N auditors are still perceived to be high audit quality providers. Other studies showed a non-favorable reaction to Big N auditors, which means that Big N auditors are associated with higher fees. However, the market perception has changed in US following SOX act, and there was a decline in the perceived quality difference between Big N and Non-Big N, which is translated into a positive market reaction to the switch to a non-Big N, associated with lower fees without compromising the quality. Thus, the results suggest that SOX attempt to reduce the dominance of the Big N and to improve the audit quality offered by the Non-Big N was successful.

Despite all the reforms, few studies were conducted in UK to test the market reaction following an audit firm change decision. Results suggest that reputation and quality were the main reasons behind audit firm change decisions in UK (Beattie and Fearnley 1995) and there is negative market reaction to audit firm resignations in the UK market (Dunn et al. 1999). As such, it is still unclear how the market is reacting to an audit change decision in UK, given the regulatory change in the Companies Act (2004). Thus, this study provides evidence relevant to understanding the perceptions of audit firms outside the US setting and has the potential to contribute to a topical debate given the current climate of the audit market in the UK.

### 3 Research Methodology

This paper focuses on testing the market reaction following an audit firm change announcement. The market reaction is observed through the stock returns behavior of companies announcing the change of their auditors. Thus, the objectives of this research are to find out (1) the immediate market reaction (over a 7-day event window  $[-3, +3]$ ) following the release of the audit firm change news, as well as (2) the impact

several days following the auditor change announcement, measured over a 17-day period after the event window period (+3, +20]. Moreover, and more precisely, this study aims to test the market reaction following the shift to a Big N auditor (measured over a 7-day event window [-3, +3] and over a 17-day period (+3, +20]).

The research questions are tested using the Event Study methodology, which is elaborated in the upcoming sections.

### ***3.1 Data***

The sample includes all listed UK companies that changed their auditors from March 2013 till February 2018. A list of 157 companies that announced a change of an auditor is collected. Out of the 157 companies, 11 are reappointment cases and eight are closed end funds, resulting in 138 companies. However, some companies had missing data because they have been merged, acquired, or delisted, which limited the sample to 120 companies in the Event Study analysis. The data is secondary in nature, collected from the Eikon DataStream. More specifically, the daily stock prices of each company and of the market index are obtained 103 days prior the announcement date and 20 days following the event date from the Eikon DataStream.

### ***3.2 Variables***

The main parameter is the return, calculated from the stock prices using the following formula:

$$R_t = \ln(P/P_{t-1}) \quad (1)$$

Where  $R_t$  is the actual return at time  $t$ ,  $P_t$  is the current price at time  $t$  and  $P_{t-1}$  is the price of the previous trading day. Stock prices are adjusted for any splits. To improve the credibility of the results, we made sure that no firms were involved in a trading halt and the previous trading day is the previous day unless there is a weekend/holiday. Besides the actual return, the normal return, the abnormal return, and the cumulative abnormal return are all defined and calculated in the next part following the 3<sup>rd</sup> step of the Campbell 7-step process of the event study.

### ***3.3 Research Model***

To test the market reaction to an audit firm's change announcement, an Event Study methodology is applied and the cumulative abnormal return (CAR) over specific event windows is measured and tested as explained below to detect the effect of such

news on the companies' stock returns. The Event Study methodology goes back to the year 1933 when Dolley conducted for the first time a study on the market reaction to the stock split announcement. Since that date, this methodology has been extensively used in accounting and finance, as well as in management, marketing, economics, law, history and many other fields (Corrado 2011). It was also used to test the market reaction to audit firm change announcements (Knechel et al. 2007; Klock 1994; Davidson et al. 2006; Lin et al. 2009).

The Event Study follows seven steps: (1) the event definition, (2) the criteria selection, (3) the calculation of normal and abnormal return, (4) the estimation procedure, (5) the testing procedure, (6) the empirical results, and (7) the interpretation and conclusion (Campbell et al. 1997).

**Step 1: The Event Definition.** In the first step, it is required to select the event and the 'event window'. The event is the audit firm change announcement and the event window is the time period during which the event happened. Even though shorter windows are less likely to be affected by confounding events, they cannot capture the true reaction of some complex events (Oler et al. 2008). Some short period analysis generated incorrect conclusions; many market reactions were thought to be positive over the short-run, but then proved the opposite when longer periods are observed. In this study, a 7-day window is adopted, including a  $[-3, +3]$  days around the event date and the event date at time  $t = 0$ . The event window is divided into smaller time periods to detect the time where the cumulative abnormal return shows the highest significance level. Furthermore, a post-event window  $(+3, +20]$  is extended to observe the return behavior over a total of 20 days following the date of the announcement  $t = 0$ .

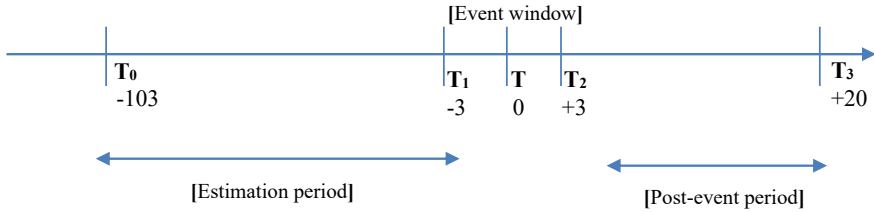
**Step 2: The Criteria Selection.** In this study, the objects of this research are UK companies that changed their auditors between March 2013 and February 2018 and that are listed on London Stock Exchange. Following these criteria, the final sample includes only 120 companies after excluding: the companies that have reappointed the same auditor (11), the closed end funds (8), and companies that have been merged, acquired, or delisted (18).

**Step 3: The Calculation of Normal and Abnormal Return.** The abnormal return is the difference between the actual return of security  $i$  in the event window and the normal that could be generated assuming that the event did not take place, calculated as follows (Campbell et al. 1997):

$$AR_{i,t} = R_{i,t} - K_{i,t} \quad (2)$$

$AR_{i,t}$  is the abnormal return,  $R_{i,t}$  is the actual return, and  $K_{i,t}$  is the normal return.

The normal return can be calculated using the statistical and the economic models. The statistical model includes the mean adjusted return, the market adjusted model, and the market model, while the economic model, on the other side, includes the Capital Asset Pricing Model (CAPM) and the Arbitrage Pricing Theory (APT) (Campbell et al. 1997).



**Fig. 1** Event study windows. *Source* Campbell et al. (1997)

First, according to the *constant mean return* or the mean adjusted return, the normal return of security  $i$  is equal to the mean return of that security in the estimation period ( $T_0$ – $T_1$ , Fig. 1), knowing that the mean return is a constant value.

$$AR_{it} = R_{it} - \bar{R}_j \quad (3)$$

Second, the *market adjusted model* assumes that the normal return of the security  $i$  is equal to the return of the market at the same period (Campbell et al. 1997). Thus, the abnormal return in this case is

$$AR_{it} = R_{it} - R_{market} \quad (4)$$

Third, according to the *market model*, there is a linear relation between the return of the security  $i$  and the market return (which is a return of an index in the industry of focus) (Campbell et al. 1997). The normal return at time  $t$  is found by applying the following formula:

$$K_{it} = \alpha_i + \beta_i R_{mt} + \epsilon_{it} \quad (5)$$

The parameters of the model  $\alpha$  and  $\beta$  are found by running a regression in the estimation period between the return of the security  $i$  and the market return (Campbell et al. 1997).

The second category of estimating abnormal returns consists of the economic models, mainly Capital Asset Pricing Model (CAPM) and the Arbitrage Pricing Theory (APT). CAPM is an “equilibrium theory where the expected return of a given asset is a linear function of its covariance with the return of the market portfolio” (Campbell et al. 1997), while APT is an “asset pricing theory where in the absence of asymptotic arbitrage the expected return of a given asset is determined by its covariances with multiple factors” (Campbell et al. 1997).

Even though the constant mean model is the simplest model, it generates similar results compared to other models (Brown and Warner 1980). Moreover, Dunn et al. (Dunn et al. 1999) adopted the market model to test the impact of the audit firm change decision on the abnormal return and stated that the latter is the most commonly used model. Given that the relationship between all these models can be observed and the choice of the model should have only a little influence on the results, this study



will use the constant mean return and the market model, to better capture the return patterns and eliminate any doubt concerning the inefficiency caused by the simplicity of the mean adjusted return model.

**Step 4: The Estimation Procedure.** The estimation window, the event window, and the post-event window should be defined. The announcement day is assumed to be  $T = 0$ . The estimation period is the period prior to the event and defined as the interval between  $T_0$  and  $T_1$ ; the event window is the period around the actual event defined as the interval between  $T_1$  and  $T_2$  while the post-event window is the period following the event window between  $T_2$  and  $T_3$ . A 100-day estimation period ranging from  $T_0 = -103$  till  $T_1 = -3$  is selected in this study as illustrated in Fig. 1, which was used in several studies (Al-Shattarat and Al-Shattarat 2017; Cox and Peterson 1994). For studies using daily datasets, the estimation period should range from 100 to 300 days (Peterson 1989). The estimation period excludes the event period to avoid any influence on the normal return estimation (Campbell et al. 1997).

$T$  is the time of the event (the day of the audit firm change announcement);  $[T_1, T_2]$  represents the event window of length  $T_2 - T_1$  (7-day event period) with both  $T_2$  and  $T_1$  inclusive;  $[T_0, T_1]$  constitutes the estimation window of length  $T_0 - T_1$  (100-day estimation period) excluding  $T_1$ ;  $(T_2, T_3]$  is the post-event period of length  $T_3 - T_2$  (17-day period) excluding  $T_2$ .

Thus, the actual return is calculated for the final sample of 120 companies over the period  $[-3, +20]$  using the formula:  $R_t = \ln(P_t/P_{t-1})$ . Second, the normal return is estimated over an estimation period prior to the event to get the return that could be generated in normal conditions if the event did not take place. The estimation period is a 100-day period ranging from day  $-103$  (inclusive) till day  $-3$  (exclusive).

The normal return is calculated over those 100 days using two methods:

- The mean-adjusted return, which is simply the average of the security's returns in the estimation period using the following formula:

$$\bar{R}_{i,t} = \frac{1}{100} \sum_{-3}^{-103} R_{i,(-103,-3)} \tag{6}$$

- The market return which consists of running a regression between the actual return of the security  $i$  and the market return in the estimation period, estimating the intercept ( $\alpha$ ) and the slope ( $\beta$ ) of the relationship, and then using the intercept and the slope again in the period  $t$  to find the normal return  $k_{it}$  as follows:

$$K_{it} = \alpha_i + \beta_t R_{mt} + \epsilon_{it} \tag{7}$$

Third, the abnormal return is calculated by subtracting the normal return (calculated in the second step) from the actual return (calculated in the first step) as follows:

$$AR_{it} = R_{it} - \bar{R}_{it} \tag{8}$$

The third step is repeated twice depending on the methods used to calculate the normal return.

Then, the cumulative abnormal return is calculated over the following two periods:

- Short run periods:  $[-3, +3]$ : divided into smaller intervals  $[-3, 0]$ ;  $[-3, -2]$ ;  $[-1, 0]$ ;  $[0, +3]$ ,  $[0, +1]$ ;  $[+2, +3]$ .
- Long run periods:  $(+3, +20)$ : divided into smaller intervals  $(+3, +5]$ ,  $[+6, +10]$ ;  $[+11, +20]$ .

Both windows (Event window and post-event window) are subdivided into smaller windows to detect the time where the CAR shows the highest significance levels.

For each of the eleven periods, two sets of CARS are calculated. The first one is calculated by adding the abnormal return using the mean-adjusted model and the second one is calculated by adding the abnormal return using the market model. The significance of all CARs obtained in this step is then tested by running the t-test in the 5<sup>th</sup> step of Campbell process.

**Step 5: Testing Procedure.** The next step requires designing the testing framework for the calculated abnormal returns. The sum of abnormal returns is called the cumulative abnormal return (CAR) which is derived by adding up all the abnormal returns in the event window and in the post-event windows.

$$CAR_i(T_1, T) = \sum_{t=T_1}^{T_2} AR_{it} \quad (9)$$

The main objective of the Event Study is to assure that the cumulative abnormal return is significantly different from zero due to the event and not due to chance. The null hypothesis usually tested in such Event Studies is as follows:

*H<sub>0</sub>: The cumulative abnormal stock return for companies changing their auditors is equal to zero around the announcement date.*

Testing the significance of the results can be done using the parametric and the non-parametric tests. While the parametric test assumes that the abnormal returns of the companies are normally distributed, the non-parametric test does not impose any assumption related to the statistical nature of the abnormal returns (Trochim 2000). A remarkable number of researches on Event Studies adopted the parametric tests (Dutta 2014) and the t-test is considered as one of the leading tests used in the Event Study methodologies (Ahern 2009). Parametric tests usually have a better statistical power than non-parametric tests (Campbell et al. 1997). Thus, this paper uses a student test to test whether the mean of the cumulative abnormal returns is different from zero.

**Steps 6 and 7: Empirical Results, Interpretation and Conclusion.** After conducting the significance tests, empirical results are drawn. Finally, results are analyzed and interpreted to reach a conclusion concerning the impact of the announcement of an audit firm change on the security prices.

## 4 Presentation of Findings

### 4.1 Descriptive Statistics

First, the whole sample is divided into 4 sub-groups according to the type of the old/new auditor, as illustrated in Table 1, Panel A. This categorization is used in the descriptive statistics part as well as in the inferential part elaborated in the next section, where the research questions are tested. Furthermore, to know the industries where the audit firm change announcements are concentrated, each company is assigned one of the 10 industry codes summarized in Table 1, Panel B. This classification follows the Standard Industrial Classification (SIC) code which is a system created in 1937 in US to help categorize companies within specific industries (SIC: Farlex financial dictionary 2009).

Table 2 Panel A reports the distribution of observations by audit firm change type and year, while Table 2, Panel B reports the distribution of observations by audit firm change type and industry. First, most of the audit firm changes (27.5%) took place in 2014, followed by year 2016 (25%). When it comes to the type of auditor change, most of the changes are of type 1, (from a Big N to a Big N), followed by type 4 (from a Non-big N to a Big N) suggesting the persistent dominance of Big N in the UK market.

Moreover, Panel B shows that most audit firm changes, regardless of the type, are concentrated in the service industry (Classification 9), followed by finance, insurance, and real estate (classification 8). However, 'construction' (classification 3) is the

**Table 1** Summary of the sample

**Panel A: Types of audit firm change**

Definition	Type of audit firm change	N (%)
Switch from a Big N to a Big N auditor	Type 1	77 (64%)
Switch from a non-Big N to a non-Big N	Type 2	17 (14%)
Switch from a Big N to a non-Big N	Type 3	7 (6%)
Switch from a non-Big N to a Big N	Type 4	19 (16%)
Total		120 (100%)

**Panel B: The 10 industry codes**

Industry Code	Industry Type
1	Agriculture, Forestry, Fishing
2	Mining
3	Construction
4	Manufacturing
5	Transportation & Public Utilities
6	Wholesale Trade
7	Retail Trade
8	Finance, Insurance, Real Estate
9	Services
10	Public Administration

**Table 2** Distribution of observations**Panel A:** By audit firm change type and year

Year	Full sample		Type 1		Type 2		Type 3		Type 4	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
2013	6	5.00	5	6.49					1	5.26
2014	33	27.50	20	25.97	3	17.65	3	42.86	7	36.84
2015	26	21.67	18	23.38	5	29.41	1	14.29	2	10.53
2016	30	25.00	19	24.68	3	17.65	2	28.57	6	31.58
2017	23	19.17	14	18.18	5	29.41	1	14.29	3	15.79
2018	2	1.67	1	1.30	1	5.88				
Total	120	100	77	64.16	17	14.17	7	5.83	19	15.84

**Panel B:** By audit firm change type and industry

Industry	Full sample		Type 1		Type 2		Type 3		Type 4	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
1	3	2.50	3	3.90						
2	2	1.67	1	1.30					1	5.26
3										
4	13	10.83	9	11.69	1	5.88			3	15.79
5	7	5.83	5	6.49	1	5.88			1	5.26
6	3	2.50	2	2.60	1	5.88				
7	4	3.33	2	2.60			1	14.29	1	5.26
8	30	25.00	20	25.97	5	29.41	2	28.57	3	15.79
9	57	47.50	35	45.45	9	52.94	4	57.14	9	47.37
10	1	0.83							1	5.26

only industry that has not witnessed any audit firm change announcements during the period of study. Based on Oxera's report (Oxera 2006), the insurance, finance, real estate and the service sectors pay the highest audit fees, while the construction sector pay the lowest. Based on these findings, one could expect that Type 1 and Type 4 auditor change display the highest concentration in the first two industries, while the other two types display the lowest concentration. This expectation is based on the fact that switching to Big N is associated with high audit fees (Oxera 2006). However, this is not the case in Table 2, probably since Type 2 and Type 3 have very low observations compared to other types.

## 4.2 Market Reaction to an Audit Firm Change Announcement: All Types of Changes

To test the market reaction to an audit firm, change announcement, in both the short period analysis and the long period one, the whole sample is subject to test. The CARs (both mean adjusted and market models) of all the 120 companies are recorded over the eleven sub-periods specified previously, and the t-test is conducted to observe the significance of this return under the two methods. The results are shown in Tables 3 and 4 respectively.

**Table 3** The CAR (mean-adjusted) regardless of the successor auditor type

	Window	t-value	Mean	St.dev.	p-value	Significance
Short period						
Event window	[-3, +3]	-0.2833	-0.0022334	0.0863619	0.7774	Insignificant
Before event	[-3, 0]	-0.7659	-0.0058092	0.083083	0.4452	Insignificant
	[-3, -2]	-1.3439	-0.0085354	0.0695761	0.1816	Insignificant
	[-1, 0]	0.8186	0.0027261	0.0364823	0.4147	Insignificant
Post event	[0, +3]	1.3837	0.0064379	0.0509687	0.1690	Insignificant
	[0, +1]	1.1655	0.0039943	0.0375429	0.2462	Insignificant
	[+2, +3]	0.7316	0.0024436	0.0365914	0.4659	Insignificant
Long period						
	(+3, +20]	0.4080	0.0048424	0.130024	0.6840	Insignificant
	(+3, +5]	1.5175	0.0065643	0.047386	0.1318	Insignificant
	(+6, +10]	0.1737	0.0009667	0.0609818	0.8624	Insignificant
	(+11, +20]	-0.3199	-0.0026887	0.0920763	0.7496	Insignificant

**Table 4** The CAR (market) regardless of the successor auditor type

	Window	Mean	t-value	St. dev.	P-value	Significance
Short period						
Event window	[-3, +3]	-0.0022436	-0.2883	0.0852551	0.7736	Insignificant
Before event	[-3, 0]	-0.0059013	-0.7763	0.0832794	0.4391	Insignificant
	[-3, -2]	-0.0084959	1.3487	0.069004	0.1800	Insignificant
	[-1, 0]	0.0025946	0.8000	0.0355289	0.4253	Insignificant
Post event	[0, +3]	0.0066729	1.5379	0.047531	0.1267	Insignificant
	[0, +1]	0.0043447	1.3201	0.0360541	0.1893	Insignificant
	[+2, +3]	0.0023281	0.7111	0.035865	0.4784	Insignificant
Long period						
	(+3, +20]	0.0077907	0.8885	0.0960571	0.3761	Insignificant
	(+3, +5]	0.0058967	1.3829	0.0467108	0.1693	Insignificant
	(+6, +10]	0.000463	0.0849	0.0597441	0.9325	Insignificant
	(+11, +20]	-0.0003989	-0.0490	0.0891589	0.9610	Insignificant

The event window [-3, +3] shows a negative mean cumulative abnormal return in both models. Dividing this window into sub-periods shows negative mean cumulative abnormal returns in the sub-periods of the before event period [-3, 0], [-3, -2] except for [-1, 0] and positive cumulative abnormal returns for all sub-periods in the post-event period in the short-run [0, +3], [0, +1], [+2, +3]. Looking at the significance levels, under both models, the means are insignificant in the event

window and remain insignificant after dividing the window in the pre-event period and the post-event period in the short run.

As for the long period, the mean cumulative abnormal return is positive in the window (+3, +20] in both models. After dividing this window into sub-periods, the periods (+3, +5] and [+6, +10] still show a positive mean cumulative abnormal return, however a negative sign appear in the sub-period [+11, +20]. Looking at the significance in this long period, all the cumulative abnormal return means are insignificant for both models. Thus, there is no significant positive cumulative abnormal return around the announcement of audit firm change, irrespective of the successor auditor's type; and there is no significant cumulative positive abnormal return 17 days following the announcement day, irrespective of the successor auditor's type.

### **4.3 Market Reaction to an Audit Firm Change Announcement: From a Non-Big N to a Big N**

In testing the market to reaction to companies switching to a Big N auditor, only Type 4 auditor change (from a non-Big N to a Big N) is needed, and therefore a sample of 19 companies is used in this analysis. The CARs of these 19 firms are recorded under both models (mean-adjusted and market) and tested using the t-test to detect any significant cumulative abnormal return associated with the switch from non-Big N to Big N auditors over the specified windows. The results are summarized in Table 5 and Table 6 respectively.

In the short period, the event window  $[-3, +3]$  shows again negative mean cumulative abnormal returns in both models. Dividing this window into sub-periods shows negative mean cumulative abnormal returns in all sub-periods before the event period  $[-3, 0]$ ,  $[-3, -2]$ ,  $[-1, 0]$ , and positive mean cumulative abnormal returns for all sub-periods in the post-event of the short-run  $[0, +3]$ ,  $[0, +1]$  except in the window  $[+2, +3]$ . Looking at the significance levels, under both models, the mean CARs are insignificant in the event window and remain insignificant in the before event period. Similarly in the post-event period of the short run, all the windows show insignificant cumulative abnormal returns except for the window  $[0, +1]$  which is positive and significant at 10% level under the mean adjusted model (Table 5) and positive and significant at 5% level under the market model (Table 6).

As for the long period (+3, +20], the mean cumulative abnormal return under the mean-adjusted model is negative, while under the market model, it is positive. After dividing this window into sub-periods, the window (+3, +5] shows a positive cumulative abnormal return while [+6, +10] shows a negative cumulative abnormal return under both models. In the window [+11, +20] the mean cumulative abnormal return is again negative under the mean-adjusted model but positive under the market model. Looking at the significance in this long period, all the cumulative abnormal return means are insignificant in both models. Thus, under the mean adjusted model, companies changing from non-Big N to Big N auditors showed a positive cumulative

**Table 5** CAR (mean-adjusted) for switch from non-big N to Big N auditor

	Window	t-value	Mean	St.dev.	P-value	Significance
Short period						
Event window	[-3, +3]	-1.3615	-0.0493229	0.1579116	0.1902	Insignificant
Before event	[-3, 0]	-1.1926	-0.0457027	0.1670455	0.2485	Insignificant
	[-3, -2]	-1.1057	-0.0395936	0.1560815	0.2834	Insignificant
	[-1, 0]	-0.8129	-0.0061091	0.0327581	0.4269	Insignificant
Post event	[0, +3]	0.0126	0.0001452	0.0501339	0.9901	Insignificant
	[0, +1]	1.8906	0.0100403	0.0231482	0.0749*	Positive and significant at 10%
	[+2, +3]	-1.0409	-0.009895	0.0414372	0.3117	Insignificant
Long period						
	(+3, +20]	-0.3433	-0.01493	0.1895434	0.7353	Insignificant
	(+3, +5]	0.5206	0.0058726	0.0491713	0.6090	Insignificant
	(+6, +10]	-0.9843	-0.0189386	0.0838712	0.3380	Insignificant
	(+11, +20]	-0.0548	-0.001864	0.1483646	0.9569	Insignificant

\* denotes significance at 10%

**Table 6** CAR (market) for switch from non-big N to Big N auditor

	Window	t-value	Mean	St.dev.	P-value	Significance
Short period						
Event window	[-3, +3]	-1.2952	-0.047073	0.1584153	0.2116	Insignificant
Before event	[-3, 0]	-1.1855	-0.0453729	0.1668226	0.2512	Insignificant
	[-3, -2]	-1.1131	-0.039694	0.1554426	0.2803	Insignificant
	[-1, 0]	-0.7427	-0.0056789	0.033329	0.4672	Insignificant
Post event	[0, +3]	0.1973	0.0022884	0.0505661	0.8458	Insignificant
	[0, +1]	2.3246	0.0115521	0.0216614	0.0320**	Positive and Significant at 5%
	[+2, +3]	-0.9757	-0.0092638	0.0413857	0.3421	Insignificant
Long period						
	(+3, +20]	0.0173	0.0005202	0.1308172	0.9864	Insignificant
	(+3, +5]	0.4713	0.0050135	0.0463658	0.6431	Insignificant
	(+6, +10]	-0.8521	-0.0162818	0.083289	0.4054	Insignificant
	(+11, +20]	0.0466	0.0015792	0.1478331	0.9634	Insignificant

\*\*, \* denote significance at 5%, and 10% respectively

**Table 7** T-test of companies switching from non-Big N to Big N based on market capitalization (window 0, +1)

Samples	Market CAP	Obs	Mean	St. dev	p-value	T-test
Sub-sample 1	Lower than 4858.674	19	0.0115521	0.0216614	0.0320	2.3246**
Sub-sample 2	Higher than 4858.674	0	0	0	0	0
Sub-sample 1'	Lower than 330.7311	15	0.0116096	0.0210539	0.0509	2.1356*
Sub-sample 2'	Higher than 330.7311	4	0.0113365	0.0273245	0.4675	0.8298

\*\*,\* denote significance at 5%, and 10% respectively

abnormal return in the window [0, +1], significant at 10%, with a p-value of 0.0749. Similarly, and under the market model over the same window, those companies show a positive CAR but significant at a 5% with a p-value of 0.032.

Because the CAR over the window [0, +1] is found to be positive and statistically significant for companies switching from non-Big N to Big N auditors using both models, a further analysis is conducted to detect which type of companies (Big or small) are more likely to do that change and still generate this positive CAR. We tried to divide the sample of companies shifting from non-Big N to Big N auditors (which includes 19 companies) into two sub-samples based on the market capitalization mean of the whole sample (4858.674). The purpose is to repeat the t-test for each of the two groups separately over the window [0, +1]. A sub-sample 1 includes companies having a market capitalization smaller than the whole sample's mean (4858.674) while a sub-sample 2 includes companies with a market capitalization greater than the whole sample's mean. The results in Table 7 show that all the 19 firms are found to be part of sub-sample 1, having a market capitalization lower than the whole sample's mean. The fact that no firms in Type 4 are above median market capitalization for the full sample highlights the tendency for smaller firms to change to Big 4 audit firms.

The same sample is divided again but the mean market capitalization of this sample (19 companies) is used as a reference for categorizing the companies rather than the whole sample mean. The CAR obtained in the first and the second categorization cases is positive and statistically significant at 5 and 10% significance levels respectively, revealing that small companies switching from non-Big N to Big N auditors are more likely to generate a positive market reaction one day following the announcement day. This could suggest that size differences impact both the audit firm switch decision and the market reaction following the switch decision.

## 5 Analysis of the Findings

Results reveal that the market did not react neither in the short-term nor in the long-term to the announcement of audit firm change in general. Our findings failed to confirm many studies that reported a negative market reaction following the audit



firm change. These studies argue that no matter who is the successor auditor, the act of changing the auditor creates a bad signal concerning the accuracy of the financial reports, thus the share price declines while the cost of capital increases (Teh et al. 2016; Eichenseher et al. 1989). However, the results obtained in this study support a big body of literature that found an insignificant market reaction following the audit firm change (Johnson and Lys 1990; Fried and Schiff 1981; Klock 1994). Researchers argue that the opinion shopping ceases to exist after the SEC (Klock 1994; Davidson et al. 2006), the PCAOB, CC and European Commission remedies, and several other regulatory bodies' efforts concerning the internal control and the financial reporting strict guidance that helped in minimizing the manipulation attempts.

As for the market reaction following the switch from non-Big N to Big N auditors, different results are obtained. More specifically, a significant positive market reaction is found one day following the announcement (over  $[0, +1]$  window), under both the mean-adjusted model and market model. This finding is supported by the literature that reported a positive market reaction to the switch to a Big N auditor (Knechel et al. 2007; Chan et al. 2011). This positive market reaction is triggered by the believe that Big N auditors are less likely to engage in earning manipulation since they have an international reputation that they fear to lose (Houghton and Jubb 2003). Furthermore, these auditors are perceived to be professional in dealing with agency problems (Houghton and Jubb 2003). The result can lead to two implications. First, Big N firms are still perceived to be high quality auditors even after all the scandals that had occurred. Second, efforts to promote the public confidence in non-Big N firms might have failed, as the public still demonstrates favorable reaction towards big auditor names. This positive market reaction is only manifested in the short period, but does not last in the long term one, as the cumulative abnormal return remains insignificant in all the windows in the long-term period. Furthermore, companies that have switched auditors (from non-Big N to a Big N) and were able to generate a positive market reaction over the window  $[0, +1]$  were found to be small in terms of market capitalization. Two possible explanations can be provided in this context. First, as Big N auditors are able to raise capital very easily (Guedhami et al. 2014), small firms might be opting to grow by hiring these auditors. Second, based on the assurance theory, small firms might change to Big N auditors to spread positive signals among shareholders, and assure them that their wealth is being protected.

## 6 Conclusion

This research investigated the market response to an audit firm change announcement. The researchers did not find any negative market reaction following the auditor change in general, but a positive market reaction one day following the switch to a Big N auditor; given that more than 75% of the audit firm change cases are switches to a Big N auditor. Therefore, the problem of the Big N dominance that the UK market has been suffering from, between 2002 and 2011, seems to persist until today. Consequently, the Big N names are still associated with good quality of auditing services,

translated into a positive cumulative abnormal return. Therefore, the researchers can conclude that the regulatory efforts to eliminate the opinion shopping intentions behind audit firm changes might have failed. The auditing profession should be more under the government sight and the regulatory bodies should pay more attention to the auditors' performance. The regulatory bodies must be stricter when it comes to reporting the reasons of audit firm changes and investigate any possible hidden intention behind such decisions.

More serious measures should be implemented to give smaller firms the opportunity to enter the audit market. When more competition exists, the audit quality will be automatically enhanced, and the audit fees will go down. If the concentration problem is not remedied, the Big N firms will end up dominating the market, imposing their own rules and the government will lose control. Government agencies might start hiring non-Big N auditors to encourage the public to trust these firms. The government can stop Big N firms from getting too big, by setting ceilings to limit the number of clients and the audit fees charged. They must eliminate the barriers to entry in this industry to allow new companies to enter and help them compete with the dominating firms. Thus, the findings of this study will also help other stakeholders to better understand the audit firm change context before taking any strategic decision. Investors will be able to better manage their investment portfolios knowing that potential audit firm change decisions will affect their stock returns. In addition, companies planning to change their auditors can anticipate the impact of this decision on the market reaction and the shareholders' future return.

This study suffers from several limitations. First, the number of observations that were initially 157 companies has shrunken due to some missing data. Second, it was planned to examine the market reaction after the choice of a non-Big N, however, less than 25% of the cases in the sample were switch cases to non-Big N auditors, and consequently, not being a substantial sample to test. Third, moreover, the significant one-day CAR in the event window [0, 1] could have been decomposed into shorter time periods, like an hour, a minute or even a second; however, the researcher did not do this as the event date was not the same one for all the companies which makes it practically hard to collect such data. However, both issues raised up might trigger researchers' curiosity for further studies.

This work will pave the way for further studies to expand the research especially that very few scholars have tackled these questions in the UK market. In this study, the UK companies listed on the London stock exchange were the subjects of analysis, over a 5-year period. As the observations obtained were not so numerous, new research can reexamine the same topic over a longer period, and/or by adopting a cross sectional analysis in two different stock exchange markets, two different countries or two different industries. Furthermore, complimentary research can investigate the impact of an audit firm change decision on the company's earnings quality, as measured by discretionary accruals. Such study can uncover the company's intentions behind the change by detecting earning manipulations practices following the new auditor's appointment. Finally, the moderator role of audit committee in affecting the market reaction to audit change decision could be investigated since audit committee

was found to affect earning quality (Hamdan 2020; Hamdan and Mushtaha 2011; Hamdan et al. 2013).

## References

- Agrawal, A., Chadha, S.: Corporate governance and accounting scandals. Univ. Chicago Press J. **48**, 371–406 (2005)
- Ahern, K.: Sample selection and event study estimation. J. Empir. Financ. **16**, 466–482 (2009)
- Alareeni, B.: A review of auditors' GCOs, statistical prediction models and artificial intelligence technology. Int. J. Bus. Ethics Gov. **2**, 19–31 (2019a)
- Alareeni, B.A.: The associations between audit firm attributes and audit quality-specific indicators: a meta-analysis. Manag. Audit. J. **34**, 6–43 (2019b). <https://doi.org/10.1108/MAJ-05-2017-1559>
- Alareeni, B., Branson, J.: The relative performance of auditors' going-concern opinions and statistical failure prediction models in Jordan (2011)
- Al-Shattarat, W.K., Al-Shattarat, B.K.: The relationship between cumulative abnormal returns and earnings: evidence from emerging markets. J. Dev. Areas **51**, 357–368 (2017)
- Beattie, V., Fearnley, S.: The importance of audit firm characteristics and the drivers of auditor change in UK listed companies. Account. Bus. Res. **25**, 227–239 (1995). <https://doi.org/10.1080/00014788.1995.9729912>
- Beattie, V., Goodacre, A., Fearnley, S.: And then there were four: a study of UK audit market concentration - causes, consequences and the scope for market adjustment. J. Financ. Regul. Compliance **11**, 250–265 (2003). <https://doi.org/10.1108/13581980310810561>
- Brown, S.J., Warner, J.B.: Measuring security price performance. J. Financ. Econ. **8**, 205–258 (1980). [https://doi.org/10.1016/0304-405X\(80\)90002-1](https://doi.org/10.1016/0304-405X(80)90002-1)
- Campbell, J.Y., Lo, A.W., Mackinlay, A.C.: The Econometrics of Financial Markets. Princeton University Press, New Jersey (1997)
- Chan, K.C., Farrell, B., Healy, P., Lee, P.: Firm performance following auditor changes for audit fee savings. J. Bus. Econ. Res. Little. **9**, 17–25 (2011)
- Chang, H., Cheng, C.S.A., Reichelt, K.J.: Market reaction to auditor switching from big 4 to third-tier small accounting firms. Audit. A J. Pract. Theory **29**, 83–114 (2010a). <https://doi.org/10.2308/aud.2010.29.2.83>
- Chang, H., Cheng, C.S.A., Reichelt, K.J.: Big 4 to third-tier small accounting firms. **29**, 83–114 (2010b). <https://doi.org/10.2308/aud.2010.29.2.83>
- Choi, J.-H., Kim, J.B., Liu, X., Simunic, D.: Audit pricing, legal liability regimes, and Big 4 premiums: theory and cross-country evidence. Contemp. Account. Res. **25**, 55–99 (2008). <https://doi.org/10.1506/car.25.1.2>
- Chow, C.W., Rice, S.J.: Qualified audit opinions and auditor switching. Account. Rev. **57**, 326–335 (1982)
- Corrado, C.: Event studies: a methodology review. Account. Financ. **51**, 207–234 (2011)
- Cox, D.R., Peterson, D.R.: Stock returns following large one-day declines: evidence on short-term reversals and longer-term performance. J. Financ. **49**, 255–267 (1994)
- Davidson, W.N., Jiraporn, P., DaDalt, P.: Causes and consequences of audit shopping: an analysis of auditor opinions, earnings management, and auditor changes. Q. J. Bus. Econ. **45**, 69–87 (2006)
- DeAngelo, L.E.: Mandated successful efforts and auditor choice. J. Account. Econ. **4**, 171–203 (1982). [https://doi.org/10.1016/0165-4101\(82\)90008-8](https://doi.org/10.1016/0165-4101(82)90008-8)
- Dunn, J., Hillier, D., Marshall, A.P., et al.: The market reaction to auditor resignations the market reaction to auditor resignations. Account. Bus. Res. **29**, 95–108 (1999). <https://doi.org/10.1080/00014788.1999.9729572>
- Dutta, A.: Parametric and nonparametric event study tests: a review. Int. Bus. Res. **7**, 136–142 (2014). <https://doi.org/10.5539/ibr.v7n12p136>

- Eichenseher, J.W., Hagigi, M., Shields, D.: Market reaction to auditor changes by OTC companies. *Audit. A J. Pract. Theory* **9**, 29–40 (1989)
- Eisenhardt, K.M.: Building theories from case study research. *Acad. Manag. Rev.* **14**, 532–550 (1989). <https://doi.org/10.2307/258557>
- Farooq, O., Tabine, S.: Agency problems and the choice of auditors: Evidence from the MENA region. *Rev. Middle East Econ. Financ.* **11**, 79–97 (2015). <http://dx.doi.org.neptune.ndu.edu.lb:2048/10.1515/rmeef-2012-0036>
- Financial Reporting Council: Statement from Stephen Haddrill, Chief Executive of the Financial Reporting Council, regarding the implementation of the EU Audit Regulation and Directive (2016). <https://www.frc.org.uk/news/june-2016/statement-from-stephen-haddrill,-chief-executive-o>
- Financial Reporting Council: Developments in Audit 2016/2017 (2017)
- Fried, D., Schiff, A.: CPA switches and associated market reactions. *Account. Rev.* **56**, 326–341 (1981)
- Gaeremynck, A., Willekens, M.: The endogenous relationship between audit-report type and business termination: evidence on private firms in a non-litigious environment. *Account. Bus. Res.* **33**, 65–79 (2003). <https://doi.org/10.1080/00014788.2003.9729632>
- Guedhami, O., Pittman, J.A., Saffar, W.: Auditor choice in politically connected firms. *J. Account. Res.* **52**, 107–162 (2014)
- Hamdan, A.: The role of the audit committee in improving earnings quality: the case of industrial companies in GCC. *J. Int. Stud.* **13** (2020)
- Hamdan, A.M.M., Mushtaha, S.M.S.: The relationship between audit committee characteristics and type of auditor's report (an empirical study on the public shareholding industrial companies listed at Amman Bourse). *Arab. J. Account.* **14** (2011)
- Hamdan, A.M., Mushtaha, S., Musleh Al-Sartawi, A.: The audit committee characteristics and earnings quality: evidence from Jordan. *Australas Acc. Bus. Financ. J.* **7** (2013)
- Houghton, K.A., Jubb, C.A.: Auditor selection: what influences decisions by listed companies? *Aust. Account. Rev. Melb.* **13**, 67–72 (2003)
- Hudaib, M., Cooke, T.E.: The impact of managing director changes and financial distress on audit qualification and auditor switching. *J. Bus. Financ. Account.* **32**, 1703–1739 (2005)
- Huson, J., Shamsher, M., Mohd, A., Annur, M.: Audit switch decisions of Malaysian listed firms: test of determinants of wealth effect. *Cap Mark Rev.* **8**, 1–24 (2000)
- Johnson, W.B., Lys, T.: The market for audit services: evidence from voluntary auditor changes. *J. Account. Econ.* **12**, 281–308 (1990)
- Klock, M.: The stock market reaction to a change in certifying accountant. *J. Account. Audit. Financ.* **9**, 339–347 (1994). <https://doi.org/10.1177/0148558X9400900213>
- Knechel, W.R., Naiker, V., Pacheco, G.: Does auditor industry specialization matter? Evidence from market reaction to auditor switches. *Audit. Sar.* **26**, 19–45 (2007)
- Krishnan, J.: Auditor switching and conservatism. *Account. Rev.* **69**, 200–215 (1994)
- Kwon, I., Pan, J.: Auditor downgrades during financial distress when the market is rational. *SSRN Electron. J.* (2010) <https://doi.org/10.2139/ssrn.1565833>
- Lennox, C.: Do companies successfully engage in opinion-shopping ? Evidence from the UK. *J. Account. Econ.* **29**(29), 321–337 (2000)
- Lin, Z., Liu, M., Wang, Z.: Market implications of the audit quality and auditor switches: evidence from China. *J. Int. Financ. Manag. Account.* **20**, 35–78 (2009)
- Magee, R.P., Tseng, M.-C.: Audit pricing and independence. *Account. Rev.* **65**, 315–336 (1990)
- Oler, D.K., Harrison, J.S., Allen, M.R.: The danger of misinterpreting short-window event study findings in strategic management research: an empirical illustration using horizontal acquisitions. *Strateg. Organ.* **6**, 151–184 (2008). <https://doi.org/10.1177/1476127008090008>
- Oxera: Competition and choice in the UK audit market Department of Trade and Industry (2006)
- Parliamentary Commission on Banking Standards: Changing banking for good: Report of the Parliamentary Commission on Banking Standards (2013)
- Peterson, P.P.: Event studies: a review of issues and methodology. *Q. J. Bus. Econ.* 36–66 (1989)

- Reilly, D.: Midtier auditors gain traction in quest for large-cap clients. *Wall Str. J.* **November 1**, C3 (2006)
- Financial Reporting Council: Big Four audit quality review results decline (2018a)
- Financial Reporting Council: Key facts and trends in the accountancy profession (2018b)
- Sankaraguruswamy, S., Whisenant, J.S.: An empirical analysis of voluntarily supplied client-auditor realignment reasons. *Aud. A J. Pract. Theory* **23**, 107–121 (2004). <https://doi.org/10.2308/aud.2004.23.1.107>
- Shu, S.: Auditor resignations: Clientele effects and legal liability. *J. Account. Econ.* **29**, 173–205 (2000)
- SIC: Farlex financial dictionary (2009). <http://financial-dictionary.thefreedictionary.com/Vertical+Audit>
- Simon, H.A.: Theories of decision making in economics and behavioral science. *Am. Econ. Rev.* **49**, 253–283 (1959)
- Competition Commission: Statutory audit services for large companies market investigation: A report on the provision of statutory audit services to large companies in the UK (2013)
- Stefaniak, C., Robertson, J., Houston, R.: The causes and consequences of auditor switching: a review of the literature. *J. Account. Lit.* **28**, 47–52 (2009)
- Teh, B.H., Ong, T.S., Samuel, A.B., Huei Ng, S.: An empirical study of auditors switching, corporate governance and financial performances of Malaysian Public Listed Companies (PLCs). *J. Pengur.* **47**, 43–53 (2016)
- Trochim, W.M.K.: *Research Methods Knowledge Base*, 2nd edn. Atomic Dog Publishing, Cincinnati (2000)
- Wells, D.W., Loudder, M.L.: The market effects of auditor resignations. *Audit. A J. Pract. Theory* **16**, 138–144 (1997)
- Whisenant, J.S., Sankaraguruswamy, S., Raghunandan, K.: Market reactions to disclosure of reportable events. *Audit. A J. Pract. Theory* **22**, 181–194 (2003). <https://doi.org/10.2308/aud.2003.22.1.181>

# Stakeholders of Yogyakarta Special Region and the Way They Manage Privilege Fund



Dessy Isfianadewi , Unggul Priyadi , and Lak Lak Nazhat El Hasanah 

**Abstract** This study aims to analyze the role of stakeholders in the Special Region of Yogyakarta, which consists of the palace and the Pakualaman, Kaprajan (local government and district/city government), Campus, Village, and Community. This study also analyzes how the stakeholders manage and understand the Yogyakarta privilege fund. This research uses the descriptive analysis qualitative method. Determination of the sample is done by sampling technique, Clustered random sampling. The number of samples in this survey is 462 respondents with a  $\pm 5\%$  margin error at the 95% confidence level. The data collection method was that the selected respondents were interviewed face-to-face using a questionnaire by interviewers who had been trained. The results of this study provide evaluations and recommendations for stakeholders in optimizing the management of Yogyakarta's privileged funds. This study provides a mapping of the management and performance of stakeholders in the Special Region of Yogyakarta.

**Keywords** Privilege fund · Stakeholders · Yogyakarta special region · Good governance

## 1 Introduction

The Special Region of Yogyakarta is one of the regions that received a special policy in asymmetric decentralization. This policy has been in effect since the enactment of Law Number 13 of 2012 concerning the Privileges of DIY. In particular, this regulation regulates five affairs, including filling the positions of Governor and Deputy Governor, DIY regional government, cultural experiences, land affairs, and spatial planning (Sakir and Sarofah 2020).

---

D. Isfianadewi (✉)

Department of Management, Faculty of Business and Economics, Universitas Islam Indonesia, Yogyakarta, Indonesia

e-mail: [dessy.isfianadewi@uii.ac.id](mailto:dessy.isfianadewi@uii.ac.id)

U. Priyadi · L. L. N. El Hasanah

Department of Economics, Faculty of Business and Economics, Universitas Islam Indonesia, Yogyakarta, Indonesia

In holding the title of Privilege, a province must fulfill several aspects as prerequisites, including the policy that can strengthen the basics of the Unitary State of the Republic of Indonesia. Accelerate the welfare of local communities, support the welfare of all Indonesian people, increase the development of social justice, and reflect the implementation of local people's sovereignty. Thus, the policy of special autonomy or the granting of privileges to a specific area will not only become a symbol or slogan and make the area a State within the State but will also be more oriented towards the welfare of the people by remaining in its corridors, from the Unitary State (Resmi et al. 2021; Arlinwibowo et al. 2021).

Efendi et al. (2017) stated that asymmetric decentralization in DIY has several benefits: reducing the central government's centrality of development planning control by delegating greater authority to the regions. Regions will have higher sensitivity problems that arise. Occurs in the areas, spurring more creative, innovative, responsive fields, increasing the accountability of bureaucrats and people's representatives, increasing the community's political, social, and economic participation, making public services more efficient and effective. And decentralization can increase national stability and unity. Each of these points can be structured as an indicator. And how they can be put into practice and evaluated. How and where lies the gap between ideal and reality.

Management of an area includes several different and situational factors. Local governments must understand the character and background of their people to determine the right policies and strategies in developing an area (Musacchio et al. 2020). Casula (2020) stated that the solution in managing a place for local governments is cooperation. The government should intensely involve the private sector and the existing community and community. Cramer (2020) analyzed the function of the transition broker in regional governance and found that the transition broker fulfills the role of system orchestration.

Iqbal and Pratiwi (2020) stated that a better education system and private sector performance would be formed with good governance. Therefore, local governments must pay attention to and develop good governance, especially in areas that receive privileged funds, such as Yogyakarta. Good governance in local government can generate economic and community empowerment (Omri and Mabrouk 2020; Pomeranz and Stedman 2020; Omri and Hadj 2020; Nguyen and Canh 2020). It requires participation from all levels of stakeholders.

This research is different from previous research, namely analyzing the role of stakeholders in the Special Region of Yogyakarta, which consists of the palace and the Pakulaman, Kaprajan (local government and district/city government), Campus, Village, and Community. This study also analyzes how the stakeholders manage and understand the Yogyakarta privilege fund. The results of this study provides a mapping of the management and performance of stakeholders in the Special Region of Yogyakarta.

## 2 Literature Review

### 2.1 *The Stakeholders of Yogyakarta Special Region*

Law number 13 of 2012, the determination of Yogyakarta as a special region within the framework of regional autonomy is included in special autonomy. The law provides for determining aspects, purpose, and authority of Yogyakarta as a special region. The objective elements of the privileges of Yogyakarta include: realizing a democratic government, realizing public welfare and peace, realizing governance and social order that guarantees unity in diversity within the framework of the Unitary State of the Republic of Indonesia—creating good governance and institutionalizing the roles and responsibilities of the Sultanate and Duchy in maintaining and preserving the culture of Yogyakarta, which is the nation's cultural heritage (Iqbal and Pratiwi 2020; Mashdurohatun et al. 2021).

Meanwhile, the authorities listed in the law include the procedures for filling out the positions, positions, duties, and authorities of the Governor and deputy governors; DIY government institutions; culture; land; and layout. In carrying out these affairs, the central government provides a special allocation fund that functions as a budget for carrying out special matters, often known to the public as the Privileges Fund (Sa'adah and Hadi 2018).

During the period of 5 years, 2013–2017, the amount of the Privileges Fund showed an increasing trend. The allocation of privileged funds in 2014 increased significantly by IDR 523,874,000 or 126.4% compared to the previous year, 2013, amounting to IDR 231,392,000 .—Meanwhile, DIY Privileges Fund allocation in 2015 increased to IDR 547,450,000 —or 4.5% of the 2014 budget. Meanwhile, the allocation of privileged funds in 2016 did not increase and remained the same as 2015. Meanwhile, in 2017 the allocation of privileged funds increased to IDR 800,000,000 —or 46.13% from 2016 (Bappeda 2018).

Concerning the use of the Privileges Fund, data shows that during 2013–2017, the Privileges Fund could be well absorbed by the OPD related to 5 special matters [Culture, Spatial Planning, Land, Institutional, and Procedures]. From 2013–2015, the largest funds were absorbed by cultural affairs with the percentage of absorption respectively 91% (2013), 72% (2014), and 77% (2015). An exception occurred in 2016, where 60% of the largest funds were absorbed by Spatial Affairs, while cultural affairs absorbed the remaining by 32% and land affairs by 24%. Except for 2016, spatial planning is the second-largest absorption of funds, at 4% (2013), 24% (2014), 21% (2015), and 40% (2017).

Questioning the distribution of Privilege Fund allocations in 5 Regencies/Cities in DIY, the data shows that the absorption of the budget by Regency/Municipal OPD only took place in the 2014 budget period. In that year, the most prominent absorption of Privileges Fund was held by Kulonprogo Regency at IDR 18.863 billion, followed by Yogyakarta Municipality ( IDR 18.183 billion), Gunung Kidul Regency ( IDR 13.595 billion), Bantul Regency ( IDR 12.800 billion), and Sleman Regency ( IDR 11.950 billion). In 2015, the most prominent absorption of the Privilege Fund was



occupied by the Kulonprogo Regency of IDR 21.425 billion, followed by Gunung Kidul Regency ( IDR 17.918 billion), Bantul Regency ( IDR 17.578 billion), Yogyakarta Municipality ( IDR 10.757 billion), and finally Sleman Regency ( IDR 7.965 billion). Meanwhile, in 2016, Kulonprogo Regency occupied the top position in absorbing the Privilege Fund of IDR 12.649 billion followed in succession, Gunungkidul Regency ( IDR 6.226 billion), Bantul Regency ( IDR 4.853 billion), Yogyakarta Municipality ( IDR 3.989 billion), and finally Sleman Regency ( IDR 3.629 billion). In 2017, the top rank for absorbing the Privilege Fund was held by Gunungkidul Regency at IDR 24.883 billion and followed by Bantul Regency ( IDR 15.907 billion), Kulonprogo Regency ( IDR 15.043 billion), Sleman Regency ( IDR 14.377 billion), and Yogyakarta Municipality ( IDR 6.098 billion) (Bappeda 2018).

Concerning the distribution of Privileges Fund allocations within the OPD scope, both within the DIY Regional Government and OPD within five districts/cities. The DIY Culture Office held the top 5 positions for implementing the privilege program for five consecutive years, 2013–2017, where based on the order of year, the percentages of absorption are 55, 64, 58, 55, and 41%. In 2013, the second to fifth rank was occupied by the Education Office 14.8%, Social Service 9.6%, Regional Library & Archives Agency 5.3%, and BAPPEDA 2.9%. In 2014, the second to fifth positions were occupied by the Kulonprogo Culture & Tourism, Youth & Sports Office 5%, the Yogyakarta City Culture and Tourism Office 4.8%, the Gunungkidul Culture & Tourism Office 3.6%, and the Bantul Culture and Tourism Office 3.4%. While the second to fifth rank in each year can be observed in the following explanation.

In 2015, the second to fifth ranks were held by the Kulonprogo Regency Culture & Tourism, Youth & Sports Office 5%, Gunungkidul Culture and Tourism Office 4.26%, Bantul Culture and Tourism Office 4.18%, and lastly Dishubkominformo DIY 3.4%. Meanwhile, in 2016, the second to fifth top positions were held by the Kulonprogo Regency Culture and Tourism, Youth & Sports 7%, Tourism Office 5.9%, Sonobudoyo State Museum 5.82%, and Yogyakarta Cultural Park 3.9%. Finally, in 2017, the second to fifth-highest ranking was held by the Yogyakarta Cultural Park 16%, the Kulonprogo Public Works Service 6.1%, the Gunungkidul Regency Culture and Tourism Office 5.6%, and the Bantul Culture and Tourism Office 3.6%.

When examining the performance in the implementation of the privilege program, both within the scope of the Special Region of Yogyakarta Regional Government and Regional Government Organizations in the area of the Regency/City. The absorption of the Privilege Fund, which is juxtaposed with the number of activities over five years (2013–2017), shows an increase and improvement in performance. In five years, the number of privileged program activities was 118, 132, 200, 131, and 129. Meanwhile, the percentage of absorption of funds in a series of years was 23.58, 51.93, 87.22, 97.13, and 96.69%. From these data, we can be seen that the implementation performance shows improvement and the optimal utilization of funds. Except for 2013, 31 activities were not carried out due to the limited implementation time, only for two months.

The implementation of privilege affairs from 2013 to 2017 showed significant progress. Physical and financial performance shows the effectiveness of execution

that is getting better from year to year. Optimizing privileged funds for implementing the five privileges matters has significance for regional development targets (Prehantoro 2020).

## 2.2 *Privilege Fund*

The special autonomy law gives the provincial government the authority to make decisions in all sectors except foreign affairs, defense, monetary and fiscal policy, religion, justice, and a much higher share of revenue coming from Papua than other provinces. It stipulates that the province will receive 80% of revenues from the forestry, fisheries, and mining sectors, 70% from the oil and gas sector until 2026, and 50% after that. In addition to financial transfers from the central government received by all provinces, until 2021, Papua will receive an additional special autonomy fund [dana otsus] of 2% of the total national General Allocation Fund (DAU) (Resosudarmo et al. 2014).

Privilege funds have an essential role in optimizing the region's potential and prospering the people. Badrudin and Pronosokode (2019) found that the Privilege Fund in Yogyakarta increased economic growth and improved welfare. It will undoubtedly be achieved if it is accompanied by good fund management.

Hassan et al. (2020) analyzed the management of special funds in Aceh and found that three factors contributed to the sub-optimal management of Aceh's special autonomy funds. First, regulations for the management of Aceh's special autonomy funds have not been standardized and are frequently changed, so they cannot be used as complete guidelines. Second, there is unclear authority for managing the special autonomy fund between the provincial and district/city governments, so there is no good coordination between the parties. Third, the poor management of Aceh's special autonomy funds has caused development and community empowerment not to be well-targeted. Based on the findings, we can be concluded that these three factors hinder Aceh's special autonomy funds from meeting the objectives of realizing the development and welfare of the Acehnese people.

On the other hand, in the management of special funds, the Yogyakarta local government allocates autonomy funds in activities designed and approved by the Ministry of Finance, considering that the privileges received are special allocation funds from the central government. Related to the poverty rate, which is still high in Yogyakarta, programs financed with special autonomy funds are expected to leverage poverty alleviation. However, this leverage effect has not yet succeeded in appearing in implementing the autonomy program in Yogyakarta (Harsono and Yuanjaya 2020).

Another finding by Sulistiono and Efendi (2018) states that in the concept of Good Governance, the government has not shown an attitude of transparency, accountability, and responsiveness to the community, even though the percentage of absorption and program realization is already terrific. In fact, in the field, it is not following the results. These problems include the lack of government socialization to the

public on accessing the Privilege Fund and special relationships between bureaucrats. Reports from the government. And the community in approving proposals, programs, and activities that are considered unable to prosper the community in general.

### 2.3 *Good Governance*

To achieve goals, an organization must have good governance. The United Nations Development Program (UNDP) identified nine good governance elements, including participation, the rule of law, transparency, responsiveness, consensus orientation, equity, effectiveness and efficiency, accountability, and strategic vision. The Indonesian government in state law no. 28/1999 mentions seven governance principles: legal certainty, orderly government organizing, public concern, transparency, proportionality, professionalism, and accountability (Ambarriani et al. 2020).

Governance is the ability to work together in solving collective problems (Dang et al. 2016). There are two main tasks in governance: addressing joint issues and turning challenges into opportunities and outcomes effectively (Kießling and Pütz 2020). In government, good governance becomes very important because the government's task is to manage and ensure the community's welfare. In practice, the management of an area, both district and province to the State, involves three main actors, namely the government, the private sector, and the community (Hoppe and Miedema 2020; Ulnicane et al. 2021; Campanale et al. 2021).

In studies in various kinds of literature, it is stated that local governments demand central government to do decentralization so that each region gets special autonomy in managing its territory (Hoppe and Miedema 2020). Indonesia has long been decentralizing, even in certain areas with historical value and unique potential, earning the special nickname regions and receiving special funds, such as Yogyakarta, Aceh, and Papua.

Ishak et al. (2020) stated that the synergy between bureaucracy and politics is needed in building good governance. Several factors that can positively influence the relationship between bureaucracy and politics on good governance are authority, human resources, and recruitment system (Ishak et al. 2020). The government must prioritize professional empowerment in filling the bureaucracy and politics to reduce corruption and nepotism in an irrational recruitment system (Ishak et al. 2020).

Indonesia, born from a unique history that was limited in forming its culture, society, economy, and political system, provides a clear example of how public reform of the bureaucracy has been re-contextualized based on contextual characteristics unique to Indonesia (Gaus et al. 2017). Good governance is the main prerequisite for realizing the people's aspirations in achieving the goals and ideals of the nation and State. In this case, it is necessary to develop and implement an appropriate, transparent, and tangible accountability system so that government administration can effectively, successfully, and responsibly and free from corruption, collusion, and nepotism (Uar 2016).

In implementing good governance, the bureaucracy is faced with various problems such as the low quality of national education, poverty that is still rampant, bureaucratic morale, especially corruption that often occurs in this country, weak law enforcement in realizing a welfare state. Corruption in Indonesia is a chronic and widespread phenomenon, namely good governance, eroding the rule of law, hindering economic growth efforts, increasing social inequality, and distorting the nation's competitiveness in the global economy ( Adi 2018).

### 3 Research Method

Determination of the sample is done by sampling technique, Clustered random sampling. The number of samples in this survey is 462 respondents with a  $\pm 5\%$  margin error at the 95% confidence level. The data collection method was to select respondents who were interviewed face-to-face using a questionnaire by interviewers who had been trained. Survey quality control is the field interviewer at least a student or equivalent and training in conducting the survey.

The validity and reliability of the instrument in this study, triangulation of data sources were carried out. The core purpose of using source triangulation is to increase the credibility and reliability of the data. By triangulating data sources, researchers explore the truth of certain information through several informants. So that later the results of each informant will be mutually correct results of the informants (Fig. 1).

This study uses three primary data sources: the palace and the Pakualaman, the district and provincial governments, and the campus and related communities. From the three data, triangulation was carried out to increase the validity and reliability of the research data (Yin 2009).

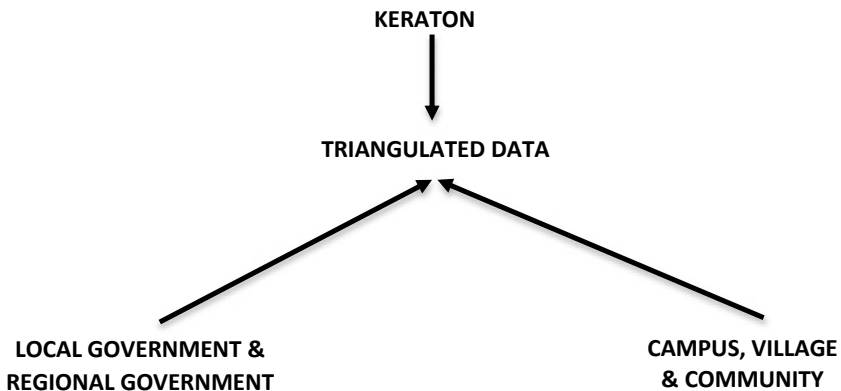


Fig. 1 Data source triangulation

## 4 Result and Discussion

### 4.1 Respondent Characteristics

Respondents in this study were 462 consisting of 30% women or 137 respondents, and 70% male respondents or 325 people. This survey obtained all-female and male respondents from 4 districts and one city in Yogyakarta. The composition of the respondents' work varies. Of the total respondents, there are 76% or a total of 349 respondents working outside of civil servants (PNS). The remaining 24% of respondents are Civil Servants at the provincial and district/city levels. Judging from the education level of the respondents, university graduates dominate. A total of 191 respondents, or 41%, are graduates from tertiary institutions (undergraduates). Respondents with the second most recent education are senior high school graduates/equivalent, with a total of 142 people or 31%. The other is that 17% or 80 respondents have graduated from master degree and doctoral degree, the last education is junior high school graduates /Equivalent by 6% or 30 respondents. In contrast, the respondents with a graduate-level of elementary school/Equivalent were 4% or 19 people. The aspect of the age of the respondents, this survey shows that the ages of the respondents are varied. The majority of respondents in this survey are Yogyakarta residents aged 51 to 60 years, with 29% of respondents. Next, they are 41–50 years old (23%), 21–30 years old (16%), 31–40 years old (15%), 61–70 years old (11%), age 10–20 years (3%), 71–80 years old (2%).

### 4.2 Multi Stakeholders Point of View

The privilege programs have shown their results in spatial affairs, which can be seen with the naked eye. The question is, how about cultural experiences? How does the privilege program also affect development in cultural affairs? Or how overall the privileged program has been going? In this section, we will present several multi-stakeholder voices regarding the specialization process of Yogyakarta. The next question is, does the direction of cultural policies and strategies as formulated by the local government describe all Yogyakarta stakeholders: residents, universities, artists, and culturalists, as well as other community organizations? To what extent have stakeholders in Yogyakarta responded and interpreted the direction of these policies and strategies? To what extent have the citizens' voices responded to the five years of Privilege? How do multi-stakeholder voices share their views on Yogyakarta today? What changes have been seen and felt by the residents related to implementing the Special Law of Yogyakarta? What programs are considered successful and have an impact on Yogyakarta's life? Or which programs are considered ineffective to achieve the objectives as stated in the Special Law of Yogyakarta? Listen to the voices of residents and other stakeholders in this section.

The method used to see multi-stakeholder voices is through in-depth interviews. Interviews are addressed to parties, both individuals and organizations that researchers consider concern for privileges. These parties consist of 5K elements: Keraton and Puro Pakualaman, Kaprajan [local government], Campus, Village, and Community, as well as the voices of the millennial generation. The results are obtained as follows:

The sound from the palace and puro Pakualaman judged that the five years of Privilege had gone well. There have been positive changes in the internal governance of the palace and puro Pakualaman. Several programs felt to impact the governance and life of the palace and puro Pakualaman. The infrastructure improvement, the welfare of the courtiers, and the internal activities of the palace and the puro Pakualaman. However, quite a few things need to be addressed and evaluated for their implementation. The important note is that there are not yet unified concepts interpreted together about privileges from a philosophical, conceptual, and practical level. Second, the formulation of the relationship between the palace, the Pakualaman Temple, and the local government has not been well-coordinated, so this causes the cultural development ideas of the three institutions to be not fully synergized and synchronized. Inter-institutional communication is also an important focus.

The voices of the head of the government or the state civil apparatus [ASN] in the local government and district government indicate that there has been improvement in implementing the privilege program. At the beginning of the implementation of UUKY, ASN felt that the privilege and funding program were an additional workload. Because in addition to being obliged to carry out regular programs, ASN also carries out privilege programs that are not part of their performance assessment. So it feels like a burden. At the beginning of implementing the privilege program, several ASN and OPD "avoided" allotments of receiving special program funds. However, things began to improve with the emergence of awareness that the privilege program is a mandate given by UUKY to regional governments as recipients of the mandate.

The voice of the campus seems to be a voice that is not enough to be heard in the implementation of the privilege program. The campus is not seen enough or involved in implementing the privilege program for five years running. The privilege program has not given a particular color to universities in Yogyakarta. Also, universities have not been involved in implementing the privilege program. Some of the informants even mentioned that without the privileges. The campus had made a significant contribution to the image of Yogyakarta as a student city. One of the positive aspects of the role of the campus is the establishment of knowledge production that is characteristic of Yogyakarta. Another thing in the campus spotlight is the concept of shared meaning about Privilege, both in terms of philosophy, and planning to the evaluation model used to measure its effectiveness. Another highlight is that the campus's non-involvement in privileges can also be seen in the model of introducing the privileges and culture of Yogyakarta, which impacts the behavioral patterns of the academic community in the Yogyakarta community.

Another thing related to cultural heritage, the role of Privilege, looks quite significant. From the voices of artists and culturalists, the existence of privileges, customs,

and traditions is becoming increasingly attractive. Before the privilege fund, communities did simple art, but with the stimulus from the privilege fund, it became more lively, which was previously unthinkable, became available and stimulated. Once, the local government still prioritized cultural heritage objects; after receiving special funds, the government helped and cooperated with cultural groups to maintain cultural heritage.

However, it is also heard loudly that privileged programs are still focused on wasteful programs, programs that do not provide direct feedback for cultural development in general for Yogyakarta. The number of festivals still applies to artistic activities enjoyed by “that’s all” artists. On the other hand, this resulted in fragmentation between artists “who received privileged funds,” and artists who did not/have not received privileged funds.

In general, the specialty of Yogyakarta has not touched the pattern of systematic artistic development. There are not many arts centers and cultural centers in various areas of Yogyakarta. There has not been a frequent emergence of cultural centers in the Yogyakarta area. Privileges have not been able to grow and systematize cultural ideas, artistic ideas into knowledge production and implementation. From a cultural point of view, the tangible and intangible have not been fully explored. The local government has not seen the potential of Yogyakarta’s cultural wealth, both tangible and intangible, as capital for complete and systematic cultural development. The informants in this study also suggested reducing programs that “spend” money quickly and replaced with programs to empower artists and culturalists that impact the welfare of its citizens. Privilege must transform culture, not only art but also how humans build a civilization for the glory of their nation.

From the community and citizen perspective, there are aspects of participation in preparing privilege programs that do not involve citizens enough. The informant also assessed that most programs are still catch-up. So, that programs that are useful for the benefit of many citizens in improving welfare have not been appropriately accommodated and have not answered the real needs of the people of Yogyakarta, both in terms of welfare, sense of security, health, and poverty reduction. Another aspect highlighted by the community voice was the socialization for residents to easily access privileged programs. However, it is also recognized that the Privilege has encouraged residents to develop a love for Yogyakarta.

From the millennial generation, there are faint voices that Privilege only belongs to parents. The young millennial generation who are familiar with technology has not been involved enough to fill the privileges from the perspective of millennial youth. Privilege programs are not found in social media networks. The young generation can reach no promotion of privilege program works through social media: Facebook, Instagram, Twitter, and others. It creates the impression that Privileges are only consumed by the elderly. The elites should only consider the privileges in the DIY government. So that millennials don’t see what Yogyakarta’s privileged programs are a concern. Millennials also see that the privileges of Yogyakarta are not yet grounded, still at the level of concepts that are not easily understood by the public, including the millennial generation. This kind of assessment also comes out of the narrative of cultural activists fronted by millennial youths.

### 4.3 *Best Practices and Worst Practices*

The journey of the Privilege Program in the Special Region of Yogyakarta for the last five years has been able to produce various arts and cultural activities in the community. The programs that have been implemented for five years aim to strengthen the identity and cultural products in DIY as the foundation of the Privilege itself. In addition, the programs that have been implemented also have the vision to open up new opportunities for improving and equitable distribution of the welfare of DIY residents (Table 1).

Based on the findings in the field, the implementation of the special program of DIY gave some excellent results to be further maintained and developed in the future—the Distinguished Program’s mission to strengthen cultural identity results from joint creation between layers of society. For example, the activity of providing gamelan musical instruments at State High School 1 Pakem. Other art groups can also use the assistance of gamelan instruments around the State High School 1 Pakem school area in turns. Art as part of culture is the result of human work together. Therefore the aid of art tools should also be used jointly by every party who wants to preserve culture.

The example above provides an essential lesson that culture is common property in that culture is developed by humans as creators collectively for peace and the benefit of living together. This is demonstrated by the Bersik Kali activity in Bejiharjo Village, Gunung Kidul. Where is the difference between religious teachings and traditional cultural practices? It can find a way out by looking for values that can unite and give each other a space of articulation for both. In this way, culture opens a social space that can connect every human being despite having different understanding backgrounds.

Likewise, culture can unite the differences that arise from formal regulations, as shown by Panggungharjo Village, by incorporating the philosophical values of Jogja Culture in building BumDesa. Panggungharjo Village can combine two laws that are always considered contradictory, namely the Privileges Law and the Village Law. The concept of culture as a collective human creation can mix several things balanced. Local people at the village level have the confidence to experiment, create cultural development, and create tourism products. The existence of a legal/regulatory framework that ensures sustainability and supports this is the key to the development of the local economy of Jogja in the future.

Another suitable key is that culture can also provide creative space for everyone regardless of age or age. Pride of identity as a citizen of a special Jogja raises the imagination to preserve and develop cultural potentials that have tended to be forgotten. The folklore writing activity initiated by the Cultural Council of Gunung Kidul Regency was filled mainly by cultural activists of the older generation. Meanwhile, the younger generation created the Jogja Film Maker Association, which aims to create an even distribution of cultural funds for young people who need to develop in film.



**Table 1** Best practices and worst practices

Stakeholders	Best practices	Worst practices
Keraton and Puro Pakualaman	Improvement of infrastructure, the welfare of courtiers, increased internal activities of the palace and puro Pakualaman	There is no unified concept with a shared meaning of Privilege, both from a philosophical, conceptual, and practical level The formulation of the relationship among the palace, the puro Pakualaman, and the local government has not been well-coordinated. So this has led to the ideas of cultural development The institution is not yet fully synergized and synchronized. Communication between institutions is also an important highlight
Kaprajan or state civil apparatus [ASN] in local government and district governments	Improved progress in privilege program implementation processes	Privilege programs and funds are additional workloads. Because in addition to being obliged to carry out regular programs, ASN also carries out privilege programs that are not part of their performance assessment
University	The establishment of knowledge production that is characteristic of Yogyakarta's characteristics	The privilege program has not given a particular color to universities in Yogyakarta
Community and citizens	Community traditions become alive and active, and cultural heritage is increasingly protected	The privilege program is still focused on wasteful programs, programs that do not provide direct feedback for cultural development in general for Yogyakarta
Millennial generation	The Privilege of providing creative space for the millennial generation in the cultural aspect	The young millennial generation who are familiar with technology has not been involved enough to fill the privileges from the perspective of the millennial youth The Privilege of Yogyakarta is not yet grounded, and it is still at the level of concepts that are not easily understood by the public, including the millennial generation

Likewise, based on the results found in the field, each program activity carried out for the past five years has also produced valuable lessons for several improvements in the future. Namely, to make more efforts even to distribute cultural funds for the younger generation, exemplified by the Jogja Film Maker Association. Culture needs regeneration in the emergence of new young art figures to continue the baton from the older groups. The practice of the Privilege Program implemented in the last five years seems lacking in terms of encouraging the emergence of prominent artists from the younger generation. However, it must also be noted that, in general, youth activists in DIY are trying to take the momentum in this Privilege era by strengthening the activities of art and tourism in their respective villages. They continue to find a balance between the threat of erosion of local culture, the commercialization of tourism, and the preservation of the values of their respective local wisdom. The future of culture lies in the younger generation, namely humans as cultural actors. Seeing culture from the actor's point of view presents a challenge to balance various aspects of the world of culture, such as identity, economy, politics, and so on.

The clash between the two things above has also created a follow-up effect that threatens the peace of DIY residents, for example, in the form of a thickening of particular identities that threatens pluralism. One of the specialties of DIY is built on the foundation of the diversity of its layers of society. However, this thickening of identity provides a step back for the struggle for values—The value of Privilege itself. An example of this can be seen in excluding specific religions in student boarding houses. The Privilege of Jogja has succeeded in getting support, not because of chauvinistic sentiments, but rather because the community refuses to be like other regions due to local democratic practices, which often lead to social unrest. The specialty of Jogja should provide an example to the other areas on how to have a healthy democracy without the need to exclude certain community entities.

The anxiety is felt for the residents' peace. It also comes from the lack of guaranteed regulations regarding the Land Perda. The regional government must answer people's concerns about losing access to the use of SG/PAG land by providing solid legal guarantees regarding aspects of the use of these lands. At the beginning of 2017, the Regional Government had issued a Perda on Land, hoping that it would unravel the source of land conflicts in Yogyakarta. However, some critical notes regarding the Perda are that no balanced regulation will guarantee sustainable access to SG PAG land in the future. Providing guarantees to the people of Jogja who have used the land for several generations is very important in the form of regulations that the people must address the government immediately.

One other thing is until now; there is still not a common understanding of how the best mechanism for transparency of the Privilege Fund is for the community. It has become a concern among the community, but it has not found an estuary for the answer. This study found some of the problems mentioned above based on the results in the field. This study should note that no Privilege Program has been implemented to anticipate some of these problems. For this reason, it is necessary to pay attention in the future to how the Privilege Program also has the vision to answer these problems.

## 5 Conclusion and Implication

In general, the specialty of Yogyakarta has not touched the pattern of systematic artistic development, and there are not many arts centers and cultural centers in various areas of Yogyakarta. There has not been a periodic emergence of cultural centers in the Yogyakarta area. Privileges have not grown and systematize cultural and artistic ideas into knowledge production and implementation. From a cultural point of view, the tangible and intangible have not been fully explored. The local government has not seen the potential of Yogyakarta's cultural wealth, both tangible and intangible, as capital for complete and systematic cultural development. The informants in this study also suggested reducing programs that "spend" money quickly and replaced with programs to empower artists and culturalists that impact the welfare of its citizens. Privilege must transform culture, not only art but also how humans build a civilization for the glory of their nation.

Culture requires regeneration in the emergence of new young art figures to continue the baton from the older groups. The practice of the Privilege Program implemented in the last five years seems lacking in terms of encouraging the emergence of prominent artists from the younger generation. However, it must also be noted that, in general, youth activists in DIY are trying to take the momentum in this Privilege era by strengthening the activities of art and tourism in their respective villages. The clash between the two things above has also created a follow-up effect that threatens the peace of DIY residents. One of the privileges of DIY is built on the foundation of the diversity of the layers of society, for example, in the form of thickening of particular identities that threatens pluralism. However, this thickening of identity provides a step back for the struggle for the values of the Privilege itself.

**Acknowledgements** The authors gratefully acknowledge the financial support from the Kementerian Riset-Badan Riset Nasional. Republic of Indonesia via Hibah Riset Terapan, under contract 006/DirDPPM/70/DPPM/PDUPT KEMDIKBUDRISTEK/VII/2021.

## References

- Adi, Y.: Bureaucratic reform to the improvement of public services challenges for Indonesia. *J. Ilmu Adm. Publik* **6**(1), 15–29 (2018)
- Ambarriani, A.S., Sunarni, C.W., Budiharta, P.: Implementation of good governance in Indonesia's village fund program (program Dana Desa) to accelerate community welfare: a case study in Sleman, Daerah Istimewa Yogyakarta Province. *Int. J. Innov. Manag. Technol.* **11**(4) (2020)
- Arlinwibowo, J., Retnawati, H., Kartowagiran, B., Mustaqim, Y.: Inclusion schools in the Daerah Istimewa Yogyakarta Province, Indonesia: regulations, facilities, and aspirations of teachers. *Int. J. Early Childhood Spec. Educ. (INT-JECSE)*, **13**(1) 09–19 (2021)
- Badrudin, R., Pronoskodewo, B.G.: The effects of privilege funds on public welfare and poverty in special district of Yogyakarta. *Best Pract.: Synchronizing Corp. Cult. Spirit Innov. Sustain. Good Govern.* **8** (2019)

- Bappeda DIY: Rencana Pembangunan Jangka Menengah Daerah Daerah. Istimewa Yogyakarta 2013–2017. Bappeda DIY, Yogyakarta (2018)
- Campanale, C., Mauro, S.G., Sancino, A.: Managing co-production and enhancing good governance principles: insights from two case studies. *J. Manag. Govern.* **25**(1) (2021)
- Casula, M.: A contextual explanation of regional governance in Europe: insights from inter-municipal cooperation. *Public Manag. Rev.* **22**(12), 1819–1851 (2020)
- Cramer, J.M.: The function of transition brokers in the regional governance of implementing circular economy—a comparative case study of six Dutch regions. *Sustainability* **12**(12), 5015 (2020)
- Dang, T.K.P., Visseren-Hamakers, I.J., Arts, B.: A framework for assessing governance capacity: an illustration from Vietnam’s forestry reforms. *Eviron. Plann. C. Gov. Policy* **34**(6), 1154–1174 (2016)
- Efendi, D., Sanahdi, R., Putra, A.A.: Big budget, low impact: an alternative evaluation on benefit and impact of special fund in Di Yogyakarta, 2013–2015. *2nd J. Govern. Polit.* 263 (2017)
- Gaus, N., Sultan, S., Basri, M.: State bureaucracy in Indonesia and its reforms: an overview. *International Journal of Public Administration.* **40**(8), 658–669 (2017)
- Harsono, D., Yuanjaya, P.: Special autonomy and poverty in special region of Yogyakarta. In: *The Proceedings of the 4th International Conference of Social Science and Education, ICSSSED* (2020)
- Hasan, E., Dahlawi, Ubaidullah, Nofriadi, Helmi, Sari, N.: The optimization management of special autonomy funds for acehnese people welfare. *Int. J. Criminol. Sociol.* **9**, 782–789 (2020)
- Hoppe, T., Miedema, M.: A governance approach to regional energy transition: meaning, conceptualization, and practice. *Sustainability* **12**(3), 915 (2020)
- Iqbal, M., Pratiwi, V.P.: Land management in Yogyakarta special region. *J. Govern. (kajian Manajemen Pemerintahan Dan Otonomi Daerah)* **5**(2), 89–105 (2020)
- Ishak, N., Hasibuan, R.R., Arbani, T.S.: Bureaucratic and political collaboration towards a good governance system. *Bestuur* **8**(1), 19–26 (2020)
- Kiessling, N., Pütz, M.: Assessing the regional governance capacities of spatial planning: the case of the canton of Zurich. *Reg. Stud. Reg. Sci.* **7**(1), 183–205 (2020)
- Mashdurohaturun, A., Ridlo, A., Gunarto: Supervision of the regional people’s representative assembly (DPRD) special region of Yogyakarta on justice-based privileges funds. *Int. J. Bus. Econ. Law* **24**(4), 92–98 (2021)
- Musacchio, A., Re, V., Mas-Pla, J., Sacchi, E.: EU nitrates directive, from theory to practice: environmental effectiveness and influence of regional governance on its performance. *Ambio* **49**(2), 504–516 (2020)
- Nguyen, B., Canh, N.P.: The effects of regional governance, education, and in-migration on business performance. *Kyklos* **73**(2), 291–319 (2020)
- Nugroho, D., Mashdurohaturun, A.: The governance of sultan ground land position and Pakualaman ground in the framework of national law and the special law of Yogyakarta special region in achieving justice. *Int. J. Bus. Econ. Law* **24**(2), 101–108 (2021)
- Omri, A., Hadj, T.B.: Foreign investment and air pollution: do good governance and technological innovation matter? *Environ. Res.* **185**, 109469 (2020)
- Omri, A., Mabrouk, N.B.: Good governance for sustainable development goals: getting ahead of the pack or falling behind? *Environ. Impact Assess. Rev.* **83**, 106388 (2020)
- Pomeranz, E.F., Stedman, R.C.: Measuring good governance: piloting an instrument for evaluating good governance principles. *J. Environ. Plann. Policy Manage.* **22**(3), 428–440 (2020)
- Prehantoro, P.: Special region of Yogyakarta in the perspective of asymmetric de-centralization reviewed from the law number 13 year 2012. *Int. J. Multicult. Multireligious Underst.* **7**(8), 451–458 (2020)
- Resmi, S., Pahlevi, R.W., Sayekti, F.: Implementation of financial report and taxation training: performance of MSMEs in special regions Yogyakarta. *J. Siasat Bisnis* **25**(1), 57–68 (2021)
- Resosudarmo, B.P., Mollet, J.A., Raya, U.R., Kaiwai, H.: Development in Papua after special autonomy. In: *Regional dynamics in a decentralized Indonesia*, pp. 433–459. ISEAS Publishing (2014)

- Sa'adah, N., Hadi, C.: Work value of Yogyakarta royal servant palace towards post Yogyakarta privilege law. *Acad. Res. Int.* **9**(2), 95–102 (2018)
- Sakir, S., Sarofah, R.: Accountability Model for utilization of privilege funds special region of Yogyakarta 2013–2017. *ARISTO* **8**(2), 328–342 (2020)
- Sulistiono, B., Efendi, D.: Evaluation of the use of privileged funds of Yogyakarta on cultural sector in Sleman 2016. In: *Forum Ilmu Sosial*, vol. 45, no. 2, pp. 87–93 (2018)
- Uar, A.: Pengaruh pelayanan prinsip-prinsip good governance terhadap kinerja pelayanan publik pada badan pertanahan nasional kota ambon. *Otoritas: J. Ilmu Pemerintahan* **6**(1), 1–11 (2016).
- Ulnicane, I., Eke, D.O., Knight, W., Ogoh, G., Stahl, B.C.: Good governance as a response to discontents? Déjà vu, or lessons for AI from other emerging technologies. *Interdisc. Sci. Rev.* **46**(1–2), 71–93 (2021)
- Yin, R.K.: *Case Study Research: Design and Methods-Applied Social Research Methods Series*. Sage, London (2009)

# How Airline Service Quality (AIRQUAL) Affects Customer Decision Making in Airline Choices—A Conceptual Paper



Muhammad Izwan Mohd Badrillah, Adibah Shuib, and Shahrin Nasir

**Abstract** Airline service quality (AIRQUAL) is an important element for all service providers especially in the airline industry. It derives from the popular service quality (SERVQUAL) model and appear as a medium for gauging customers' satisfaction towards the services offered to them during the service encounter. Most airlines worldwide, understood the necessity in meeting customer satisfaction with outstanding quality services, and set about toward exploring for proxies to reassure its customers on the grounds of service quality. Hence, the objective of this conceptual study is to develop a modified airline service quality (AIRQUAL) scale in order to gauge the indicators within the dimensions of airline service quality and other expository attributes that can be applied to predict customers' decision-making in airline choices. Most studies in South East Asian (ASEAN) only focuses on the original element of the airline service quality (AIRQUAL), thus highlighting the need to include airline cultural management as the new element in the airline service quality (AIRQUAL) scale. The final scale can be drawn on to outline a simple matrix for evaluating or tracking process for South East Asia (ASEAN) airlines performance, and it also may be a practical indicator toward determining service quality regionally. This study also presents an opportunity for further studies and will aid the stimulation on the momentum of current research for airline service quality and customers' decision-making in airline choices.

**Keywords** Airline service quality · Customer satisfaction · South East Asia (ASEAN) airline industry · Service Quality (SERVQUAL) · Customers' decision-making in airline choices

---

M. I. M. Badrillah (✉)

Malaysia Institute of Transport (MITRANS), Universiti Teknologi MARA, Shah Alam, Selangor, Malaysia

e-mail: [badrillahizwan@uitm.edu.my](mailto:badrillahizwan@uitm.edu.my)

A. Shuib

Faculty of Business and Management, Universiti Teknologi MARA, Shah Alam, Selangor, Malaysia

S. Nasir

Faculty of Computer and Mathematical Sciences, Universiti Teknologi MARA, Shah Alam, Selangor, Malaysia

## 1 Introduction

The airlines industry can be described as the business of transporting paying passengers and cargo by air along regularly scheduled routes, typically by airplanes and helicopters. The commercial airline sector experienced remarkable gains in the last 30 years. Nowadays, airlines have been able to connect more people and places than before. Traveling by air is more accessible and more people can take advantage from this freedom to fly for businesses as well as leisure. Airlines too, have managed to gain more customers in rendering breakthrough services by providing the newest technology with standardized policy to reach customers' expectations on service quality. The way companies manage their business, the customers' behaviour and the way these customers respond in terms of the products and services offered by the company are very much influenced by diverse applications using internet and social media that are being utilized. Social and digital marketing can lead to lowered costs, better communication (relaying information and receiving feedback for improvement of products and quality services) as well as increased sales and brand awareness (Seo and Park 2018; Tian et al. 2019). Through the same technologies, customers are being facilitated towards making informed data-driven decisions concerning their airline choices and services required.

Currently, ICAO/IATA stated that there are more than 5,000 airlines codes worldwide. The figures include airlines operating on commercial and non-commercial operations. Nonetheless, the more acceptable figures are only in between 770 to 800 commercial airlines that operate globally through officially recognised scheduled flights. Flights scheduled globally grow steadily since the early 2000s and is anticipated to reach 40.3 million by 2020 (Statista 2019). Khudhair et al. (2019) stated that the availability of diverse range of airlines has resulted in substantial impact on the competition in the airline market since customers have a wide range of alternatives to choose from. Service quality is the antecedent of customers' satisfaction which consequently resulted in their repurchase intentions and loyalty (Chen et al. 2019; Saleem et al. 2017; Shen and Yahya 2021). Providing a high quality of service to meet passengers' requirements and satisfaction is paramount for airlines to sustain customers, by retaining and attracting new customers, and to maximise profits (Baumann et al. 2017; Chonsalasin et al. 2020; Rahim 2016; Shukla 2013). This leads to a strong competition among airlines subjecting them to constant efforts in improving service quality by meeting customers' needs and satisfaction while ensuring that customers get the high-quality service in return for the airplane ticket paid.

Culture too, plays an important role towards customers' perception on satisfaction for the perceived service quality. Issues were raised by scholars (Pantouvakis 2013) on discrepancies of services received by customers of different ethnicities and culture. Kim and Park (2017) remarked that customers from Japan, China, South Korea and the United States complained on different matters which do have an impact on the provision of airline services.

Therefore, this study attempts to examine the airline service quality (AIRQUAL) scale in practice and also to investigate the relationship of service quality (airline

tangible, terminal tangible, airline personnel, empathy and airline culture management) on customer's decision-making on airline choices for the South East Asia (ASEAN) airline industry perspective, namely Indonesia, Malaysia & Thailand. This study is further interested in assessing the mediating effect of customer satisfaction towards airline service quality (AIRQUAL) scale in customers' decision-making in airline choices. Hence, this conceptual paper intends to measure the echelons of airline service quality (AIRQUAL) for airlines in the South East Asia (ASEAN) countries from the customers' decision-making in airline choices and to determine most apt and analytical dimension for the airline service quality (AIRQUAL) scale. This is carried out by examining on pertinent literatures as the existing research is still preliminary.

The structure of this paper consists of an introduction on the airline industry and discussion on the details of this study is also discussed in the literature review. A brief explanation on the methodology used is also explained and a conceptual framework is provided. Lastly, the findings and conclusion is stated at the end of the paper.

## **2 Literature Review**

This section presents the literature review done on relevant past studies which is intended to provide overview of studies which have been carried out, especially concerning the service quality (SERVQUAL) model and the airline service quality (AIRQUAL) scale. Both model and scale were developed to aid organisations on a course of action and also to increase customer experiences where the airline service quality (AIRQUAL) scale is a service quality model that focuses on the airline industry, whereas the SERVQUAL model were broadly researched and applied in many industries. Similarly, airline service quality (AIRQUAL) has been the topic of great interest for many researchers worldwide.

### ***2.1 Relationship Marketing***

In the last few years, prior to pandemic COVID-19, the airlines industry market has been progressing aggressively to the extent that striving for preeminence in the airline services is extremely crucial. A sound customer relationship management practices is essential for the airlines industry (Kumudha and Bhunia 2016) in which relationship marketing helps organizations to foster long-term customer relationship. The reason is because of the intangible nature of airline industry services as part of service industries and also because of the high level of interaction with customers. By strengthening the relationship marketing, this will result in customers retention, increase profitability and sustainable competitive advantage to the airline company (Hoang 2015). This applies to various organisations in numerous industries, particularly in the airlines industry (Mohamud 2019). Stanley and Kamau (2013) reveals



that customers of Kenya Airways were confident on the offerings and service that was delivered, which proves that the airline relationship marketing program is working and continues to reap positive impact. Jeng (2016) stated that an airline brand credibility will increase when they focus more on managing relationships with their customers which demonstrates on an airline understanding of its customers has an indirect impact on customers' convenience and commitment. This marketing strategy also enables the airline to maintain its relationship with customers and help to foster better decision making and purchase intention for customers.

### ***Impacts of Relationship Marketing to the Airline Industry***

In today's current business environment, relationship marketing has evolved into a critical component for one-upmanship across all industries. The same can be said to the airlines worldwide, regardless whether they are a full-service airline (FSA) or low-cost airline (LCA). Kupka and Jamart (2009) stated that Air Berlin, a low-cost airline that centres its attention towards relationship marketing. They provided excellent service quality, sets up a 24 h hotline assistance, and offering a frequent flyer program, which is scarce in the low-cost airline market. By doing such services to the customers, it sets them as the pioneer in the airline industry for offering such benefits, thus enabling them to make more profit and gain customer rapidly. There are many more studies done that shows the effects of relationship marketing to the airlines worldwide (Boer 2018; Lan 2015; Salah and Abou-Shouk 2019; Theerathanongwut and Suveatwatanakul 2019). Therefore, it can be said that relationship marketing is the trend nowadays in the airline industry. It helps airlines to be different from competitors, keeping the customers satisfied and strengthen its market share.

### ***Service Quality***

Considering current fierce competition business environment, providing shrewd, excellent services quality to the customers' is adjudge indispensable for all organization. As an example, in the hospitality industry, providing service quality implies to obeying customers' expectations on homogenous grounds. The reason is because service quality is a critical component towards being competitive and also, in refining for a better organizational performance. Tsoukatos and Mastrojianni (Tsoukatos and Mastrojianni 2010) stated that service quality be parallel to quality of a service, which is apparent in customers differentiating betwixt the organization real-time service performance with their expectations. This leads to the creation of gaps between the service offered by the organization and to the expectations by the customers. Therefore, this is considered vital for an organisation to understand the service quality expectations of its customers. This would help the organization to minimize the gap between expectations and perceptions of service quality levels.

A service quality model that is greatly used in various industry is known as the SERVQUAL model. The model was developed by the (Parasuraman et al. 1985). Parasuraman et al. (1985) SERVQUAL model has been the predominantly ply in measuring customers' perception for service quality. The original ten (10) dimensions of the SERVQUAL model consists of reliability, responsiveness, competence, access, courtesy, communication, credibility, security, knowing the customer and tangibles.

It was further defined three years later (Parasuraman et al. 1988), and the five (5) generic dimensions of SERVQUAL model is stated below:

- Tangible; physical facilities, equipment and appearance of personnel,
- Reliability; ability to perform the promised service dependably and accurately,
- Responsiveness; willingness to help customers and provide prompt service,
- Assurance; knowledge and courtesy of employees and their ability to inspire trust and confidence,
- Empathy; caring and individualized attention that the firm provides to its customers.

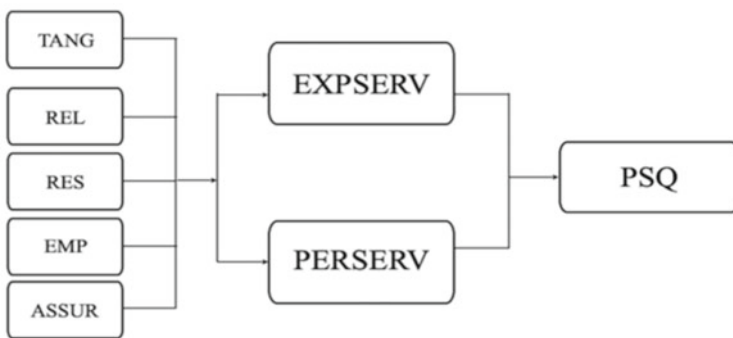
The popularity of SERVQUAL to many researchers is largely due to its usability and versatility in various industry (Fig. 1).

**Criticism of SERVQUAL Model**

However, according to critics, the (Parasuraman et al. 1988) SERVQUAL model only renders a broad evaluation of service quality. It is also thought as not rigorous and, thus cannot be adopted across various industries (Babakus et al. 1992). Issues such as the model is fixed and only focuses on the service delivery were some of the reasons mentioned (Buttle 1996; Cronin and Taylor 1992; Pizam and Ellis., T. 1999; Teas and Carlo 2004; Tsoukatos and Mastrojianni 2010). Based on the criticism. (Bekhet and Al-Alak 2011) suggested that in developing a more realistic model, which could be country, culture, ethnicity, or service sector specific. They also recommended that scholars ought to suggest models fitting to the characteristics of countries, culture, and service sectors.

**The Emergence of AIRQUAL Model**

The airline industry is very competitive nowadays, thus making it quite difficult to measure the service quality. This due as to the fact that there are a wide variety



Note: TANG - Tangible, REL - Reliability, RES - Responsiveness, EMP - Empathy, ASSUR - Assurance, EXPSERV - Expected Service, PERSERV - Perceived Service, PSQ - Perceived Service Quality

Fig. 1 SERVQUAL model (Parasuraman et al. 1988)

of factors that will influence the customers' decision-making. Looking from a customers' point of view, they are always concern on pricing, schedule reliability, flights frequency, food delivery, baggage delivery, in-flight entertainment and cabin service. Thus, this encourages most of the airline to used SERVQUAL in order to evaluate their service quality. However, it was found that the SERVQUAL model is fix and not adaptable to meet the requirements of the airline industry, as it needs to measure both, tangible and intangible.

And since most of the customers' concerns are intangible, airline can only can learn whether passengers are satisfied or dissatisfied with the service from their responses. Due to the abstract nature of the quality, it is quite difficult to measure the conceptualization and measurement of airline service quality (Korkmaz et al. 2015). Therefore, in order for the airlines to satisfy their customers, airlines needs a greater understanding towards customers' needs with the purpose of providing good and high-quality services (Jahmani 2017).

### *AIRQUAL Scale*

In assessing airline service quality, scholars were careful to develop the quality dimensions. Alotaibi (2015) stated that research affiliated towards investigating airline service quality dimension is enduring and quite sizeable. With the availability of data on airline passengers' preferences, necessary mechanism on service quality measuring specific needs for the airline industry were considered necessary.

To serve this purpose, (Bari et al. 2001) invented a method with the aim of assessing service quality, called airline service quality (AIRQUAL) scale. The scale consists of five (5) distinct dimensions; airline tangibles, terminal tangibles, personnel, empathy, and image. It was conducted in North Cyprus and investigated on how AIRQUAL could successfully measure the perception of service quality of airline customers.

The first dimension is Airline tangibles. It enquires on the aircraft interior, the in-flight food and beverages quality, the cleanliness of the plane's toilets, the seating comfort of the plane seats, and the quality of air-conditioning in the plane. The second dimension is terminal tangibles. It queries on the cleanliness of the airport toilets, availability of shop in the airport, parking space availability in airport, dedicated areas for smokers and comfort of waiting hall are some of the items queried. The third dimension of AIRQUAL, is airline personnel. It was designed is to assess the employees working for the airline. Among items asked are about employees' attitude, knowledge, experience, and level of education, personal care of employees to everyone and dutifulness of employees. The fourth dimension of AIRQUAL is empathy, which questions the punctuality of the departures and arrivals, transportation between city and airport. The last dimension of AIRQUAL to airline service quality is image. In this dimension investigates on the availability of low-price ticket offerings, consistency of ticket prices with given service, and image of the airline company.

### *Culture*

According to (Spencer-Oatey and Franklin 2012), culture is extremely difficult term to define. The reason is due to the differences in understanding the concept of culture,

as culture is being defined in three (3) ways, the definition, the usage and the development of culture. However, most scholars agreed that culture bears a strong repercussions on the customers' understanding from the perceived service quality. This means that customers from different culture perceived service quality differently from another. Pantouvakis (2013), Ueltschy et al. (2007) and Yayla-Kullu et al. (2015) confirmed that culture differences affect perceived satisfaction. Their studies stated that cultures that place high value in future orientation, renders better quality in airline services.

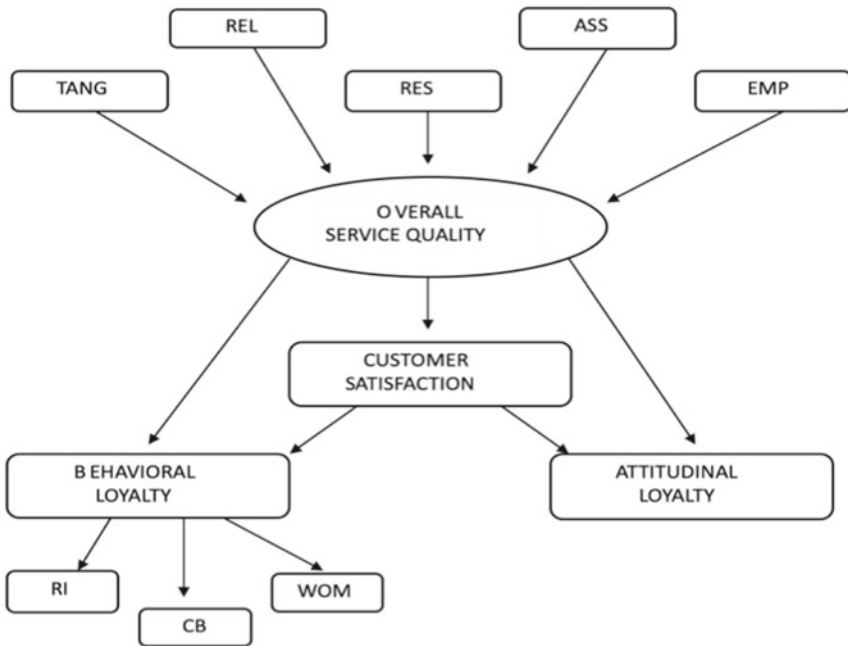
### ***Airline Choices***

There is a considerable amount of studies that explores the factors that customers' considers during the decision making on airline choices. Attributes such as reservations, ticket price, cabin facilities, flight schedule and convenience are among top choices when choosing which airline to fly with. Such scenario has made airline attribute an important variable to consider for customers' in their decision making on airline choices.

Akamavi et al. (2015) studied the pivotal components on passenger loyalty in the low-cost airline (LCA) market. An analysis and comparison between the differences in service recovery, passenger loyalty, passenger trust, passenger satisfaction, price, and employee service self-efficacy were also conducted. The results showed that efficient service employees positively influence service recovery, price and enhanced passengers' trusts. And, (Kim and Park 2017) research on the airline type found that in the case for full-service airlines (FSA), flight schedule, cabin interior and fast check-in processes were vital but for low-cost airlines (LCA) it is air fare, flight safety, the convenience of purchasing the flight ticket and additional charges were important (Fig. 2).

### ***Past Studies Concerning Theory of Planned Behaviour (TPB) and Airline Choices***

Human behaviours are difficult to predict. It can either be common, unusual, acceptable or beyond acceptable limits. For example, certain societies and cultures anticipate different conducts to be either appropriate or unacceptable. Chen and Chao (2015) examined the relationships among various service factors for airlines in Taiwan and China. The results indicated that a customers' conduct will clearly influenced their decision-making in airline choices. Baumann et al. (2017), Buaphiban and Truong (2017) did a similar study for the airline customers in Thailand. The study focuses exclusively on the components of TPB, and the result reveals that passenger attitudes had a favourable affect on buying intentions, while intention significantly influenced buying behaviours. Such findings further strengthen the notion that the TPB model is open to suggestion towards the improvement of the theory (Ajzen 2019).

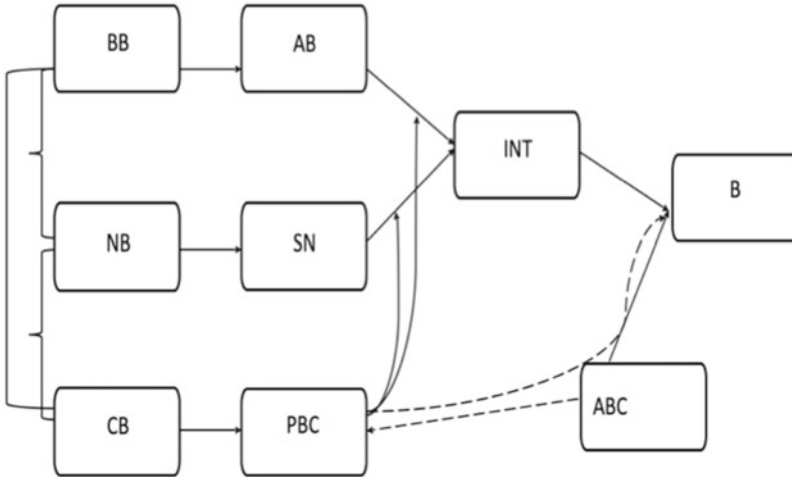


Note: TANG - Tangible, REL - Reliability, RES - Responsiveness, ASSUR - Assurance), EMP - Empathy, PSQ - Perceived Service Quality, CSAT - Customer Satisfaction, (BL) Behavioural Loyalty, (AT) Attitudinal Loyalty.

Fig. 2 AIRQUAL scale and its effect towards customer satisfaction and loyalty (Alotaibi 2015)

### 3 Methodology

Literature study is used as the methodology, as this issue is not well researched. Furthermore, literature approaching also demonstrated the relationship between current and previous researches and elaborated through the assessment on past research theory. Sources reviewed were published in academic journals, book chapters, peer review studies, conference papers also theses and dissertations. Furthermore, authoritative web sites were examined to provide an overview of the issue research (Abdul Aziz and Mat Yatin 2015). To ensure current knowledge and evidence being used in this paper, the year of publication of the empirical paper and website information must be from the year 2000 onwards. However researcher also captured significantly relevant research or empirical papers which were published earlier than the year 2000 (Fig. 3).



Note: BB - Behavioural Beliefs, NB - Normative Beliefs, (CB) Control Beliefs, (AB) Attitude toward the Behaviour, (SN) Subjective Norm, (PBC) Perceived Behavioural Control, (INT) Intention, (B) Behaviour, (ABC) Actual Behaviour Control

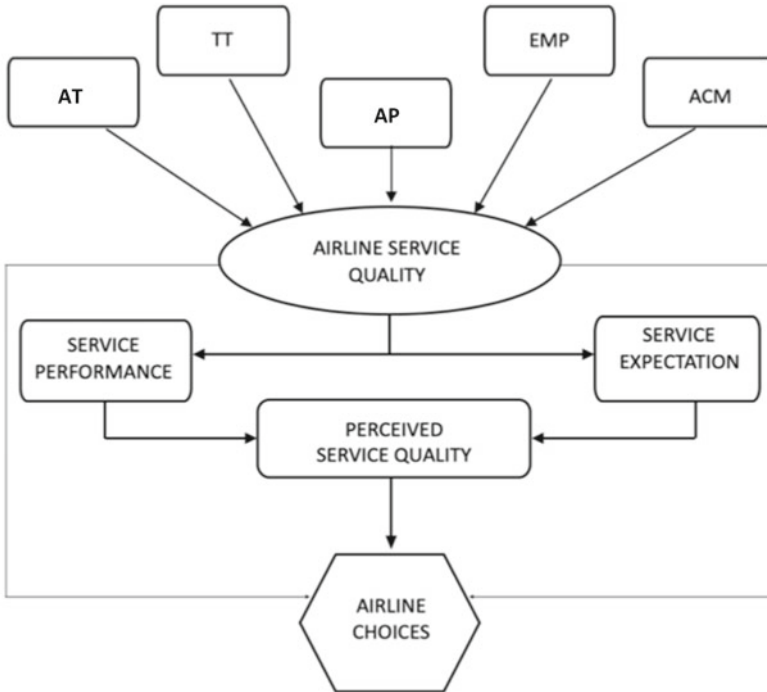
Fig. 3 Theory of planned behaviour (Source (Ajzen 2019))

### 4 Conceptual Framework

Figure 4 illustrates the proposed conceptual framework for this study. The variables are sourced from (Abd-El-Salam 2013; Ajzen 2019; Alotaibi 2015; Hofstede 2011). They are divided into three (3) sections which is:

- i. Independent variables; airline tangible, terminal tangible, airline personnel, empathy and culture,
- ii. Moderating variable; customer satisfaction,
- iii. Dependant variable; airline choices.

The airline service quality (AIRQUAL) scale is used in this study and it is found suitable for measuring service quality and customers’ decision-making in airline choices for airlines. However, the dimensions in the airline service quality (AIRQUAL) scale has been modified with the addition airlines cultural management replacing responsiveness. This is due to the researcher assumption that a generic airline service quality model cannot be used vis-a-vis as it is hardly sufficient to evaluate the airline service quality for airlines serving South East Asia (ASEAN) countries and not rendering a good measurement on customers’ decision-making in airline choices. The researcher assumed that airline cultural management form the primary motive why airlines considers culture differences affects customers’ perception as it highlights the need for airlines not to neglect cultural differences whilst assessing service quality. This is in lined with (Pantouvakis 2013; Spencer-Oatey



Note: AT - Airline Tangible, TT - Terminal Tangible, AP - Airline Personnel, EMP - Airline Empathy, ACM - Airline Culture Management, AIRQUAL - Airline Service Quality, CSAT - Customer Satisfaction, AC - Airline Choices

Fig. 4 Conceptual framework

and Franklin 2012), which states that culture is difficult to defined especially when the service quality dimension is involved and used to measure service quality.

The researcher plan to utilize identical dimensions to estimate airline service quality and customers’ decision-making. This is because the researcher presume the pair to be related (Alotaibi 2015) and customers’ decision-making is a precursor of service quality (Kim and Park 2017). The AIRQUAL scale proposition combine both elements and proposed perceived service quality is a precursor towards customers’ decision-making in airline choices (Kim and Park 2017). Therefore, in this research, the initial version (Bari et al. 2001) consisting 38 items of AIRQUAL scale are altered and added items are included towards determining the perceived service quality and customers’ decision-making in airline choices for airlines in serving South East Asian (ASEAN) countries. Among the items that were discarded were from the (5) dimensions; airline tangibles, terminal tangibles, personnel, empathy and image. The reasons behind the deletion was due to results gotten from coefficient alpha and factor analysis (Alotaibi 2015). Additionally, the researcher desires to discover a comprehensive understanding on service quality perceived by customers and to

confirm the service quality dimensions that airline customers in South East Asian (ASEAN) are content with. Referring to the AIRQUAL scale amended by (Alotaibi 2015), the researcher is adopting and modifying the 30-items to the research, so that significant dimensions that are influential to the customers are recognize, thus helping the customers to justify their decision-making in airline choices. It is also worth noting that airline culture management is replacing image as one of the modified dimension.

## 5 Findings

Organisations have begin to focalise on customer perceptions on service quality as it supports in evolving their action plan that will lead towards better performance and improved image (Park et al. 2004). The competition between airlines worldwide is largely build on service pattern, service quality, and customers' expectation. Yet, for airlines worldwide that offers the identical product and services, offering contrasting and executing superior quality customer service can be one of the action plan to attract the customers. Air Berlin, a low-cost airline in Germany proved that the action plan, which includes a 24-h hotline centre and a frequent flyer program, a success. The services offered are very rare in the low-cost airline market, thus by doing so, enables Air Berlin to be a pioneer in offering such services in the airlines industry (Kupka and Jamart 2009). This enables Air Berlin to differentiate itself from other airlines.

De Boer (2018) investigated on Delta Airlines and discovered that the airline begins to utilize its data collection to give their flight attendants a priority list of customers to recognize for their domestic flights. The data was based on their frequent flyer program. The result reveals that such efforts were welcomed by the customers, yielding mass positive response and creating a very powerful image on the airline. This, in return, turn an airline who is on the brink of bankruptcy to a powerhouse brand. Delta Airline now, is the world's most awarded airlines.

Based on the original theory of airline service quality developed by Bari et al. (2001), and modified by Alotaibi (2015), this study has again, modified the scale. This is done in order so that the scale is better suited to the scenario of the study. Most the dimensions were retained although, one (1) dimension were removed; image in order to accommodate a new dimension; airline cultural management.

Scholars agreed that culture possesses dominant reaction on customers' acumen of satisfaction from the perceived service quality. This means that customers from different culture perceived service quality differently from one and another. Pantouvakis (2013) confirmed the notion that culture differences does influenced perceived satisfaction. The outcome shows that customer satisfaction will be better when they are better served.

If airline looks into the cultural background of the customers, it will help them to further understand the needs and wants off the customers. By doing so, this will help them in enhancing the perceived service quality given to their customer. As for the customers, given that the fact that the airline understands their cultural background, this will convinced the customers to acquire the intended services from the airlines.



Therefore, determining befitting service quality dimension is crucial for any organization, particularly for an airlines. A correct identification of service quality is vital as it will outline the total service quality delivered and helping the customers to justify their decision-making. The factual outcome of this research provides practical data for an airline to make finer planned resolutions to improve airline service quality and guide airline leaders in creating an implicit framework to correctly keep track of airline service quality in the required areas.

## 6 Conclusion

In conclusion, customers perceive service quality as very important in helping them to make the necessary decision. Thus, being able to measure service quality can benefit the airline industry, particularly airlines in South East Asia (ASEAN) region. Measuring airline service quality (AIRQUAL) helps the management in finding well-grounded data that will be used to continue improving service quality. In utilizing the airline service quality (AIRQUAL) scale, it helps the airline to better assess its service quality and to gain a better recognition on the different dimensions along with how it affects service quality and customers' decision-making in airline choices. Thus, this helps to recognize the pluses and minuses that the airline has, and making the required enhancements.

An airline will definitely face difficulty in finding the right method when searching for ways to improve their service quality. This scenario is faced by most airlines in the South East Asia (ASEAN) region, where achieving customer satisfaction and maintaining customer loyalty is quite hard, along with other factors such as customer complaints and repeat purchases. Thus, airlines in this region are always finding ways to increase customer satisfaction and customer decision-making in airline choices. Therefore, it is hoped that this study with the proposed airline service quality (AIRQUAL) scale would help to ease the burden for the airline to better serve their customers based on the differences, notably cultural background.

In the context of the government or the policy-makers, by using the proposed airline service quality (AIRQUAL) scale as a reference, it will help them to design strategies in improving service quality. Abdul Aziz and Mat Yatin (2015) stated that with service quality broad dimensions, which has different scores and strengths, it will be useful in improving service quality for the respective airline. The government would also be able to introduce numerous policies that can help to promote the airline industry, whether domestically or internationally.

Additional research ought to be accomplished as a means to achieve a clearer insight on the concepts of airline service quality and customers' decision-making in airline choices, how they are measured as it is very important for the airlines industry, specifically for the airlines to be profitable and ensure continuous growth.

**Acknowledgements** Authors would like to thank the Malaysia Institute of Transport (MITRANS), UiTM for all contributions toward this study and for sponsoring the fee for the publication of this paper.

## References

- Abdul Aziz, M., Mat Yatin, S.F.: A conceptual paper on customer satisfaction toward commercial records center services. *Aust. J. Basic Appl. Sci.* **9**(3), 67–74 (2015)
- Abd-El-Salam, E.M., Shawky, A.Y., El-Nahas, T.: The impact of corporate image and reputation on service quality, customer satisfaction and customer loyalty: testing the mediating role. Case analysis in an international service company. *Bus. Manag. Rev.* **3**(2), 177 (2013)
- Ajzen, I.: *Organizational Behaviour and Human Decision Processes*. 1991. *The Theory of Planned Behaviour* (2019). <http://cas.hse.ru/data/816/479/1225/>
- Akamavi, R.K., Mohamed, E., Pellmann, K., Xu, Y.: Key determinants of passenger loyalty in the low-cost airline business. *Tour. Manag.* **46**, 528–545 (2015)
- Alotaibi, M.M.: Evaluation of 'ARIQUAL' scale for measuring airline service quality and its effects on customer satisfaction and loyalty. Unpublished Doctoral Dissertation, Cranfield University, United Kingdom (2015)
- Babakus, E., Boller, G.W.: An empirical assessment of SERVQUAL scale. *J. Bus. Res.* **24**(3), 253–268 (1992)
- Bari, S., Bavik, A., Ekiz, H.E., Hussain, K., Toner, S.: AIRQUAL: a multiple-item scale for measuring service quality, customer satisfaction and repurchase intention. HOS-414 Graduation Project, Easter Mediterranean University, Gazimagusa, Cyprus (2001)
- Bekhet, H.A., Al-Alak, B.A.: Measuring E-statement quality impact on customer satisfaction and loyalty. *Int. J. Electron. Financ.* **5**(4), 299–315 (2011)
- Baumann, C., Hoadley, S., Hamin, H., Nugraha, A.: Competitiveness vis-à-vis service quality as drivers of customer loyalty mediated by perceptions of regulation and stability in steady and volatile markets. *J. Retail. Consum. Serv.* **36**, 62–74 (2017)
- Buaphiban, T., Truong, D.: Evaluation of passengers' buying behaviours towards low-cost carriers in South East Asia. *J. Air Transp. Manag.* **59**, 124–133 (2017)
- Buttle, F.: SERVQUAL; review, critique, research agenda. *Eur. J. Mark.* **30**(1), 8–32 (1996)
- Chen, H.T., Chao, C.C.: Airline choice by passengers from Taiwan and China: a case study of outgoing passengers from Kaohsiung international airport. *J. Air Transp. Manag.* **49**, 53–63 (2015)
- Chen, L., Li, Y.Q., Liu, C.H.: How airline service quality determines the quantity of repurchase intention—mediate and moderate effects of brand quality and perceived value. *J. Air Transp. Manag.* **75**, 185–197 (2019)
- Chonsalasin, D., Jomnonkwo, S., Ratanavaraha, V.: Key determinants of airline loyalty modeling in Thailand. *Sustainability* **12**, 4165 (2020). [https://doi.org/10.3390/su12104165\(2020\)](https://doi.org/10.3390/su12104165(2020))
- Cronin, J.J., Taylor, S.A.: Measuring service quality: a re-examination and extension. *J. Mark.* **56**, 55–68 (1992)
- De Boer, E.R.: *Strategy in Airline Loyalty*. Springer Books (2018)
- Hoang, D.T.L.: The impact of relationship marketing on customer loyalty in the airline industry: Case study finnair. Degree Programme in Business Management, Centria University of Applied Sciences, Finland (2015)
- Hofstede, G.: Dimensionalizing Cultures: The Hofstede Model in Context. Online Readings in Psychology and Culture, Unit 2 (2011). <http://scholarworks.gvsu.edu/orpc/vol2/iss1/8>
- Jahmani, A.: The effect of royal Jordanian airline service quality on passengers' satisfaction. *Int. J. Bus. Soc.* **18**(S3), 519–530 (2017)

- Jeng, S.P.: The influences of airline brand credibility on consumer purchase intentions. *J. Air Transp. Manag.* **55**, 1–8 (2016)
- Khudhair, H.Y., Jusoh, A., Mardani, A., Nor, K.M.: Quality seekers as moderating effects between service quality and customer satisfaction in airline industry. *Int. Rev. Manag. Mark.* **9**(4), 74–79 (2019)
- Kim, S.B., Park, J.W.: A study on the importance of airline selection attributes by airline type: an emphasis on the difference of opinion in between Korean and overseas aviation experts. *J. Air Transp. Manag.* **60**, 76–83 (2017)
- Korkmaz, H., Giritlioglu, İ., Avcikurt, C.: Havayolları İç Hatlarda Algılanan Hizmet Kalitesinin Müşteri Memnuniyeti ve Tekrar Satın Alma Davranışına Etkisi. *Karabük Üniv. Sosyal Bilimler Enstitüsü Dergisi* **5**(2), 248–265 (2015)
- Kumudha, A., Bhunia, A.: Customer relationship management and marketing practices in airlines industry—an empirical study. *Int. J. Appl. Res. (IJAR)* **2**(11), 39–43 (2016)
- Kupka, S., Jamart, T.: The achievement of sustainable competitive advantage through relationship marketing. Master's thesis, Halmstad University, Sweden (2009)
- Lan, H.: The impact of relationship marketing on customer loyalty in the airline industry. Unpublished Bachelor's Thesis, Centria University Applied Science, Finland (2015)
- Mohamud, M.: The effect of customer relationship management and organizational performance in Mogadishu, Somalia. *Int. J. Sci. Res.* **8**(1), 2061–2062 (2019)
- Pantouvakis, A.: The moderating role of nationality on the satisfaction loyalty link: evidence from the tourism industry. *Total Qual. Manag. Bus. Excell.* **24**(9–10), 1174–1187 (2013)
- Parasuraman, A., Zeithaml, V.A., Berry, L.L.: A conceptual model of service quality and its implications for future research. *J. Mark.* **49**, 41–50 (1985)
- Parasuraman, A., Zeithaml, V.A., Berry, L.L.: SERVQUAL: a multiple-item scale for measuring customer perceptions of service quality. *J. Retail.* **6**(41), 12–40 (1988)
- Park, J.W., Robertson, R., Wu, C.L.: The effect of airline service quality on passengers' behavioural intentions: a Korean case study. *J. Air Transp. Manag.* **10**(6), 435–439 (2004)
- Pizam, A., Ellis, T.: Customer satisfaction and its measurement in hospitality enterprises. *Int. J. Contemp. Hospit. Manag.* **1**(7), 326–339 (1999)
- Rahim, A.G.: Perceived service quality and customer loyalty: the mediating effect of passenger satisfaction in the Nigerian airline industry. *Int. J. Manag. Econ.* **52**, 94–117 (2016)
- Salah, M., Abou-Shouk, M.: The effect of customer relationship management practices on airline customer loyalty. *J. Tour. Heritage Serv. Mark.* **5**, 11–19 (2019)
- Saleem, M.A., Zahra, S., Yaseen, A.: Impact of service quality and trust on repurchase intentions—the case of Pakistan airline industry. *Asia Pac. J. Mark. Logist.* **29**(5), 1136–1159 (2017)
- Seo, E.-J., Park, J.-W.: A study on the effects of social media marketing activities on brand equity and customer response in the airline industry. *J. Air Transp. Manag.* **66**, 36–41 (2018)
- Shen, C., Yahya, Y.: The impact of service quality and price on passengers' loyalty towards low-cost airlines: the Southeast Asia perspective. *J. Air Transp. Manag.* **91**, 101966 (2021). <https://doi.org/10.1016/j.jairtraman.2020.101966>
- Shukla, L.: A case study on customer acquisition and retention on the airline service industry. *IOSR J. Bus. Manag.* **9**(4), 15–33 (2013)
- Spencer-Oatey, H., Franklin, P.: What is culture. A compilation of quotations. *GlobalPAD Core Concepts* 1–21 (2012)
- Stanley, K., Kamau, K.: Factors affecting strategic choices in airlines in Kenya: a case study of Kenya airways. *Int. J. Bus. Manag.* **3**(5), 86–98 (2013)
- Statista: Global air traffic—number of flights 2004–2020 (2019). <https://www.statista.com/statistics/564769/airline-industry-number-of-flights>. 18 Dec 2019
- Teas, R.K., De Carlo, T.E.: An examination and extension of the zone-of-tolerance model: a comparison to performance-based model of perceived quality. *J. Serv. Res.* **6**(3), 272–286 (2004)
- Tian, X., He, W., Tang, C., Li, L., Xu, H., Selover, D.: A new approach of social media analytics to predict service quality: evidence from the airline industry. *J. Enterp. Inf. Manag.* **3**(1), 51–70 (2019). <https://doi.org/10.1108/JEIM-03-2019-0086>

- Theerathanongwut, T., Suveatwatanakul, C.: Determinants of relationship marketing and business performance in airline industry. *Dusit Thani Coll. J.* **11**(2), 155–171 (2019)
- Tsoukatos, E., Mastrojianni, E.: Key determinants of service quality in retail banking. *EuroMed. J. Bus.* **5**(1), 85–100 (2010)
- Ueltschy, L.C., Laroche, M., Eggert, A., Binde, U.: Service quality and satisfaction international comparison of professional services perceptions. *J. Serv. Mark.* **21**(6), 410–423 (2007)
- Yayla-Kullu, H.M., Transitpong, P., Gnanlet, A., Durgee, J.: *Oper. Manag. Res.* **8**, 3–4 (2015)

# Impact of Audit Quality on the Firms Performance and the Mediation of Accrual Earning Management—Conceptual Paper



Osama Khader

**Abstract** The quality of financial reports is key to confident and informed markets and investors. The purpose of the independent audit is to provide confidence in the quality of financial reports. In addition, accrual accounting provides for a better sense of a company's overall financial health than the cash basis accounting method. Therefore, the rational conceptualization between audit quality, accrual earning management, and financial performance is essential and must be examined especially in the companies listed in the stock market. The proposed model of this research has external audit and audit committee effectiveness as predictors for both accrual earning management, and firms' financial performance. In addition, accrual earning management is mediating the relationships between audit quality and financial performance. Further work is important to empirically examine the model to validate the proposed relationships and make a comparison between the different markets.

**Keywords** External audit · Audit committee · Audit quality · Accrual earning management · Financial performance

## 1 Introduction

Auditing of financial statements serves as a control mechanism for shrinking information unevenness and safeguarding the interests of the differing claimants by ensuring that the audited financial statements are free from contents misstatements (Ugwunta et al. 2018). Auditors help to reduce the perils of significant misstatements by ensuring financial statements are prepared according to preset standards. Lower perils on misstatements intensify confidence in stock markets, which in turn lowers the cost of capital for firms (Omondi 2021). Standard setters and implementers can increase the effectiveness of public firms by propagating standards that help guarantee that auditing improves the excellence of financial information. This is because

---

O. Khader (✉)

Palestine Technical University-Kadoorie, West Bank, Tulkarm, Palestine

e-mail: [o.khader@ptuk.edu.ps](mailto:o.khader@ptuk.edu.ps)

both internal and external users of financial statements are interested in the excellency of audits (Osadchy et al. 2018).

Audit quality is an important dimension of the antecedents of financial performance and earning management (Abbott et al. 2016). Audit quality can be measured based on the internal setup as audit committee practices or external setup based on external auditors' practices (Habbash and Alghamdi 2017; Abid et al. 2018). An important corporate practice is external auditing. Theoretically, an independent examination of the books of account of a company by an auditor reduces agency problems by preventing the insider (controlling shareholders or managers) from engaging in discretionary accounting practices and estimates (Ugwunta et al. 2018). Extant studies (Hay et al. 2006; Stanley 2011) showed that market participants react positively to companies audited by reputable audit firms. This is because reputable audit firms deploy more time, skill, and resources during the audit engagement. A few studies like (Bao and Lewellyn 2017), examined the role of quality external monitoring mechanism in reducing the agency problems that emerges from the separation of ownership from control. These studies argued that external monitoring by high-quality auditors improves the credibility of financial reporting (Habib et al. 2018). An audit committee is one of the major operating committees of a company's board of directors that is in charge of overseeing financial reporting and disclosure. Publicly traded companies must maintain a qualified audit committee to be listed on a stock exchange. Committee members must be made up of independent outside directors, including a minimum of one person who qualifies as a financial expert (Nagy and Cenko 2002; Whittington and Pany 2010).

The reliability and accuracy of the financial information provided are required in the business environment to be able to make decisions and perform analysis. Earnings are considered the main source of information and would alter any decision (Rad et al. 2016). This raised the need to set rules to guide and control the performance by enhancing the quality of the financial reporting and ensuring the transparency of the financial information (Roychowdhury et al. 2019). Despite this, the accrual basis of accounting encourages managers to engage in earnings management. El-Moslemany and Nathan (2019) pointed out that the easily detected from discontinuity in the distribution of earnings. Previous studies have elaborated the ways and methods managers undertake to manage their earnings. Earnings management is considered as an underlying reason for a wide range of pervasive financial scandals, raising a big concern on the quality of financial information (El Diri 2017). Earnings management may be undertaken through two primary methods including accrual-based earnings management and real earnings management. Accrual-based earnings management involves selecting specific accounting choices for certain transactions to manipulate reported earnings (El Diri 2017). Therefore, manipulations through accruals do not influence the economic transactions and the company's cash flows.

Statements of financial performance are used to provide information to both internal and external users about the performance of a company. Financial statement users or stakeholders expect a company with a high-profit margin to have better financial standing. Investors' decision-making process is heavily dependent on the accounting information provided by the managers who have been appointed

to utilize the assets belonging to them (Yu 2021). Due to this great reliance on the financial information provided by management, it usually stimulates management for manipulation of earnings through the financial statements which are prepared by the management of a particular company. This opportunistic behavior of management leads to earnings management practices. A financial analysis of a company's financial statements - along with the footnotes in the annual report—is essential for any serious investor wanting to understand and value a company properly (Robinson 2020; Alareeni 2019; Areiqat 2020). However, financial reports include many other governance and management statistics that encourage scholars and financial analysts to conduct advanced longitudinal predicting analysis to have better insight into the cause-effect relations of firms' financial performance (Brauer et al. 2017).

This research aims to conceptualize the relationship between audit quality, accrual earning management, and firms' financial performance based on the annual financial reports among listed companies in the stock markets.

## **2 Operational Definitions**

### ***2.1 Firms Financial Performance***

Firms' financial performance is the financial measure of organizational success. It is associated with the firm profit and wealth maximization by taking into account the rights of its shareholders. To determine the overall firm's financial performance measure as Return-on-Assets (ROA) and Return-on-Equity (ROE) are the most frequently used ones (Chandra 2011; Brigham et al. 2016).

### ***2.2 Accrual Earning Management***

Accruals are revenues earned or expenses incurred that impact a company's net income on the income statement because the cash related to the transaction has not yet changed hands. Accruals also affect the balance sheet, as they involve non-cash assets and liabilities. Accrual accounts include, among many others, accounts payable, accounts receivable, accrued tax liabilities, and accrued interest earned or payable (Zang 2011).

### ***2.3 External Audit***

It is the auditing activities that are conducted by a third party outside the space of the firms' management. Audits performed by outside parties can be extremely helpful in

removing any bias in reviewing the state of a company’s financials. Financial audits seek to identify if there are any material misstatements in the financial statements (Nagy and Cener 2002; Whittington and Pany 2010).

### 2.4 Audit Committee

An audit committee is one of the major operating committees of a company’s board of directors that is in charge of overseeing financial reporting and disclosure. Publicly traded companies must maintain a qualified audit committee to be listed on a stock exchange. Committee members must be made up of independent outside directors, including a minimum of one person who qualifies as a financial expert (Nagy and Cener 2002; Whittington and Pany 2010).

## 3 Conceptual Framework and Hypothesis Development

This particular study conceptualizes the relationship between audit quality, accrual earning management, and firms’ financial performance. Figure 1 shows the conceptual model with the desired relationships.

### 3.1 Firms’ Financial Performance

In the stock market, firms’ financial performance can be measured by using three ratios, which were calculated namely Return-On-Assets (ROA), Return on Equity (ROE), and Tobin’s Q. While the ROE and ROA represent accounting performance

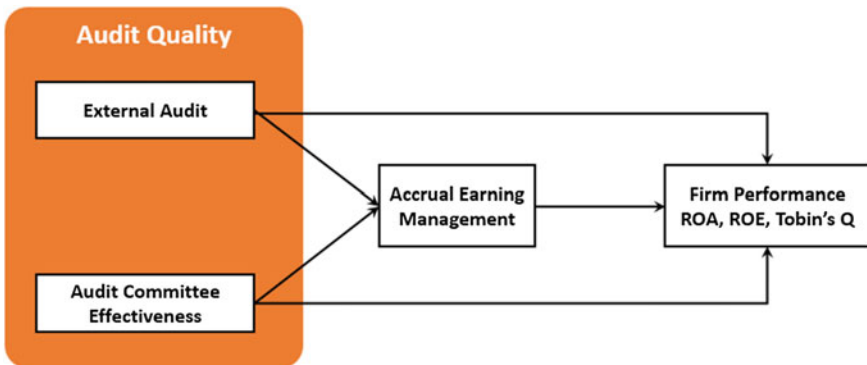


Fig. 1 Conceptual framework



measures, Tobin's Q is used to measure the market performance of firms (Hanaa A El-Habashy 2019). The composite variable, firms' financial performance, measures the overall firm performance. The multi predictive value for firm performance was computed using standardized values as variables of performance then computing the target variable of PERF as a composite index. The study utilizes the data displayed in the financial reports to calculate ROA, ROE, and Tobin's Q. In addition, a discussion of the three variables is followed (Nguyen 2018).

### **3.2 Return-On-Assets (ROA)**

Return on Assets (ROA) is a type of return on investment (ROI) metric that measures the profits of a business concerning its total assets. This ratio suggests how well a business is doing by looking at the return (net income) it is producing to the capital it is invested in assets (Elvin and Hamid 2017). The bigger the go back, the more successful and effective management is in using financial resources. Below you are going to find a description of the ROA formula and calculation (Barua et al. 2012). Return on assets (ROA) is estimated by dividing a company's total earnings by total assets.

Return on assets (ROA), in basic terms, tells you what earnings have been produced from expended capital (property). ROA for public businesses can change considerably and will probably be extremely determined by the market (Azila-Gbettor et al. 2018). This is precisely why when working with ROA as a comparative degree, it is ideal to equate it against a company's earlier ROA numbers and a similar company's ROA. The ROA figure provides investors a concept of just how helpful the organization is in transforming the cash it invests into total income. The bigger the ROA number, the greater, because the business is generating much more cash on less investment (Elvin and Hamid 2017; Azila-Gbettor et al. 2018).

### **3.3 Return on Equity (ROE)**

Return on equity (ROE) is a degree of financial performance calculated by dividing total earnings by shareholders' equity. Because shareholders' equity is equal to a company's property minus the debt of its, ROE might be regarded as the return on total assets. ROE is deemed a degree of just how effectively management is utilizing a company's assets to generate profits. ROE is conveyed as a portion and may be estimated for virtually any organization if total cash flow plus equity are both good numbers (Elvin and Hamid 2017). Total revenue is calculated before dividends given to common shareholders and after dividends to chosen interest and shareholders to lenders. The return on equity ratio method is estimated by dividing total earnings by shareholder's equity (Suparna 2020).

Return on equity measures just how effectively a firm can make use of the cash from shareholders to produce income and increase the business. Unlike some other return on buy ratios, ROE is a profitability ratio from the investor's purpose of perspective—not the business. Put simply, this ratio calculates how much cash is made depending on the investors' investment in the business, not the company's investment in something or assets else (Barua et al. 2012). That said, investors should see a top return on equity ratio because this shows the business is by using its investors' funds successfully. Higher ratios are usually better compared to lower proportions but must be in comparison with various other companies' proportions within the market. Since every business has various levels of income and investors, ROE cannot be applied to evaluate businesses outside their industries effectively (Barua et al. 2012).

### 3.4 Tobin's *Q*

Tobin's *Q* ratio is equal to the market valuation of an enterprise divided by its assets' replacement cost. Thus, equilibrium happens when market value equals replacement cost. The Tobin's *Q* ratio is a ratio popularized by James Tobin of Yale Faculty, Nobel laureate in economics, who hypothesized that the consolidated market value of all of the organizations on the stock market ought to be about the same as their replacement costs. The *Q* ratio is estimated as the market valuation of an enterprise divided by the replacement value of the firm's property (Suparna 2020).

Tobin's *Q* is used as a measure to estimate firm performance. It is a ratio of a company's total market value and its total asset value devised by James Tobin of Yale University in 1969. It hypothesized that the combined market value of all the companies on the stock market should be equal to their replacement cost (Bartlett and Partnoy 2018).

$$Q\text{Ratio} = \text{Total Market Value of Firm} / \text{Total Asset Value}$$

Tobin's *Q* is normally used as a market-based performance indicator of a firm. Market measures refer to those measures, which incorporate the market value of the equity. Tobin's *Q* is forward-looking and reflects the shareholders' expectations regarding the future performance of the firm, which is based on past or current performance. In studying ownership structure, this market measure is meant for testing the market value of the firm. It is assumed in this study that the valuation of a firm is linked with the firm's ownership structure and its performance (Bartlett and Partnoy 2018).

### ***3.5 External Audit, Accrual Earning Management, and Firms' Performance***

There is a general assumption that an external auditor ensures the reliability of the financial statements provided by the Board of Directors to the shareholders (Mautz 1961). Additionally, the external auditor exerts efforts to lessen the information asymmetry between management and shareholders as explained by Fama (1980), to resolve agency problems, and to prevent manipulation of accounting information (Jensen and Meckling 1976; Watts and Zimmerman 1986). In other words, the external auditor is crucial in maintaining the gap between ownership and control of the firm (Fama and Jensen 1983). The relationship between external shareholders and management is rife with moral hazard and opportunism that arises from information asymmetry. To this end, the social role of financial reporting contributes to the control-ownership separation (Wan et al. 2021). This is supported by Kane and Velury's (2004) study that found higher degrees of institutional ownership to lead to the higher potential of firms to purchase audit services from major auditing firms for quality of audit. In this regard, a positive relationship was reported between professional audit and quality of audit by few researchers. However, Dehkordi and Makarem (2011) reported no relationship between size and quality of audit. Moreover, the relationship between shareholders and management is riddled with moral hazard and opportunistic behavior that originates from the asymmetry of information. This is evidenced by Wan et al. (2021) who showed that financial reporting plays a social role in increasing the separation between control and ownership. Based on the above discussion of ownership concentration and its relations within the model, the following arguments are considered for exploration within this particular study:

- The external audit has a direct significant influence on firms' financial performance.

Accrual earning management has a significant mediating effect in the relation between external audits and firms' financial performance.

### ***3.6 Audit Committee Effectiveness, Accrual Earning Management, and Firms' Performance***

The findings of prior studies on the effect of the audit committee on earnings management are mixed and inconclusive. For example, Baxter and Cotter (2009) and Rahman and Ali (2006) find evidence for samples of Australian and Malaysian listed companies respectively. In Australia, Benkel et al. (2006) find that higher levels of audit committee independence are associated with reduced levels of earnings management. Piot and Janin (2007) examined the 120 Index of French companies between 1999 and 2001 and find that audit committee independence mitigates earnings management. Additionally, Chang and Sun (2010), using a better-specified earnings management

measure based on Kothari et al. (2005), reveal a negative association between earnings management and audit committee independence in the post-SOX period. Lo et al. (2010) investigate whether good governance structures help constrain management's opportunistic behaviors measured by transfer pricing manipulations in China. Their sample covers 266 listed companies on the Shanghai Stock Exchange in 2004. They find that audit committees with financial experts are less likely to engage in transfer pricing manipulations. Therefore, we expect that an effective audit committee will constrain the opportunistic managerial behavior of earnings management, which will improve the quality of reported earnings. Based on the above discussion of ownership concentration and its relations within the model, the following arguments are considered for exploration within this particular study:

- Audit committee effectiveness has a direct significant influence on firms' financial performance.

Accrual earning management has a significant mediating effect in the relation between audit committee effectiveness and firms' financial performance.

### ***3.7 Accrual Earning Management, and Firms' Performance***

Earnings management affects corporate firm performance and can even temper with shareholders wealth simply because it involves a deliberate altering of financial information to either misled investors on the real economic position of a firm or to gain some contractual benefits that depend largely on accounting numbers (Watts and Zimmerman 1986; Healy and Wahlen 1999). The situation whereby users allow managers to use their discretion in preparing and reporting accounting transactions for their advantage; the management of companies will want to show their accounting results most favorably by making a great one-off provision in years where a higher level of underlying earnings was generated (Ajide and Aderemi 2014). Earnings management involves the manipulation of company earnings towards a pre-determined target. This target can be achieved by a preference for more stable earnings, in which case management is said to be carrying out income smoothing (Wikipedia 2015). Opportunistic income smoothing can in turn signal lower risk and increase a firm's market value. Other possible motivations for earnings management include the need to maintain the levels of certain accounting ratios due to debt issues, and the pressure to maintain increasing earnings and to beat analyst targets. Based on the above discussion of ownership concentration and its relations within the model, the following arguments are considered for exploration within this particular study:

- Accrual earning management has a significant influence on firms' financial performance.

## 4 Discussion, Conclusion, and Recommendations

The quality of financial reports is key to confident and informed markets and investors. The purpose of the independent audit is to provide confidence in the quality of financial reports. Improving audit quality and the consistency of audit execution is essential to maintaining confidence in the independent assurance they provide. If a company fails but its financial report did not properly show its declining financial position and results or going concern issues, it is reasonable for questions to be asked about the role played by the company directors and the auditor. Questions may also be asked if investment decisions are made using financial reports that do not reflect a company's true financial position and performance. In addition, accrual accounting provides for a better sense of a company's overall financial health than the cash basis accounting method. That is primarily why it has been adopted as a best practice and integrated into the broad set of rules defined through generally accepted accounting principles. Therefore, the rational conceptualization between audit quality, accrual earning management, and financial performance is essential and must be examined especially in the companies listed in the stock market.

This paper proposed a conceptual model to predict the firms' financial performance based on the accrual earning management, audit committee effectiveness, and external audit. However, the empirical examination of the model is important to validate the proposed relationships and make a comparison between the different markets.

**Acknowledgements** The author would like to thank the Palestine Technical University-Kadoorie for their financial support to conduct this research.

## References

- Abbott, L.J., et al.: Internal audit quality and financial reporting quality: the joint importance of independence and competence. *J. Account. Res.* **54**(1), 3–40 (2016)
- Abid, A., Shaique, M., AnwarulHaq, M.: Do big four auditors always provide higher audit quality? Evidence from Pakistan. *Int. J. Financ. Stud.* **6**(2), 58 (2018)
- Ajide, F.M., Aderemi, A.A.: The effects of corporate social responsibility activity disclosure on corporate profitability: empirical evidence from Nigerian commercial banks. *IOSR J. Econ. Financ. (IOSRJEF)* **2**(6), 17–25 (2014)
- Azila-Gbettor, E.M., et al.: Structural aspects of corporate governance and family firm performance: a systematic review. *J. Family Bus. Manag.*, 306–330 (2018)
- Bao, S.R., Lewellyn, K.B.: Ownership structure and earnings management in emerging markets—an institutionalized agency perspective. *Int. Bus. Rev.* **26**(5), 828–838 (2017)
- Bartlett, R.P., Partnoy, F.: The misuse of Tobin's Q. UC Berkeley public law research paper (2018)
- Barua, A., Mani, D., Mukherjee, R.: Measuring the business impacts of effective data (2012). [http://www.sybase.com/files/White\\_Papers](http://www.sybase.com/files/White_Papers). Accessed 15 Sept 2012
- Baxter, P., Cotter, J.: Audit committees and earnings quality. *Account. Financ.* **49**(2), 267–290 (2009)

- Benkel, M., Mather, P., Ramsay, A.: The association between corporate governance and earnings management: the role of independent directors. *Corp. Ownersh. Control.* **3**(4), 65–75 (2006)
- Brauer, M., Mammen, J., Luger, J.: Sell-offs and firm performance: a matter of experience? *J. Manag.* **43**(5), 1359–1387 (2017)
- Brigham, E.F., et al.: *Financial Management: Theory And Practice*, Canadian Edition. Nelson Education (2016)
- Chandra, P.: *Financial management*. Tata McGraw-Hill Education (2011)
- Chang, J.C., Sun, H.L.: Does the disclosure of corporate governance structures affect firms' earnings quality? *Rev. Account. Financ.* (2010)
- Dehkordi, H.F., Makarem, N.: The effect of size and type of auditor on audit quality. *Int. Res. J. Financ. Econ.* **80**, 121 (2011)
- El Diri, M.: *Introduction to Earnings Management*. Springer, Heidelberg (2017)
- El Moslemany, R., Nathan, D.: Ownership structure and Earnings Management: evidence from Egypt. *Int. J., Bus. Econ. Dev. (IJBED)* **7**(1) (2019), 1-15
- El-Habashy, H.A.: The effects of board and ownership structures on the performance of publicly listed companies in Egypt. *Acad. Account. Financ. Stud. J.* **23**(1), 1–15 (2019)
- Elvin, P., Hamid, N.I.N.A.: Review on ownership structure, corporate governance and firm performance. *J. Kemanusiaan* **15**(1) (2017)
- Fama, E.F.: Banking in the theory of finance. *J. Monet. Econ.* **6**(1), 39–57 (1980)
- Fama, E.F., Jensen, M.C.: Separation of ownership and control. *J. Law Econ.* **26**(2), 301–325 (1983)
- Habbash, M., Alghamdi, S.: Audit quality and earnings management in less developed economies: the case of Saudi Arabia. *J. Manag. Govern.* **21**(2), 351–373 (2017)
- Habib, A., Ranasinghe, D., Muhammadi, A.H., Islam, A.: Political connections, financial reporting and auditing: survey of the empirical literature. *J. Int. Account. Audit. Tax.* **31**, 37–51 (2018)
- Hay, D.C., Knechel, W.R., Wong, N.: Audit fees: a meta-analysis of the effect of supply and demand attributes. *Contemp. Account. Res.* **23**(1), 141–191 (2006)
- Healy, P., Wahlen, J.: A review of the earnings management literature and its implication for standard setting. *Account. Horiz.* **13**(4), 365–383 (1999)
- Jensen, M., Meckling, W.: Theory of the firm: managerial behavior, agency costs and ownership structure. *J. Financ. Econ.* **3**(4), 305–360 (1976)
- Kane, G.D., Velury, U.: The role of institutional ownership in the market for auditing services: an empirical investigation. *J. Bus. Res.* **57**(9), 976–983 (2004)
- Kothari, S., Leone, P., Wasley, C.: Performance matched discretionary accrual measures. *J. Account. Econ.* **39**, 163–197 (2005)
- Lo, A.W., Wong, R.M., Firth, M.: Can corporate governance deter management from manipulating earnings? Evidence from related-party sales transactions in China. *J. Corp. Finan.* **16**(2), 225–235 (2010)
- Mautz, R.K., Sharaf, H.A.: *The philosophy of auditing* (1961)
- Nagy, A.L., Cenker, W.J.: An assessment of the newly defined internal audit function. *Manag. Audit. J.* **17**(3), 130–137 (2002)
- Nguyen, N.P.: Performance implication of market orientation and use of management accounting systems. *J. Asian Bus. Econ. Stud.* (2018)
- Omondi, M.A.: Internal control systems on financial accountability in national public secondary schools in Kenya. Doctoral dissertation, JKUAT-COHRED (2021)
- Osadchy, E.A., Akhmetshin, E.M., Amirova, E.F., Bochkareva, T.N., Gazizyanova, Y., Yumashev, A.V.: Financial statements of a company as an information base for decision-making in a transforming economy (2018)
- Piot, C., Janin, R.: External auditors, audit committees and earnings management in France. *Eur. Account. Rev.* **16**(2), 429–454 (2007)
- Rad, S.E.M., Salehi, H., Pour, H.V.: A study of the interaction of audit quality and ownership structure on earnings management of listed firms on Tehran Stock Exchange. *Int. J. Humanit. Cult. Stud. (IJHCS)* 1596–1606 (2016). ISSN 2356-5926

- Rahman, R.A., Ali, F.H.M.: Board, audit committee, culture and earnings management: Malaysian evidence. *Manag. Audit. J.* (2006)
- Robinson, T.R.: *International Financial Statement Analysis*. Wiley, Hoboken (2020)
- Roychowdhury, S., Shroff, N., Verdi, R.S.: The effects of financial reporting and disclosure on corporate investment: a review. *J. Account. Econ.* **68**(2–3), 101246 (2019)
- Stanley, J.D.: Is the audit fee disclosure a leading indicator of clients' business risk? *Audit. J. Pract. Theory* **30**(3), 157–179 (2011)
- Suparna, M.: Corporate governance and its impact on financial performance: a review study. *Our Heritage* **68**(30), 11559–11570 (2020)
- Ugwunta, D.O., Ugwuanyi, B.U., Ngwa, C.U.: Effect of audit quality on market price of firms listed on the Nigerian stock market. *J. Account. Taxat.* **10**(6), 61–70 (2018)
- Wan, W., Zhou, F., Liu, L., Fang, L., Chen, X.: Ownership structure and R&D: the role of regional governance environment. *Int. Rev. Econ. Financ.* **72**, 45–58 (2021)
- Watts, R., Zimmerman, J.: *Positive Accounting Theory*. Prentice Hall, Eaglewood Cliffs (1986)
- Whittington, R., Pany, K.: *Principles of Auditing and Other Assurance Services*. Citeseer (2010)
- Yu, L.: Analysis on the application of information processing technology in accounting. In: *Journal of Physics: Conference Series*, vol. 1915, no. 4, p. 042064. IOP Publishing, May 2021
- Zang, A.Y.: Evidence on the trade-off between real activities manipulation and accrual-based earnings management. *Account. Rev.* **87**(2), 675–703 (2011)
- Alareeni, B.A.: The associations between audit firm attributes and audit quality-specific indicators: a meta-analysis. *Manag. Audit. J.* **34**(1), 6–43 (2019). <https://doi.org/10.1108/MAJ-05-2017-1559>
- Areiqat, A.Y., Hamdan, A., Alheet, A.F., Alareeni, B.: Impact of artificial intelligence on E-commerce development. In: Alareeni, B., Hamdan, A., Elgedawy, I. (eds.) *International Conference on Business and Technology. Lecture Notes in Networks and Systems*, vol. 194, pp. 571–578. Springer, Cham (2020). [https://doi.org/10.1007/978-3-030-69221-6\\_43](https://doi.org/10.1007/978-3-030-69221-6_43)

# Model of Relational Capital, Networking Customer Capability and Customer Retention to Increase Marketing Performance of SMEs



Naili Farida , Ida Bagus Nyoman, and Mochamad Taufiq

**Abstract** This study aimed to test capital relational model for conducting management of a company business by increasing customer retention to improve Small and Medium-sized Enterprise (SMEs) marketing performance. The quality of customer networking can improve marketing performance. The population in this study included the owners of SMEs in Bantul, Indonesia. Samples were selected by purposive sampling method covering 80 respondents and the samples were processed using regression analysis. The analysis was conducted by Structural Equation Modeling (SEM) SmartPLS version 3.2.9 computer program. The results showed that Relational Capital, Communication Quality and Customer Retention had a significant effect on Networking Customer Capability. Meanwhile, Networking Consumer Capability and Communication Quality had a significant effect on marketing performance. Moreover, customer retention had no significant effect on Marketing Performance. In addition, data analysis implied that there is a mediation effect of consumer networking and communication quality which has a significant role in improving marketing performance in Small and Medium Enterprises.

**Keywords** Relational capability · Customer networking quality · Communication Quality · Retention customer and marketing performance

## 1 Introduction

The paradigm of marketing development has significantly changed from transactional marketing paradigm (Morgan and Hunt 1994). In addition, the development and philosophy of marketing has changed from product orientation to customer-oriented and the most recent change is social marketing philosophy or social orientation. This paradigm shift is based on the theory developed by (Vargo and Lusch 2017) which explains a new logic shift in the marketing field, i.e. the change in the

---

N. Farida (✉) · M. Taufiq  
Diponegoro University, Semarang, Indonesia

I. B. Nyoman  
Sarjanawiyata Tamansiswa University, Yogyakarta, Indonesia



concept of Goods Dominant Logic (GDL) which leads to Service Dominant Logic (SDL). The SDL concept shows that companies which have a sustainable competitive advantage will require meta-collaborative competences, absorptive competence and adaptive competence to deal with the complex and dynamic environment (Warnaby and Medway 2015). Service Dominant Logic as a service can be defined as a process of doing something to create value and involving other parties so that the company can be dynamic and collaborative. This concept can be implemented in the relationship between the company and the customer or the company and the other companies (Vargo and Lusch 2016).

## 2 Purpose and Structure of the Study

This study aimed to investigate the influence the model of relational capital and customer network quality to improve marketing performance in SMEs.

The structure of this study is as follow:

1. Introduction consisting of background of the problems and business phenomena including the important role of marketing performance in small and medium enterprises, and the research method used in this study, i.e., the basic theory of networking customer capability, relational capital and market performance.
2. Literature review and research methods and there are 5 hypotheses to be tested as well as the results of data analyses using SEM PLS, discussion and research contributions along with managerial implications for SME owners.

## 3 Literature Review

### 3.1 *Relational Capital and Customer Networking Quality*

Relational capital is a component of intellectual capital which has an important role. This is a result of human resources' activity oriented to building and managing the relationships between company and the external environment (Martini et al. 2016). The concepts related to sustainable business imply that a company will be able to achieve the business goals by increasing its value in the long term when the company has superior relational capital compared to its competitors (Geissdoerfer et al. 2018; Yang et al. 2017). Relational capital is the capital of a company that includes the strength of the company's internal and external relationships to effectively develop its business (Sulistyo 2016). The quality of the customer networking is defined as an action taken to strengthen the relationship resulted from collaboration in the process of creating added-value of services (Barravecchia et al. 2018). Based on this description, the first hypothesis is as follow:

H1: Relational Capital has a positive effect on Customer Networking Quality.

### ***3.2 Customer Retention and Customer Networking Quality***

Good customer retention can reduce customer complaints and complaints related to products or services and services provided by the company, so that service and product quality become a top priority for customers and will have a positive effect on the quality of customer networking. The value of the customer networking quality can be used as the main factor to measure the improvement of marketing performance of a company (Carlson et al. 2019). Customer networking quality is able to create a market with mediation or intermediary as a distributor to carry out interactive promotions between customers and the company. Besides, it has the first function as an intermediary between the company and the market thus it acts as a multi-function and is able to influence the customer networking and secondly it can improve the function of the networking. Third, it can develop mechanism of proper governance and management to create a sustainable network (Lu et al. 2018). Based on the description above, the second hypothesis was proposed:

H2: Customer Retention has a positive effect on Customer Networking Quality.

### ***3.3 Communication Quality and Customer Networking Quality***

Customer value has an essential meaning for the company. Value is the result of an exchange process with services from traditional to transactional marketing, with a customer network the company is expected to focus on providing and creating value through strengthening customer networks. Furthermore, the role of the customer needs to be maintained by maintaining good relations and being able to meet customer needs and desires and provide services so that customers do not turn to competitors (Hajli and Lin 2016). In addition, the quality of customer networking can be developed by paying special attention to customers from giving congratulations card or message on birthdays, weddings and valentine days as well as other important moments so that customers feel appreciated (Wu et al. 2017). The findings of (Udayana and Pramana 2019) study in 2019 showed that communication quality has a significant effect on customer networking quality. Thus, it can be stated the better the quality of communication from salespeople means the better the quality of customer networks for salespeople in small and medium- enterprises in Yogyakarta. Based on this elaboration, the following hypothesis was made:

H3: Communication Quality has a positive effect on customer networking quality.

### ***3.4 Consumer Satisfaction and Consumer Purchase Intention***

Customer networking quality has a fundamental role as an intermediary to build customer relationship interactions with the sellers which is necessary for creating, regulating and maintaining the market. Companies must maintain good customer networking quality. Based on real conditions, customer networking can be improved in order to increase the benefits from passive to being active (Jiang et al. 2016). The company's ability to manage relationships with customer networking quality has a direct effect on competitive capabilities and is able to improve the company's marketing performance, both between companies and customers (Udayana et al. 2018). Networking competence is the ability of a company to develop and manage relationships with partners, such as suppliers, distributors and customers, and to interact and maintain the relationships with customers for improving its marketing performance. Based on this description, the fifth hypothesis in the study is:

H4: Customer networking Quality has a positive effect on marketing performance.

### ***3.5 Communication Quality and Marketing Performance***

Good communication quality can be implemented by companies to help improve marketing performance, i.e., increasing sales volume, the number of customers, market share and company profitability. The company provides the best service for customers by improving interactive communication, providing excellent service to provide customer satisfaction, and willingness to accept constructive criticism and suggestions from customers is a strategy to maintain good relations between the company and its customers (Krizanova et al. 2019). Based on this description, a hypothesis was built:

H5: Communication Quality has a positive effect on Marketing Performance.

### ***3.6 Customer Retention and Marketing Performance***

A company can be successful by providing retention to customer and managing relationship with customer to create customer loyalty. The company seeks to increase customer loyalty with programs that are beneficial to customers and to maintain product and service quality so that it will be able to increase customer loyalty (Stahl et al. 2012). These efforts will eventually make the company able to increase customer loyalty which leads to manage customer retention. Other research findings which support customer retention is that customer trust and customer satisfaction can provide a different role in accepting service attributes in customer relationships and increasing customer retention (Tawinunt et al. 2015). The fundamental role of trust,

service satisfaction and product satisfaction can improve the company's marketing performance. In addition, customer retention can enhance marketing performance. Based on this description, a hypothesis was constructed:

H6: Customer retention has a positive effect on marketing performance.

## 4 Research Method

This study was carried out with owners of SMEs in Bantul, Special region of Yogyakarta province, as the population. The research method used purposive sampling with criteria 1) SMEs owners, 2) the business is less than 3 years, 3) domicile in Bantul. The number of respondents was 80 people and then the analytical technique used is regression analysis and processed using the SEM-Smart PLS. Questionnaires distributed to respondents included:

1. Relational Capital with 5 indicators (Kale et al. 2000; Miocevic 2016; Welbourne and Pardo-del-Val 2009).
2. Communication Quality with 7 indicators (Abed and Haghighi 2009)
3. Customer Retention with 4 indicators (Ascarza et al. 2018)
4. Market performance with 4 indicators (Morgan 2012)
5. Networking Customer Capability (Al-Nady et al. 2016).

## 5 Results of the Research

### 5.1 Characteristics of the Respondents

The results showed that the number of respondents is 50% female and 50% male. The age of the respondents was mostly between 50 and 60 years (32.50%), 31–40 years (20%) and 41–50 years (47.50%). The education level of most respondents was high school graduates (42.50). The majority of the respondents (90%) have worked for more than 5 years, between 3 to 5 years (5%) and less than 3 years (5%). The number of workers involved in the company of the SMEs was less than 5 people or have a maximum of 5 employees (82.50%), 6 to 10 employees (15.0%) and more than 10 employees (2.50%).

### 5.2 Outer Model Evaluation

The results of the analyses using SEM SmartPLS version 3.2.9 computer program are described in the following table and Fig. 1:

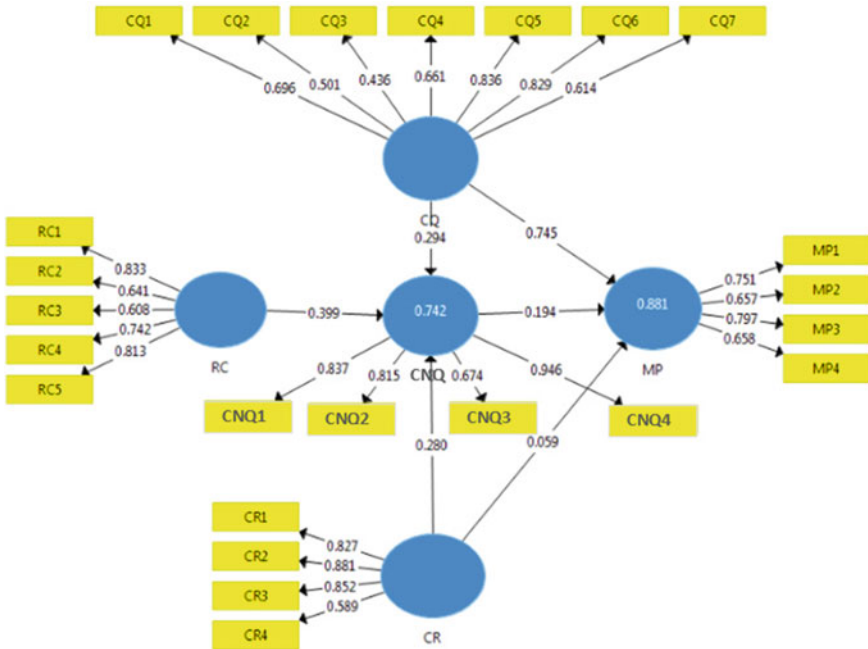


Fig. 1 Outer model

Table 1 Outer loadings

	RC	CQ	CR	CNQ	MP
RC1	<b>0.833</b>				
RC2	<b>0.641</b>				
RC3	<b>0.608</b>				
RC4	<b>0.742</b>				
RC5	<b>0.813</b>				
CQ1		<b>0.696</b>			
CQ2		<b>0.501</b>			
CQ3		<b>0.436</b>			
CQ4		<b>0.661</b>			
CQ5		<b>0.836</b>			
CQ6		<b>0.829</b>			
CQ7		<b>0.614</b>			
CR1			<b>0.827</b>		

(continued)

**Table 1** (continued)

	RC	CQ	CR	CNQ	MP
CR2			<b>0.881</b>		
CR3			<b>0.852</b>		
CR4			<b>0.589</b>		
CNQ1				<b>0.837</b>	
CNQ2				<b>0.815</b>	
CNQ3				<b>0.674</b>	
CNQ4				<b>0.946</b>	
MP1					<b>0.751</b>
MP2					<b>0.657</b>
MP3					<b>0.797</b>
MP4					<b>0.658</b>

**Table 2** Composite reability and validity

	Cronbach’s alpha	ρA	Composite reliability	Average Variance Extracted (AVE)
CQ	0.780	0.806	0.844	0.447
CR	0.797	0.818	0.871	0.633
MP	0.687	0.702	0.809	0.516
CNQ	0.839	0.873	0.893	0.678
RC	0.779	0.792	0.851	0.537

Table 1 and Fig. 1 above shows that all values of outer loading are above 0.50. Thus, it can be concluded that the values meet convergent validity.

Table 2 describes that the values of rho A and Composite Reliability are above 0,70. This can be stated that they have met the construct reliability.

### 5.3 Inner Model Evaluation

The results of the Inner model evaluation analysis shown in Fig. 2.

Table 3 above shows that the value of R Square Adjusted from Marketing Performance (MP) is 0.877. This means that the variation of Marketing Performance (MP) can be explained by the variables of Communication Quality (CQ), Consumer Networking Quality (CNQ) and Consumer Retention (CR) of 87.7%, while the remaining 12.3% is explained by other variables. Moreover, the value of R Square Adjusted of CNQ is 0.742 implying that the variation of CNQ can be explained by the Relational Capital (RC) variable, CQ and CR as much as 74.2%, while the other

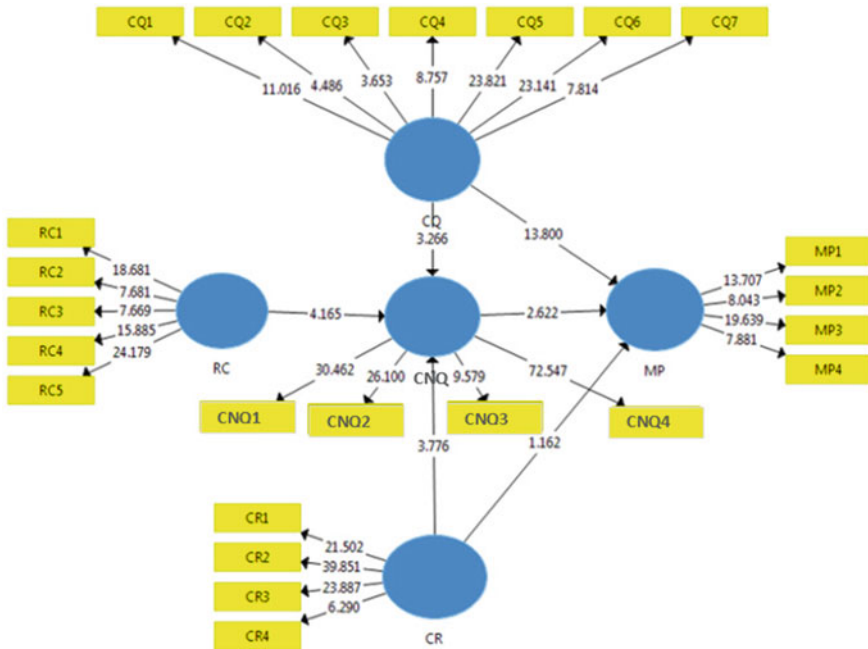


Fig. 2 Inner model

Table 3 R square

	R square	R square adjusted
MP	0.881	0.877
CNQ	0.742	0.732

variable explains 25.8%. The value of R Square Adjusted is higher than 0.67 which indicates the model is categorized as fit and strong.

### 5.4 Hypothesis Testing

The following table explains the results of hypotheses or significance testing:

Based on Table 4, it can be stated that:

1. RC has a significant positive effect on CNQ (P value  $0.000 < 0.05$ ); thus hypothesis 1 (H1) is accepted.
2. CR has a significant positive effect on CNQ ( P value  $0.000 < 0.05$ ); thus hypothesis 2 (H2) is accepted.
3. CQ has a significant positive effect on CNQ (P value  $0.000 < 0.05$ ); thus hypothesis 3 (H3) is accepted.

**Table 4** Path coefficients

	Original sample (O)	T statistics (IO/STDEVI)	P values	Hypothesis
RC → CNQ	0.399	4.165	0.000	<b>H1: Supported</b>
CR → CNQ	0.280	3.776	0.000	<b>H2: Supported</b>
CQ → CNQ	0.294	3.266	0.002	<b>H3: Supported</b>
CNQ → MP	0.194	2.622	0.006	<b>H2: Supported</b>
CQ → MP	0.745	13.800	0.000	<b>H2: Supported</b>
CR → MP	0.059	1.162	0.263	<b>H5: Not Supported</b>

4. CNQ has a significant positive effect on MP (P value  $0.000 < 0.05$ ); thus hypothesis 4 (H4) is accepted.
5. CQ has a significant positive effect on MP ( P value  $0.000 < 0.05$ ); thus hypothesis 6 (H5) is accepted.
6. CR has no significant effect on MP (P value  $0.000 < 0.05$ ); thus hypothesis 6 (H6) is rejected.

### 5.5 Meditation Test

The results of meditation effect test are elaborated in this table:

According to Table 5, it can be stated that:

1. The probability value of the effect of CQ on CNQ or P value is  $0.016 < 0.05$ . This indicates that CNQ functions as mediation variable of CQ’s effect on MP.
2. The probability value of the effect of CR on MP through CNQ or P value of  $0.022 < 0.05$  indicates that CNQ is a mediation variable of CR’s effect on MP.
3. The probability value of the effect of CR on MP through CNQ or P value of  $0.069 > 0.05$  shows that CNQ doesn’t function as a mediation variable of RC’s effect on MP.

**Table 5** Specific indirect effect

	Original sample (O)	T statistics (IO/STDEVI)	P values	Mediation/Not mediation
CQ → CNQ → MP	0.057	2.415	0.016	<b>Meditation</b>
CR → CNQ → MP	0.054	2.300	0.022	<b>Meditation</b>
RC → CNQ → MP	0.077	1.820	0.069	<b>Not meditation</b>



## 6 Discussion

The results of data analyses showed that relational capital has an important role to establish relationships with customers, suppliers, distributors related to the company's business network as well as to interact with human resources owned by the company. Therefore, the company's existence becomes strong in the midst of competitive business rivalry and thus can create a strong customer networking quality. The company must have a strong customer networking quality to improve relationships and collaboration in the process of creating value-added services to customers. The findings of this study indicated that good relational capital has a significant effect on company's customer networking quality. Customers are valuable assets for the company. One of many ways to retain customers is by providing good quality in product services to provide satisfaction to the customers. Hence, the customers will be loyal to the company's products. One of the efforts made by the company is to create customer retention, so that the existing customers will be loyal to the company. This can be achieved such as by providing good service to customers and resolving complaints experienced by the customers so that they become satisfied and will not switch the use of the product or service to another companies. Customer retention is also related to customer networking quality as a mediation or intermediary between the company and its customers. It is proven that there is a positive and significant relationship between better customer retention which will affect customer networking quality. Companies need to create good quality communication so that they can maintain relationships with parties outside the company, i.e., customers, suppliers, as well as distributors whose significant role in the production process and product marketing in order to improve company performance. In addition, it is necessary for the company to establish intensive relational interaction with customers thus the customers will be satisfied with easy communication. Moreover, the available service facilities will make the customers easier to contact the company. Accordingly, whenever there is a problem between the customer and the company, it can be solved directly. The research findings showed that there is a positive relationship between the quality of communication and the customer networking quality, i.e., the better quality of the existing communication will improve the quality of customer networking.

Communication quality has a significant effect to build communication with customers since the paradigm of marketing has evolved from the transactional to relationship marketing paradigm, i.e., Customer Relationship marketing or CRM in order to provide services to customers, so that the customers do not switch to other companies. The quality of communication will affect the company's marketing performance. If there is a problem regarding or experienced by customer, it will not be difficult to handle since the company is able to provide a good communication system. Marketing performance is a measure of the company success, both in terms of profits, market share and number of customers. Based on the results of hypothesis testing, it showed that the quality of communication has a significant positive effect on company performance.

After the company has good communication quality with various parties, i.e., suppliers, distributors and customers, the company then must be able to increase customer loyalty so that the customers do not use products from other companies. This shall be created if customers feel that they get the expected satisfaction from the products they consume. On the contrary, if the product does not provide added value both in quality and service, customers will leave and switch to others companies products. Therefore, the role of customer retention becomes significantly vital, if the company is not able to retain the customers. The findings of this study proved that the quality of communication has a positive and significant effect on marketing performance. Customer retention also has an essential role to create customer loyalty. Companies must be able to provide high quality service and product quality so that customers will not switch to other products. The customer trust factor also influences the satisfaction obtained through other service attributes such as distribution channels, product packaging and the success of the company's performance. The results of this study did not prove that customer retention has no significant effect on marketing performance in Small and Medium Enterprises.

## **7 Conclusion**

In this work, the results of data analyses concluded that; 1) It is proven that Communication Quality has a positive significant effect on Marketing Performance through Customer Networking Quality as a mediation variable; 2) Customer retention is scientifically identified to have a positive significant effect on Marketing Performance through Customer Networking Quality as a mediation variable. However, Relational Capital has no significant effect on Marketing Performance. Accordingly, Customer Networking Quality does not function as mediation variable.

### ***7.1 Managerial Contribution***

This study contributes to the following managerial contribution aspects:

1. Companies need to improve their communication quality in order to establish relationships with customers through Customer Relationship Marketing, suppliers and distributors as well as to strengthen customer networking quality so that the customers will be loyal to the products of SMEs. In addition, they need to manage customer retention so that in the long term it will be able to increase marketing performance.
2. Small and Medium Enterprises need to improve their service quality and product quality by strengthening the quality of customer networking, doing customer retention or retaining current customers to increase customer loyalty.

## 7.2 *Limitations and Recommendation for Future Research Agenda*

This study has limitations and recommendations for future research;

1. The population in this study is only small and medium-sized companies with a limited number of 80 respondents. Thus, it cannot make a generalization regarding increasing market performance.
2. Agenda for future studies can be conducted by employing larger samples and wider research area such as in provincial level so that the result of the study can be generalized particularly in the improvement of marketing performance of SMEs.

## References

- Abed, G.M., Haghighi, M.: The effect of selling strategies on sales performance. *Bus. Strategy Ser.* (2009)
- Al-Nady, B.A.-H.A., Al-Hawary, S.I.S., Alolayyan, M.N.: The role of time, communication, and cost management on project management success: an empirical study on sample of construction projects customers in Makkah City, Kingdom of Saudi Arabia. *Int. J. Serv. Oper. Manag.* **23**(1), 76–112 (2016)
- Ascarza, E., Neslin, S.A., Netzer, O., Anderson, Z., Fader, P.S., Gupta, S., Hardie, B.G.S., Lemmens, A., Libai, B., Neal, D.: In pursuit of enhanced customer retention management: review, key issues, and future directions. *Cust. Needs Solut.* **5**(1), 65–81 (2018)
- Barravecchia, F., Franceschini, F., Mastrogiacomo, L.: A service network perspective to evaluate service matching in early design. *J. Serv. Theory Pract.* (2018)
- Carlson, J., Wyllie, J., Rahman, M.M., Voola, R.: Enhancing brand relationship performance through customer participation and value creation in social media brand communities. *J. Retail. Consum. Serv.* **50**, 333–341 (2019)
- Geissdoerfer, M., Vladimirova, D., Evans, S.: Sustainable business model innovation: a review. *J. Clean. Prod.* **198**, 401–416 (2018)
- Hajli, N., Lin, X.: Exploring the security of information sharing on social networking sites: the role of perceived control of information. *J. Bus. Ethics* **133**(1), 111–123 (2016)
- Jiang, L., Jun, M., Yang, Z.: Customer-perceived value and loyalty: how do key service quality dimensions matter in the context of B2C e-commerce? *Serv. Bus.* **10**(2), 301–317 (2016)
- Kale, P., Singh, H., Perlmutter, H.: Learning and protection of proprietary assets in strategic alliances: Building relational capital. *Strateg. Manag. J.* **21**(3), 217–237 (2000)
- Krizanova, A., Lăzăroiu, G., Gajanova, L., Kliestikova, J., Nadanyiova, M., Moravcikova, D.: The effectiveness of marketing communication and importance of its evaluation in an online environment. *Sustainability* **11**(24), 7016 (2019)
- Lu, H. E., Potter, A., Rodrigues, V.S., Walker, H.: Exploring sustainable supply chain management: a social network perspective. *Supply Chain Manag.: Int. J.* (2018)
- Martini, S.B., Corvino, A., Doni, F., Rigolini, A.: Relational capital disclosure, corporate reporting and company performance: evidence from Europe. *J. Intell. Capit.* (2016)
- Miocevic, D.: The antecedents of relational capital in key exporter-importer relationships: an institutional perspective. *Int. Mark. Rev.* (2016)
- Morgan, N.A.: Marketing and business performance. *J. Acad. Mark. Sci.* **40**(1), 102–119 (2012)

- Morgan, R.M., Hunt, S.D.: The commitment-trust theory of relationship marketing. *J. Mark.* (1994). <https://doi.org/10.1177/002224299405800302>
- Stahl, F., Heitmann, M., Lehmann, D.R., Neslin, S.A.: The impact of brand equity on customer acquisition, retention, and profit margin. *J. Mark.* **76**(4), 44–63 (2012)
- Sulistyo, H.: Innovation capability of SMEs through entrepreneurship, marketing capability, relational capital and empowerment. *Asia Pac. Manag. Rev.* **21**(4), 196–203 (2016)
- Tawinunt, K., Phimonstathien, T., Fongsuwan, W.: Service Quality and customer relationship management affecting customer retention of long-stay travelers in the Thai tourism industry: a SEM approach. *Int. J. Arts Sci.* **8**(2), 459 (2015)
- Udayana, I.B.N., Pramana, A.: Membangun kepercayaan konsumen untuk meningkatkan intensi pembelian. *J. Manajemen Dan Kewirausahaan* **7**(2), 112–123 (2019)
- Udayana, I.B., Tjahjono, H., Nuryakin, N., Ardyan, E.: The important role of customer information quality on salesperson performance. In: *Proceedings of the 1st International Conference on Science and Technology for an Internet of Things* (2018)
- Vargo, S.L., Lusch, R.F.: Institutions and axioms: an extension and update of service-dominant logic. *J. Acad. Mark. Sci.* **44**(1), 5–23 (2016)
- Vargo, S.L., Lusch, R.F.: Service-dominant logic 2025. *Int. J. Res. Mark.* **34**(1), 46–67 (2017)
- Warnaby, G., Medway, D.: Rethinking the place product from the perspective of the service-dominant logic of marketing. In: Kavaratzis, M., Warnaby, G., Ashworth, G. (eds.) *Rethinking Place Branding*, pp. 33–50. Springer, Cham (2015). [https://doi.org/10.1007/978-3-319-12424-7\\_3](https://doi.org/10.1007/978-3-319-12424-7_3)
- Welbourne, T.M., Pardo-del-Val, M.: Relational capital: strategic advantage for small and medium-size enterprises (SMEs) through negotiation and collaboration. *Group Decis. Negot.* **18**(5), 483–497 (2009)
- Wu, S.-H., Huang, S.C.-T., Tsai, C.-Y.D., Lin, P.-Y.: Customer citizenship behavior on social networking sites: the role of relationship quality, identification, and service attributes. *Internet Res.* (2017)
- Yang, M., Evans, S., Vladimirova, D., Rana, P.: Value uncaptured perspective for sustainable business model innovation. *J. Clean. Prod.* **140**, 1794–1804 (2017)

# Organization of Management of Moral Risks of Banking Activity in a Modern Business Environment



Raisa Kvasnytska , Inna Dotsenko , Lesia Matviychuk ,  
and Larysa Oliinyk 

**Abstract** It is substantiated that the basis for effective functioning of banking institutions in the conditions of uncertainty is the identification and management of risks inherent in banking activities. In view of this, the purpose of the article is to substantiate the nature, determinants and varieties of moral risks, determine their place in the system of risks of banking activities and develop proposals to improve the effectiveness of moral risks management in the context of economic uncertainty's. The article determines that among the whole set of banking risks, moral risks are inherent in not only one, but almost all types of banking activity. Therefore, the emphasis is placed on the consideration of moral risks as a component of such systemic risks of banking activities as credit, market, operational and technological, currency risks and risk of change in interest rate. The necessity of considering the moral risks in the two-level plane, at the macro- and micro-levels is argued. It has been determined that one of the ways thus to neutralize moral risks, is to have a system of guaranteeing of banking deposits. It is substantiated that the detection of tendencies unwanted development of events with the purpose of subsequent neutralization of the negative consequences that can lead to one or another risk is carried out through an organized system of management of risk of the functioning of the bank. It is determined that the system of management of risks of the bank should be consistent with the risk classification, which is mandatory to separate into a separate group of moral risks, which will allow banks to have clear and transparent guidelines for building a system of management of risks in banks. Considering the specific nature of moral risks and the considerable level of their unpredictability, are proposed to create in the banks a separate department or position whose functional area of activity will be the identification, assessment and general management of moral risks, as well as to specify the tasks and methodological support of this department (position) in management of the moral risks of bank.

**Keywords** Risk · Moral risk · Determinants of moral risk

---

R. Kvasnytska (✉) · I. Dotsenko · L. Matviychuk  
Khmelnyskyi National University, 11, Instytuts'ka Str., Khmelnytskyi 29016, Ukraine

L. Oliinyk  
Vasyl' Stus Donetsk National University, 21, str. 600-richchia, Vinnytsia 21021, Ukraine

## 1 Introduction

The banking system is affected by a large number of various risks, both internal (the quality of the loan portfolio, management qualification, the structure of assets and liabilities, insiders dependence) and external (standard regulation, monetary policy, confidence in the banking system, economy of the country etc.). All together they cause constant monitoring of the fluctuating banking system as well as individual banks. It's affected by the fact that risk is an integral part of banking. Being very sensitive to the influence of socio-economic, political, climatic and many other factors banking institutions and any decision taken there isn't avoid of risk. Therefore, the purpose of the article is to study the different in nature and impact of the risks of banking, including moral hazard, which is an important prerequisite for ensuring its proper implementation in conditions of uncertainty.

## 2 Relevant Research

A significant number of economists have paid their attention to the problems of identification, regulation and minimization of risks in the banking sector. V. Vitlinsky, L. Donets, V. Kovalenko, S. Kozmenko, L. Moroz, L. Primostka and others have made a major contribution to understanding of this aspect. The works of such well-known economists as T. Bolgar, V. Dombrovsky, A. Epifanov, A. Zveryakov, Z. Lutsishin, A. Plastun, S. Poberezhny and others are devoted to the moral risks management. Unfavourable situation in Ukrainian economy, in particular in the financial and banking spheres, requires constant analysis and correct management decisions to minimize moral damage. Thus, we have to analyses the essence, determinants of moral risk and types of moral damage, determine their place in the system of banking risks and develop recommendations for improving the efficiency of moral risk management in conditions of economic uncertainty.

## 3 Obtained Research Results

Risk is naturally a complex phenomenon that must be considered in any activity. Risk in banking sphere is viewed as a likelihood of deviation from the planned (expected) performance indicators of the bank while implementing its active–passive operations, their organization, the state of corporate management and the impact of other external factors, whose consequences might be either negative, neutral or positive (Novikov et al. 2013, p. 16). Therefore, from banking perspective, risk is the probability of income loss or a decrease in the market value of bank's capital due to the unfavorable influence of external or internal factors.

Certain risks are an indispensable part of any banking activity. Therefore, banking has significant experience in identifying, measuring, controlling and monitoring the risks inherent in the banking sector. Thus, with the aim of performing banking supervision, the National Bank of Ukraine has identified nine categories of risk, namely (The Verkhovna Rada of Ukraine 2021): credit risk; liquidity risk; interest rate risk; market risk; currency-related risk; operational and technological risk; reputation risk; legal risk; strategic risk.

However, it should be noted that the variety of the above-mentioned risks is to be considered integrally, according to the probability of their occurrence due to actions or inaction of certain subjects of a particular banking operation or activity. In our opinion it is extremely important to separately consider the risk that is not mentioned in the list above, but which is a component of various types of risks and, which is associated with human factor and human behavior that is moral risk or moral hazard. The concept of moral hazard originated in insurance industry. This risk meant possible dangerous consequences associated with human nature and human behavior, reputation of the insured or of insurance company (Epifanov et al. 2009, p. 43). The basis of moral hazard is the idea that the very fact of insurance increases the likelihood of an event from the occurrence of which insurance is provided. This is because insurance weakens the insured party's incentives to take preventive measures.

In banking, moral hazard is associated with decency or honesty of the future borrower. That is, moral risks are the actions of economic agents aimed at maximization of their own benefits (to the detriment of other economic entities) due to different interests which causes them to change behavior and actions correspondingly (Adamenko 2004, p. 50). Moral risks are attributed to different classification groups of banking risks. In particular, L.A. Garyaga (Hariaha 2015, p. 78) classifies moral risks as a type of risks in terms of the nature of their manifestation, placing them next to business and financial risks. A.V. Lysenyuk (Lysenok and Bieliaiev 1999, p. 243) distinguishes moral risk among internal functional risks that can be quantified at the level of strategic and legal risks, as well as the risk of reputation. Moral risk is associated with liquidity risk, because liquidity risk arises from the inability to manage unplanned outflows of funds, changes in funding sources and/or fulfilling off-balance sheet obligations. However, in our opinion, moral risk can be a component of the following types of risks: credit, market, operational and technological, currency-related risks, as well as the risk of changes in the interest rate.

One of the main prerequisites for the emergence of moral risks is the asymmetry of information, which is a type of incomplete information that inevitably accompanies economic processes in society. It affects the conditions and specifics of market functioning; causes additional transaction costs for economic agents, which means that the two parties possess different levels of information about the subject of their relations. Due to this asymmetry of information one of the parties has less accurate information compared to the other. Therefore opportunities for abuse while carrying out various financial transactions by a more informed party significantly arise.

Moral risks are a significant problem for the financial security of banks in Ukraine. They include various frauds committed both by clients and by bank employees. The scope of clients' frauds is dealt with by bank security services. The list of potential

frauds is usually known in advance. That is, the bank can eliminate the opportunities for such actions by taking preventive measures. The possible consequences of moral risk include: deterioration loan portfolio quality; an increase in the volume of problem and bad loans; reduction of bank's competitive level; negative reputation impact due to high-risk transactions; loss of professional employees; stability threats.

Situations in which moral risk arises are characterized by a combination of the following conditions: the client and the bank pursue different interests, the bank pursues its own interests to the detriment of client's interests; banks are insured against the adverse consequences of their actions; the client is not able to control overall bank activities. In addition, it is advisable to consider moral hazard as a component of compliance risks, which represent the likelihood of losses/sanctions, additional losses or shortfalls in planned income, or loss of reputation due to the bank's failure to comply with the requirements of legislation, regulatory legal acts, market standards, rules of fair competition, rules of corporate ethics, the emergence of a conflict of interest, as well as internal banking regulations (National Bank of Ukraine 2021).

One of the ways to ensure stability of banking sector and maintain public confidence in the reliability of banking system of the state is to have a system to guarantee protection of bank deposits. The system of guaranteeing deposits of the population is designed to protect depositors from "moral risk", and banks from "being raided". The fact is from client's perspective the moral risk is reduced if there are certain institutions or regulations which guarantee that their deposited funds are subject to return, regardless of bank's financial situation. For this purpose State Deposit Guarantee Fund for Individuals (SDGFI) was instituted in Ukraine. The larger the amount of the deposit is guaranteed by this Fund, the higher level of protection from negative impact of moral hazard the client will feel. At the same time, moral risk from Guarantee System's perspective is a situation in which a depositor chooses a bank that offers higher interest on the deposit, knowing that they are insured against financial risks by the Fund, and losses in case of bank's bankruptcy will be covered by the SDGFI. Therefore, the client is interested in depositing with the bank with a higher interest rate, irrespective of the bank's vulnerability to risks. This behavior of depositors and banks increases the aggregate risk of the system and ultimately might lead to "total bank bankruptcy".

Development and successful maintenance of an effective deposit guarantee system is an ability to find a proper balance between "moral hazard" and so called "bank raids". This problem is extremely relevant for Ukraine as far as Ukraine spent 5% of its GDP during the crisis period of 2008–2009 on recapitalization of banks, and 14% of GDP during the crisis of 2014–2015. During the crisis of 2008–2010, 24 banks were declared insolvent and UAH 3.61 billion were paid. The crisis of 2014–2017 became even a bigger challenge, when every other out of more than 180 banks collapsed and had to stop their activities on the market. The most shocking, in terms of payments, was year 2015, when the SDGFI reimbursed worth of UAH 49.5 billion to depositors. In 2014–2015, 33 banks were withdrawn from the market annually (Deposit Guarantee Fund for Individuals 2021). Each time, this led to an increase in public debt and, accordingly, deterioration in the country's financial stability. So,



the SDGFI, which was established to protect the rights and legitimate interests of bank depositors, performs special functions in the field of guaranteeing deposits of individuals and withdrawing insolvent banks from the market. It remains one of the functional elements of leveling the impact of moral damage on the deposit activities of Ukrainian banks.

However, it should be noted that timely identification of moral damage is an important component in organizing the process of ensuring the financial security of a bank. After all, banks have to take into account all possible risks and minimize their impact not only for their own security, but also on shaping of favorable financial and economic capital at the state level. Therefore, one of the main components of bank's financial security is the risk management system, which is created by the bank in accordance with its size, business model, scale of activities, types, complexity of bank operations and provides detection, assessment, monitoring, reporting, control and mitigation of all types of significant risks of the bank in order to determine the amount of capital required to cover negative consequences of these risks.

Banking risk management is the process by which the bank identifies risks, evaluates their scope, monitors and controls its vulnerabilities, and also analyses relationships between various categories of risks. In other words, risk management involves the process of preparing and implementing procedures, the purpose of which is to reduce the number of wrong decisions as well as their possible negative consequences. In the process of banks' functioning, risk management is based on the concept of acceptable risk, which makes it possible to influence the level of risky practices and minimizing them (Kovalenko 2017, p. 44).

Revealing undesirable trends with the aim of subsequent neutralization of their negative consequences is carried out based on controlling risk levels in the bank's functioning. Risk level management in the process of decision making involves risk analysis in the process of strategic, tactical and operational planning and enables qualitative and quantitative assessment of possible risks. This data can be taken into account when making a decision or indicate the risk factors, whose likelihood is high and whose impact will be the most significant.

For effective risk management it is possible for banks to run a special department whose organizational structure can be different for each bank due to the specifics of its functioning. For example, in JSC Commercial Bank "PrivatBank" risk management policy, monitoring and control (JSC CB and "Privatbank" 2021) are performed by units, whose activities are controlled by the credit committee. Besides, risk management is also performed by the following departments of the bank: Treasury; Risk Management Department; Department of Internal Control and Fraud Management; Finance and Risks Department. The bank has also introduced an internal control system, which is monitored and controlled by: Internal Audit Department and Financial Monitoring Department. The Compliance Department monitors compliance with the risk management processes and compliance with regulations and other legal requirements.

However, in our opinion, the bank's risk management system should be consistent with the classification of risks, where we deem necessary to distinguish moral damage into a separate group. This will enable banks to have clear guidelines for

enhancing their risk management strategy both for internal and external analysis of their efficiency parameters.

Taking into account the specifics of moral damage and significant level of its unpredictability, it is imperative for banks to improve organizational efficiency in managing these risks. Based on this, we consider it necessary to create a separate department or position in banks, whose main function will be identification, assessment and management of moral risks. For example, in the risk management structure of JSC Commercial Bank “PrivatBank” among the activities and competences of Risk Management Department it is necessary to establish a separate subdivision i.e. “Moral Risks Management” (or position of moral risk manager). The tasks of this Department or risk manager will be: to ensure coordination of work on moral hazard management; creation and maintenance of a database of cases related to moral hazard; measurement, monitoring, assessment of moral hazard and elaboration of recommendations to prevent and mitigate moral hazards; elaboration of measures to minimize moral hazard; development of moral hazard profile; ensuring control of personal data protection; ensuring control of compliance with compensation system requirements and bringing to disciplinary responsibility; ensuring control over the bank’s interaction with clients and counterparts in order to prevent the bank from being attracted to illegal operations; ensuring management of conflicts of interest at all levels of bank’s organizational structure, transparency of processes; preparing reports on significant changes in bank’s activities and new products in terms of moral hazard for their implementation; preparing reports on moral hazard issues for making decisions on credit operations; participation in the investigation of fraud-related cases; informing board of directors, collegial bodies and officials on related issues; preparing reports for better moral hazard management.

In such conditions, the methodological support of the moral risk management system should be: complex evaluation of all risk elements while implementing methodology of moral risk management; elaborating a list of moral hazards, clarification of their essence and nature as well as elaborating criteria for determining and assessing moral damage; determining basic principles and procedure for managing moral risks of a bank; introducing a comprehensible risk management structure in a bank; appointing employees to deal with moral risks in a bank; provide a clear distribution of duties and responsibilities as for identification and neutralization of moral damage and smooth communication among bank departments. Also, in a banking institution, if possible, it is necessary to establish limits for moral risk, since use of limits makes it possible to control risk levels within the bank’s risk appetite (the amount of risk that the bank is ready to accept).

## 4 Conclusions

Based on the obtained results of this research it is possible to conclude that risk is an integral part of banking activity, since overall functioning of banking institutions and any decision in banking is not void of risks. Only high level of risk awareness, and

effective risk management strategies can ensure reliability of banking institutions. One of the risks that might arise from clients' doubts or distrust of the stability and reliability of banks' work leads to so-called moral hazard. One of its main prerequisites is the asymmetry of information, which means that the two parties possess different levels of information about the subject of their relationships. Timely identification of moral damage is an important component in providing overall financial security of the bank. Therefore, for effective moral risk management it is advisable to create a separate department or position in banks, whose main function is identification, assessment and managing moral risks for various types of banking activities. At the same time, the expedient directions of further research in the field of risk management of banking activity are the improvement of methods of moral risk management, methods of their assessment. Therefore, the subject of future research should choose the development of effective ways to identify moral hazards and assess their impact on the efficiency of banking institutions.

## References

- Novikov, V., Krylova, V., Nikonova, M.: Practice of working with problem assets of banks: world experience and realities of Ukraine. *Bull. Natl. Bank Ukr.* **4**, 15–21 (2013)
- The Verkhovna Rada of Ukraine. Methodological guidelines for the inspection of banks "Risk Assessment System". <https://zakon.rada.gov.ua/laws/show/v0104500-04/>. Accessed 21 Aug 2021
- Epifanov, A., Plastun, A., Dombrovsky, V.: Financial security of enterprises and banking institutions: monograph. DBS "UBS NBU", Sumy (2009)
- Adamenko, S.: Characteristics and classification of threats in the banking system of Ukraine. *Strategic Panorama* **4**, 48–52 (2004)
- Hariaha, L.: Improving the classification of bank credit risk. *Bull. Univ. Bank.* **1**(22), 76–81 (2015)
- Lysenok, O., Bieliaiev, O.: Critical analysis and problems of classification of banking risks. *Format. Mark. Econ.* **15**, 241–249 (1999)
- National Bank of Ukraine. <http://www.bank.gov.ua>. Accessed 31 July 2021
- Deposit Guarantee Fund for Individuals. <http://www.fg.gov.ua>. Accessed 03 Aug 2021
- Kovalenko, V.: Risk management system in banks: theoretical and methodological aspects: monograph. ONEU, Odessa (2017)
- JSC CB "Privatbank". <http://www.privatbank.ua>. Accessed 05 Aug 2021

# The Links Between Banking Theories and Financial Inclusion: A Theoretical Framework



Fadi Hassan Shihadeh 

**Abstract** This paper will present and discuss the theories related to the banks, as financial intermediation playing a significant role in enhancing financial inclusion. Furthermore, trying to link the target of financial inclusion with banks target to enhance their performance, decreasing risk to maximizing the stockholder's wealth. Meanwhile, this paper will present three main theories behind banks and link them to financial inclusion; Financial Intermediation Theory of Banking; Fractional Reserve Theory of Banking; The Credit Creation Theory of Banking.

**Keywords** Banking services · Financial · Intermediation · Profits · Risks

## 1 Introduction

Banks as financial institutions looking to maximize the stockholder's wealth, by achieving more profits and keeping the liquidation at an acceptable limit to cover their needs during the daily operations, (Shihadeh et al. 2019). According to the Consultant Group to Assist the Poor (CGAP), "financial inclusion means that households and businesses have access to and can effectively use appropriate financial services. Such services could be provided responsibly and sustainably, in a well-regulated environment" (Consultative group to assist the poor 2012). Where enhancing financial inclusion will attract more clients to the official banking system, which means more deposits, thus more credits and revenues, (Shihadeh 2021). Therefore, understanding the banking theories that control and guide the practice in the banking system would be useful.

From the point that banks looking for more profits and fewer risks, therefore looking for expanding the deposits throw offer more services to cover clients needing, could increase the ability to giving more loans and banking facilities. Moreover, for attracting more clients to the banking system, the official institutions such as central banks and banks in the economy can work together to offer more services. Such

---

F. H. Shihadeh (✉)

Business and Economics Faculty, Palestine Technical University-Kadoorie, Tulkarm, Palestine  
e-mail: [f.shihadeh@ptuk.edu.ps](mailto:f.shihadeh@ptuk.edu.ps)

services can be offered by the banking system; enhancing online banking (Shihadeh 2020; Al-Zatari and Abu Reehan 2021), giving more attention to small and medium enterprises-SMEs-(Shihadeh et al. 2019), offer more suitable services for females and youth to have more chances to establish their firms and enhancing their life, (Shihadeh 2019, 2018).

Basing on the above foreword, this paper tries to link the banking theories with financial inclusion, thus convince the bank's managers that enhancing financial inclusion could positively reflecting on banks' profits. Banks can draw their future agenda consistent with the government agenda in regards to enhance financial inclusion as a way for financial development and economic stability, (Shihadeh 2018; Huang et al. 2021).

The next section will present and discuss the banking theories and finding out how banks could using these theories to enhance financial inclusion consistent with their goals- more profits and fewer risks- therefore maximization of the stockholder's wealth.

## 2 Banking Theories and financial inclusion

This section will present the main banking theories; financial intermediation theory of banking; fractional reserve theory of banking; the credit creation theory of banking. Therefore, analyze and discuss the relationship between these theories and enhancing financial inclusion.

### 2.1 *Financial Intermediation Theory of Banking*

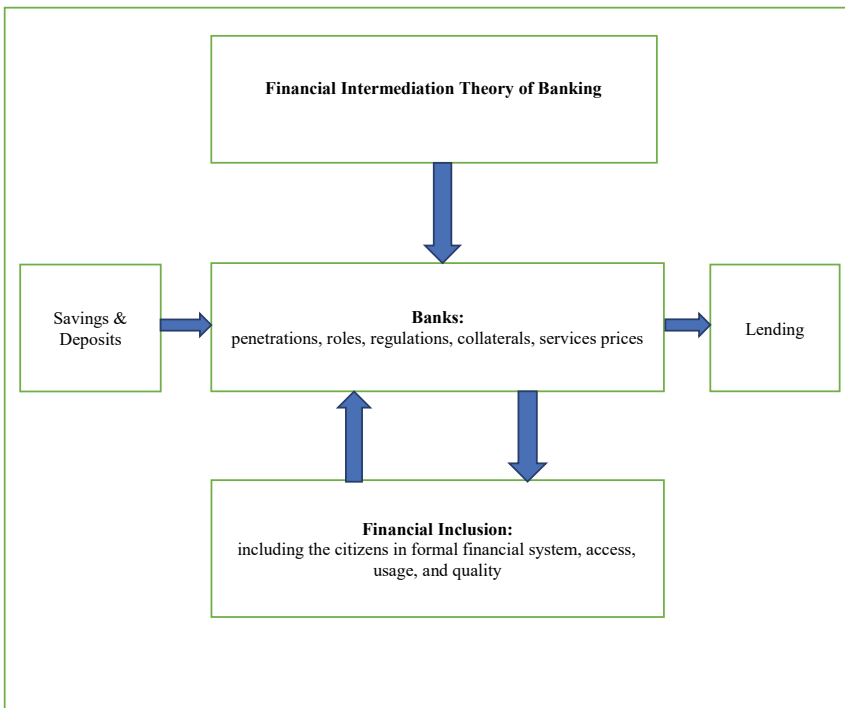
Financial Intermediation Theory of Banking considers banks as financial intermediaries, and there is no difference between banks and other financial institutions. They gathering the deposits from (surplus units) and lend them to (deficit units), where banks can match the maturities between the deposits and loans, and thus create the liquidity, (Dewatripont et al. 2010; Werner 2016). Where Von Mises (1912), who wrote about this theory:

“The activity of the banks as negotiators of credit is characterized by the lending of other people's, that is, of borrowed, money. Banks borrow money in order to lend it; ... Banking is negotiation between granters of credit and grantees of credit. Only those who lend the money of others are bankers; those who merely lend their own capital are capitalists, but not bankers” (Werner 2016; Mises 1912).

These researchers pointed out that the banks can lend money when they are gathering deposits and savings, and thus they can lend these amounts to those looking for borrowing, (Matthews and Thompson 2005). Further, other economists draw a line to differentiate between commercial banks as financial intermediation and other institutions. Gurley and Shaw (1955, 1960) and Tobin (1963) argued that commercial

banks and other financial intermediation same, but the difference between them is in the degree of following the regulation and how they deal with it, such as interest rate.

From the above discussion and the economist argument about this theory, the study could link this theory with financial inclusion as banks a kind of financial intermediation can aggregate the savings and deposits and then lend it to others. Therefore, this theory can be linked with financial inclusion through the link between the bank’s function and financial inclusion targets and factors. As addressed in the previous section of this study, financial inclusion looking to include all citizens in the formal financial system (banks and other financial institutions). Therefore, citizens will bring their deposits and savings to the banks (these banks are what looking for), where the disadvantaged (poor, female, youth, and SMEs) can use these deposits and savings by asking for loans from the banks. Meanwhile, banks have to pay the interest rate for deposits and savings, at the same time collecting interest rates in lending money. During this theoretical framework for the Financial Intermediation Theory of Banking, banks working in open branches, ATMs, POSs, developing their system and services to attract more savings and deposits to lend to others. The links between this theory and financial inclusion could be drawn as in Fig. 1.



**Fig. 1** The links between financial intermediation theory of banking and financial inclusion. Created by the author

## 2.2 Fractional Reserve Theory of Banking

This theory presents that one bank cannot gather all deposits and savings. Therefore, this could be happened through the whole banking system, and thus create money through the “multiple deposits expansion”. Further, this theory considers the banks as financial intermediations. Several researchers and economists support this theory: (Culbertson 1958; Aschheim 1959; Smith 1959, 1966; Solomon 1959; Guttentag and Lindsay 1968). Basing on this theory, each deposit bank can cut 10% from the deposit amount and thus lend the rest of that amount which is 90%, this lending amount would increase the deposits among other banks, (Hayek 1929; Heijdra and Van der Ploeg 2002).

The conceptual of this theory applying to an essential role on financial inclusion, as banks together can open branches, and investing in more banking penetration thus attracting deposits and saving to the banking system, this could increase the bank’s ability to lend more money and risk diversification. Furthermore, investing in penetration, competition, services innovation, and prices could enhance the local and foreign investment in the country, thus, more jobs, and decrease the unemployment rate, thus poverty alleviation. Therefore, banks can enhance their ability to lend and earn more profits and revenues. Figure 2 presents the mechanism of fractional reserve theory of banking and financial inclusion.

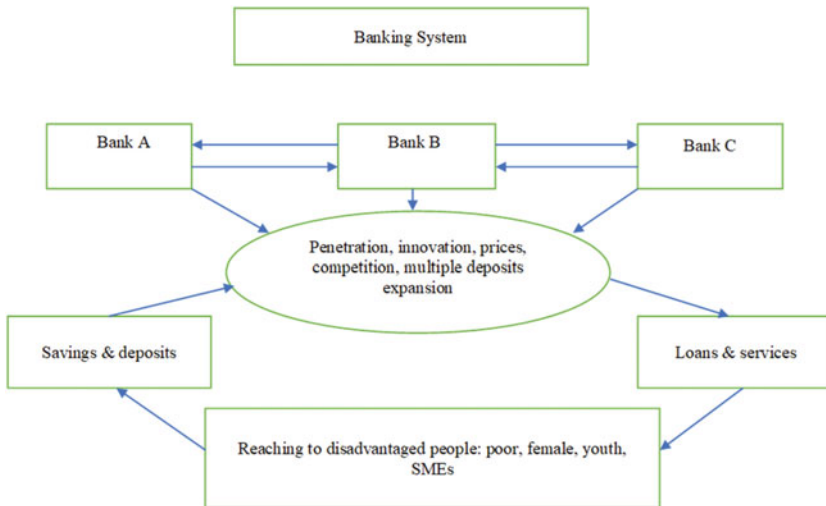
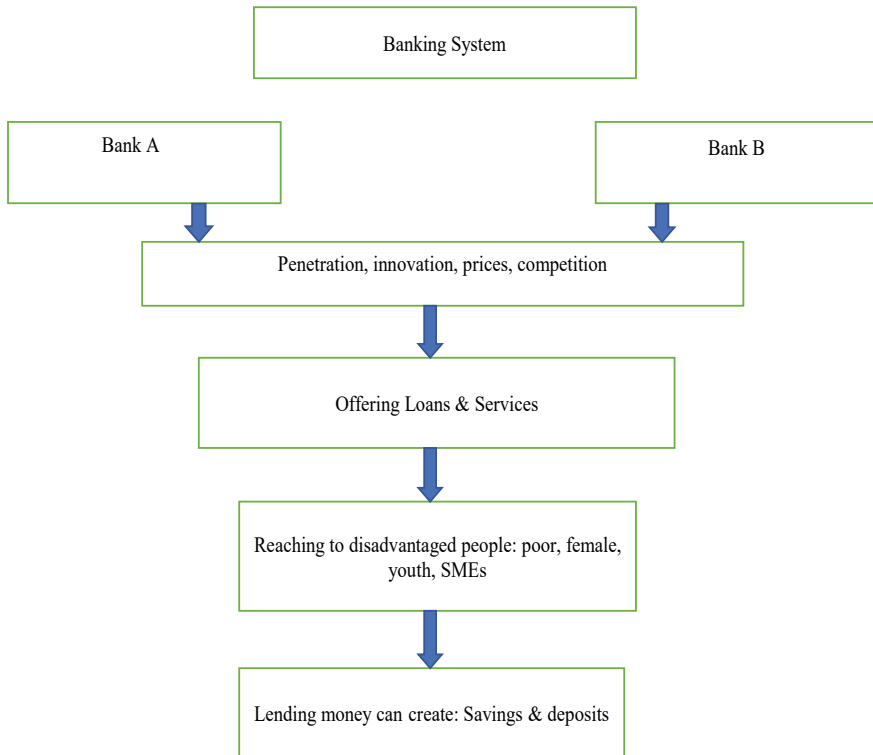


Fig. 2 The links between fractional reserve theory of banking and financial inclusion. Created by the author

### 2.3 The Credit Creation Theory of Banking

This theory basing on that bank can create credit without deposits and the banking system. Thus, this theory is inconsistent with the previous theories in considering. Like other theories, this theory has their economists’ supporters such as (Werner 2016; MacLeod 1856). Therefore, this theory supposes that bank does not need deposits to lend money; in contrast, banks can create deposits from lending.

As the main target of Financial inclusion, includes all citizens in the formal financial system to enhance their ability to reach the financial sources at affordable price. Thus, this theory provides a base to enhance the disadvantaged’s ability to use the financial sources especially the credits. Therefore, through credits, the bank can create money and deposits. The next Fig. 3 will present the links between the Credit Creation Theory of Banking and financial inclusion.



**Fig. 3** The links between credit creation theory of banking and financial inclusion. Created by the author



### 3 Conclusion

This paper aimed to present and discuss the banking theories and its mechanism in enhancing financial inclusion, where these three theories present how banks-as intermediation institutions- working in regarding to attract deposits and offer various services, (Shihadeh et al. 2018). The banking theories present the basic idea how the banking sector could influence the financial inclusion consistent with global agenda. Therefore, achieving financial stability, poor alleviation, inequality between male and female, decrease the unemployment rate, thus sustainability in the economic development. Moreover, policymakers and banking managers could work together according to enhance financial inclusion through offer convenient services for disadvantaged people. Therefore, increasing the bank's revenues and maximization stockholders wealth. Further research could be conducted to empirically testify the relationship between banking theories and financial inclusion.

**Acknowledgements** The author is thankful to Palestine Technical University—Kadoorie for funding and support this research

### References

- Shihadeh, F., Gamage, S.K.N., Hannon, A.: The causal relationship between SME sustainability and banks' risk. *Econ. Res.-Ekon. Istraživanja* **32**(1), 2743–2760 (2019). <https://doi.org/10.1080/1331677X.2019.1655465>
- Consultative group to assist the poor, CGAP: Annual report, advancing financial access for the world's poor (2012). [www.cgap.org/sites/default/files/CGAP-Annual-ReportDec-2012.pdf](http://www.cgap.org/sites/default/files/CGAP-Annual-ReportDec-2012.pdf)
- Shihadeh, F.: The big data-driven digital economy: artificial and computational intelligence. *Stud. Comput. Intell.* **974** (2021). [https://doi.org/10.1007/978-3-030-73057-4\\_22](https://doi.org/10.1007/978-3-030-73057-4_22)
- Shihadeh, F.: Online payment services and individuals behavior: new evidence from the MENAP. *Int. J. Electr. Bank* (2020). <https://doi.org/10.1504/IJEBANK.2020.114763>
- Al-Zatari, M., Abu Reehan, S.: Using online banking among Covid-19 pandemic: a systematic literature review. *Res. J. Financ. Account.* (2021). <https://doi.org/10.7176/RJFA/12-18-01>
- Shihadeh, F.H.: Individual's behavior and access to finance: evidence from Palestine. *Singapore Econ. Rev.* (2019). <https://doi.org/10.1142/S0217590819420025>
- Shihadeh, F.H.: How individual's characteristics influence financial inclusion: evidence from MENAP. *Int. J. Islam. Middle East. Financ. Manag.* **11**(4), 553–574 (2018). <https://doi.org/10.1108/IMEFM-06-2017-0153>
- Huang, R., Kale, S., Paramati, S., Taghizadeh-Hesary, F.: The nexus between financial inclusion and economic development: comparison of old and new EU member countries. *Econ. Anal. Policy* **69**, 1–15 (2021). <https://doi.org/10.1016/j.eap.2020.10.007>
- Dewatripont, M., Rochet, J.C., Tirole, J.: *Balancing the Banks: Global Lessons from the Financial Crisis*. Princeton University Press, Princeton (2010)
- Werner, R.A.: A lost century in economics: three theories of banking and the conclusive evidence. *Int. Rev. Financ. Anal.* **46**, 361–379 (2016) <http://dx.doi.org/10.1016/j.irfa.2015.08.014>
- Mises, L.V.: *Theorie des Geldes und der Umlaufmittel*. Dunckerund Humblot, Leipzig (1912)
- Matthews, K., Thompson, J.: *The Economics of Banking*. Wiley, Chichester (2005)
- Gurley, J.G., Shaw, E.S.: Financial aspects of economic development. *Am. Econ. Rev.* **45**, 515–528 (1955)

- Gurley, J.G., Shaw, E.S.: *Money in a Theory of Finance*. Brookings Institution, Washington (1960)
- Tobin, J.: 'Commercial banks as creators of money', Cowles foundation paper 205 reprinted. In: Carson, D. (ed.) *Banking and Monetary Studies*. Homewood, Irwin (1963)
- Culbertson, J.: Intermediaries and monetary theory: a criticism of the Gurley Shaw theory. *Am. Econ. Rev.* **48**, 119–131 (1958)
- Aschheim, J.: Commercial banks and financial intermediaries: fallacies and policy implications. *J. Polit. Econ.* **LXVII**(February), 59–71 (1959)
- Smith, W.: Financial intermediaries and monetary controls. *Quart. J. Econ.* **73**, 533–553 (1959)
- Solomon, E.: Financial institutions in the savings–investment process. In: *Proceedings of the Conference on Savings and Residential Financing*, pp. 10–55. U.S. Savings and Loan League, Chicago (1959)
- Smith, P.F.: Concepts of money and commercial banks. *J. Financ.* **21**, 635–648 (1966)
- Guttentag, J.M., Lindsay, R.: The uniqueness of commercial banks. *J. Polit. Econ.* **76**(5), 991–1014 (1968)
- Hayek, F.: *Geldtheorie und Konjunkturtheorie*. Hölder-Pichler-Tempsky (1929)
- Heijdra, B.J., Van der Ploeg, F.: *Foundations of Modern Macroeconomics*. Oxford University Press, Oxford (2002)
- MacLeod, H.D.: *The Theory and Practice of Banking*, 2 vols. Longman, Greens and Co., London (1856). (citations from the 6th edition of 1906)
- Shihadeh, F.H., Hannon, A., Guan, J., Ul Haq, I., Wang, X.: Does financial inclusion improve the banks' performance? Evidence from Jordan. In: Kensinger, J.W. (ed.) *Global Tensions in Financial Markets (Research in Finance)*, vol. 34, pp. 117–138. Emerald Publishing Limited (2018). <https://doi.org/10.1108/S0196-382120170000034005>

# Examining the Practice of Tawarruq Credit Financing in Malaysian Credit Co-operatives



Rusni Hassan  and Harith Hamidi

**Abstract** Credit co-operatives are one of the co-operatives that contribute to Malaysia's economic development and progress. These co-operatives have provided credit facilities to their members, either individually or institutionally. Nowadays, credit co-operatives have applied an Islamic contract known as Tawarruq. However, there is limited research and literature on the practices of Tawarruq in this sector. Many studies only focused on the Tawarruq practices of Islamic Banking Institutions (IBs). While Tawarruq practices in IBs face some issues, the question is whether the same issues apply to the credit co-operatives. Therefore, this study focused on the application of Tawarruq practised by the credit co-operatives. This study was conducted qualitatively by compiling data and information from interviews with the management and observations on the process and other related documents. This study revealed that credit co-operatives contain two modes of Tawarruq arrangements or transactions. The first arrangement is credit co-operatives acting as principals, while the second arrangement is credit co-operatives acting as agents. Hopefully, the findings will provide a good understanding of Tawarruq practices in this sector.

**Keywords** Tawarruq · Commodity Murabaha · Credit co-operatives

## 1 Introduction

In Malaysia, the co-operative movement began in 1922 with the primary objective of protecting rural people's welfare and preventing them from being exploited by moneylenders during that era. It was established to liberate the public from debt-bondage caused by exorbitant interest rates by providing access to a more viable credit system, specifically the co-operatives credit system (Kementerian Pembangunan Usahawan dan Koperasi 2021). This Malaysian co-operative society has grown into a variety of different co-operatives in various sectors, such as banking, credit,

---

R. Hassan (✉) · H. Hamidi  
IIUM's Institute Islamic Banking and Finance, Kuala Lumpur, Malaysia  
e-mail: [hirusni@iium.edu.my](mailto:hirusni@iium.edu.my)

**Table 1** A summary statistics of co-operatives by functions in June 2020

	Number of co-operatives	Membership	Shares/subscriptions	Assets	Turnover
			Millions		
Banking	2	973,897	3,943.71	114,122.33	12,800.56
Credit	575	1,134,916	6,547.22	16,607.27	5,524.84
Agricultural	3,254	519,924	732.16	3,871.00	680.13
Housing	313	129,864	198.33	1,017.71	130.83
Industrial	363	16,596	17.54	83.66	19.72
Consumer	5,484	2,063,328	441.24	1,730.97	877.60
Construction	259	82,334	37.61	169.17	32.54
Transportation	487	115,741	79.61	346.67	406.04
Services	3,931	1,065,116	651.45	3,758.56	728.44
Total	14,668	6,101,716	12,648.87	141,707.33	21,200.70

Source: SKM's websites

agriculture, housing, farmers, industry, consumer, development, transportation, and services.

A brief explanation of the co-operative society's statistics in Malaysia reveals that as of June 2020 (Table 1), Malaysia had 14,668 registered co-operatives with over 6 million members. Thus, approximately 19% of the country's population were members of a cooperative. The highest number of co-operatives was consumer co-operatives, followed by credit co-operatives. Consumer co-operatives had a total of 2 million membership, followed by credit co-operatives with a total of 1.1 million membership. However, credit co-operatives outperformed consumer co-operatives in terms of capital share/fee, asset count, and purchase value.

## 2 Literature Review

### 2.1 Credit Co-operatives in Malaysia

There are three distinct forms of co-operatives in Malaysia, each with a different membership structure (Kementerian Pembangunan Usahawan dan Koperasi 2021). First, Angkatan Koperasi Kebangsaan Malaysia Berhad (ANGKASA) is the sector's single apex body, comprising secondary and primary co-operatives. Second, there are those known as secondary co-operatives, which comprise primary co-operatives as a members. Thirdly, as represented in (See Fig. 1), are common co-operatives that have individuals as members.

Credit co-operatives are defined as co-operative activities that include lending, deposit taking, and providing other credit facilities to their members by their co-operative bylaws (Hassan et al. 2018). During their early years, credit co-operatives began by providing loans conventionally, charging interest on *riba*-based loans.

However, in 1977, a movement began to ensure that credit facilities offer Shariah-compliant products. The Koperasi Belia Islam Malaysia was the first to initiate this movement (Hashim 1997). As a result, credit co-operatives began extending facilities under Shariah contracts, such as *Mudarabah*, *Murabahah*, *Musyarakah*, *Bai Bithamin Ajil*, *Bay Inah*, and *Ar-rahnu* (Anuar 1990). From 1977 to 2019, the most common Shariah credit financing arrangement was *Bay Inah*; however, some co-operatives explored into *Tawarruq* for some reasons, which was a discomfort to *Bay Inah*'s legality issues or being forced to use the *Tawarruq* concept by the primary financier, such as Islamic banks.

*Tawarruq*'s *modus operandi* appeared to be similar to *Bay Inah*'s, except for the involvement of a third party. Therefore, it becomes more complex when involving a third party in the arrangement, and it is crucial to ensure that all the sales and purchases are promptly done. In the case of secondary co-operatives, the *Tawarruq* arrangement becomes more complicated. Secondary co-operatives may act as principals between themselves and their members or as agents to conduct *Tawarruq* transactions on their behalf.

Thus, this study discussed and illustrated the fundamental and implementation aspects of *Tawarruq* by reviewing its adoption in secondary credit co-operatives in Malaysia, referred to as KOOP A.

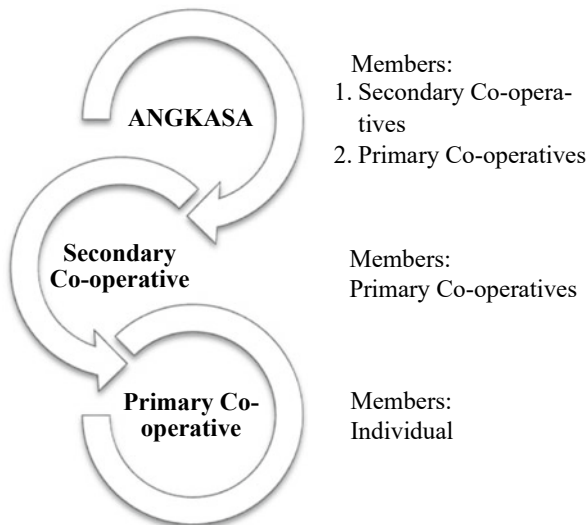


Fig. 1 Types of co-operatives in Malaysia

## 2.2 *Tawarruq Contract*

In March 2007, Bank Negara Malaysia (BNM) introduced the Tawarruq contract. Additionally, it is also referred to as a Commodity Murabahah contract. It is a financial instrument that emerged in the Islamic financial market to assist Islamic Financial Institutions (IFIs) in managing their liquidity (Ali and Hassan 2020). It is also viewed as a contract that provides a competitive advantage in gaining more customer acceptance (Amin et al. 2018) due to their mechanism as the best alternative to the liquidity shortage faced by IFIs' worldwide (Ahmad et al. 2017).

Originally, Bay Inah was widely practiced as an underlying contract for personal financing in IFIs. However, this contract stipulated and raised many controversies among Islamic scholars (Asni and Sulong 2018). Therefore, Tawarruq emerged as the best alternative to the IFIs. Tawarruq consists of two sale and purchase contracts (BNM 2018). The first involves the sale of an asset by a seller to a purchaser on a deferred basis. Subsequently, the purchaser of the first sale will sell the same asset to a third party on a cash and spot basis (BNM 2018). While Tawarruq contracts raise several Shariah concerns. They are viewed as a less usurious and far superior solution than diverting customers to riba-based products. As a result, Tawarruq has become the second-largest financing portfolio in the Islamic banking sector (Ali and Hassan 2020). It is widely used in instruments and facilities such as deposits, financing, liquidity management, and debt restructuring, as well as in the funding of government and corporate Sukuk, risk management, and hedging (Ali and Hassan 2016).

Due to the commodity's inclusion as a subject matter in this contract, the commodity must adhere to a specific criterion; thus, the Shariah principle must be fully observed. Generally, IFIs will use the Murabahah Commodity Exchange Market, such as Bursa Suq al-Sila, or other commodity providers, such as Sedania, as trading platforms. These trading platforms are critical as Shariah-compliant electronic commodity trading platforms. For instance, in Bursa Suq al-Sila, all commodity sales and purchases are recorded and issued to the customers in the form of an E-certificate (E-cert). This E-cert serves as a substantial proof of ownership of the commodity (Dusuki 2010).

The permissibility of Tawarruq also can be understood through the word of Allah SWT, which means:

*"... Allah SWT has justified the sale and forbidden usury (riba)."*  
(al-Baqarah, 2:275)

According to the general meaning of the preceding verse, Tawarruq is justified because it is a component of buying and selling activities. It may be conducted with the intent of obtaining cash, with or without the knowledge of all related parties. Additionally, it may be undertaken in response to pressing needs or standard practices by particular political parties or institutions (Bank Negara Malaysia and B. N. Malaysia 2010).

### 3 Findings

This section discusses the findings regarding Tawarruq's practices in Malaysia's credit co-operatives and their issues. The results were entirely based on interviews with the Shariah Manager and Credit Financing Manager. Due to the concept of anonymity and confidentiality, the credit co-operatives selected were not identified by their full names. As a result, the discussion referred to KOOP A as the chosen credit co-operative.

The study found that in credit co-operatives, there are two modes of Tawarruq process or transaction. The first category is credit co-operatives acting as principals, while the second category is credit co-operatives acting as agents. The transaction structure is discussed in detail below.

#### 3.1 *Tawarruq Contract Application in KOOP A*

Tawarruq contract has been fully applied to KOOP A credit financing product since its inception in 2011. It was a big step as it was the first co-operative to adopt Tawarruq for their whole credit facilities. It is an effort to become a role model to other co-operatives to free themselves from their dependence on the Bay Inah contract. Tawarruq refers to the Muamalat arrangement involving two levels of the transaction. Buying and selling of commodity-based on suspended payment called Murabahah (where the price of the commodity cost is added to profit (margin) from a seller to buyer). Then, the commodity will be sold by cash to a third party (but not the original seller) to get the money (Tahir et al. 2018).

However, in the case of KOOP A as a secondary co-operative, it becomes more complex and unique. It involves an additional level when the KOOP A appointed an agent to exercise the Tawarruq transaction in Bursa Suq al-Sila on behalf of their members. This complexity is illustrated in the sub-section below:

##### (a) **KOOP A as a Principal**

1. Members of KOOP A seeks a credit facility with KOOP A;
2. KOOP A will purchase commodities from commodity suppliers (Broker 1) by cash in the commodity market at Bursa Suq al-Sila;
3. KOOP A sells the commodity to the members on credit at cost plus a profit margin.
4. Member appoints KOOP A as a representative to resell the commodity to the commodity suppliers (Broker 2, 3 or 4, etc.), as long as not the Broker 1 in Bursa Suq al-Sila, hence in return gets cash;
5. Cash sales from commodity suppliers (2), (3), or (4) will be given to the members. Hence, it will enable the members to get the intended cash amount of financing;

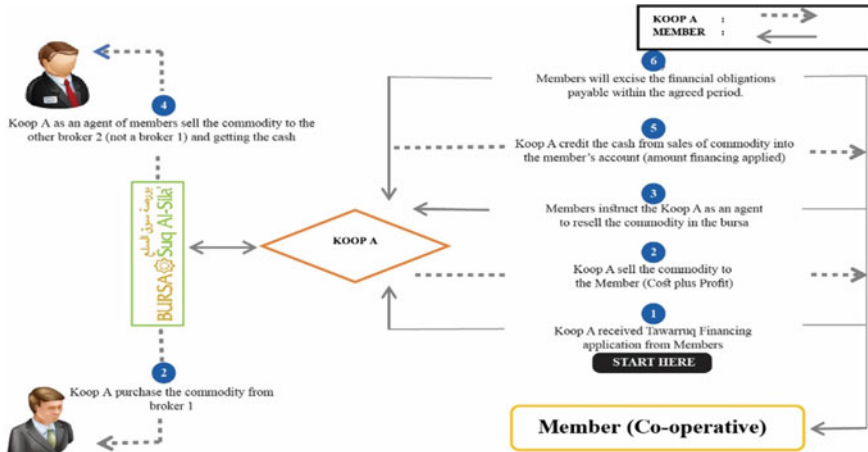


Fig. 2 Modus Operandi KOOP A as Principal (KOOP A ← → Member)

6. Meanwhile, the residual sales from KOOP A to members will create financial obligations payable within the agreed period (Fig. 2).

**(b) KOOP A as an Agent**

1. Members of a co-operative (individual) apply for credit financing with a co-operative (a member of KOOP A), now known as KOOP B:
2. Fill up the application form and submit as required by KOOP B accordingly;
3. Fill up the three forms needed by KOOP A;
  - a) Agreement of Commodity Purchases and Appointment as an agent of purchases
  - b) Agreement of Commodity Sales and Appointment as an agent of sales
  - c) Option Consent Letter to resell the commodity or to own the commodity
4. KOOP B pools the application into a batch (known as financing batch) until the financing request reaches a certain amount. Only then, KOOP B will request and submit the form to KOOP A to exercise the Tawarruq transaction.
5. KOOP A will exercise purchase of the commodity from Broker 1 on behalf of KOOP B in Bursa Suq al-Sila.
6. KOOP A, as an agent of commodity purchases, sells the commodity to the Financing Batch on behalf of KOOP B.
7. The Financing Batch appoints the KOOP A to resell the commodity to Broker 2, 3, or 4 in Bursa Suq al-Sila to get cash in return.
8. KOOP A will notify KOOP B the commodity transaction has completed; therefore, KOOP B could disburse the financing amount to the member.



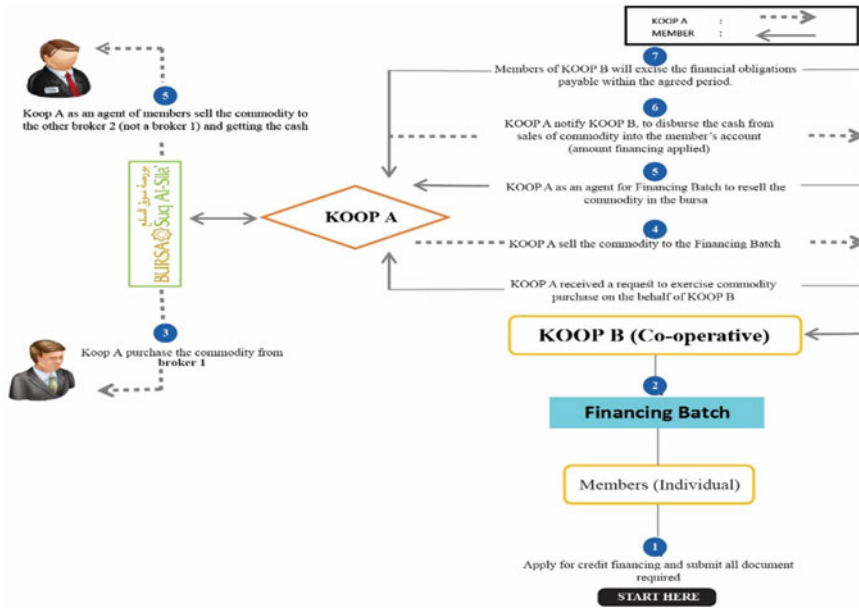


Fig. 3 Modus Operandi KOOP A as Agent (KOOP A ↔ Co-operative ↔ Individual Member)

### 4 Discussion

Since its inception, KOOP A has used a Tawarruq contract as its primary underlying financing contract. KOOP A has subscribed to Bursa Suq al-Sila' (BSAS) as a trading platform to engage with the commodities' supplier to execute the commodities' buy-sell transaction. BSAS provides a comprehensive electronic web-based shariah commodity trading platform that enables commodity-based investment and financing transactions based on the Tawarruq, Murabahah, and Musawamah principles.

There are two Tawarruq arrangements in credit co-operatives; one as a principal and the other as an agent. The arrangement of a principal is similar to the arrangement of Tawarruq practised between the IFIs with their customers. However, when it comes to the arrangement of credit co-operatives as an agent, it is becoming more complex and unique due to KOOP A's status as a secondary co-operative. This added another layer of complexity when the KOOP A is appointed as an agent to execute the Tawarruq transaction in Bursa Suq al-Sila on behalf of its members. This uniqueness may lead to various issues.

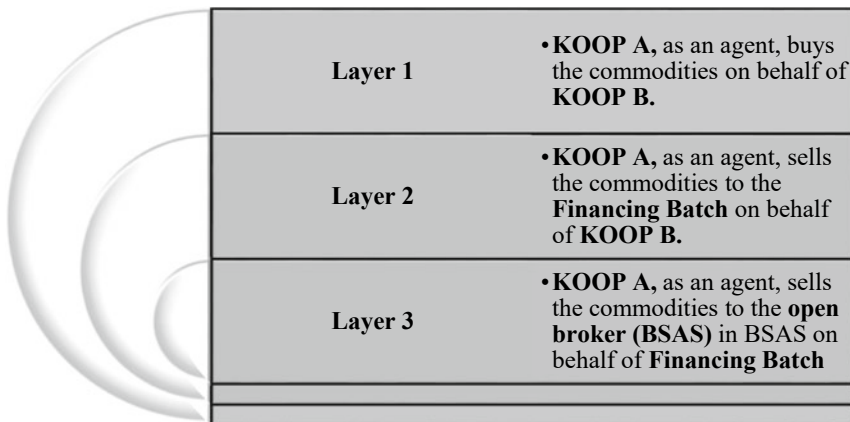
### 4.1 Issues Related to the Agency (Wakalah)

The Wakalah contract is critical to Tawarruq’s implementation. Wakalah is an agreement in which individuals appoint another to act on their behalf. In other words, Wakalah refers to the act of authorising others to take care of specific tasks assigned to them. Wakalah contracts can be used in two situations when it comes to Tawarruq. To begin with, first, KOOP B, as a member of KOOP A, appoints KOOP A to purchase the commodities. Second, KOOP B appoints KOOP A to sell the commodities to a third party in order to obtain cash. This is KOOP A’s Wakalah arrangement as the principal.

However, when KOOP A’s Wakalah arrangements as an Agent, a new level of Wakalah exists. First, KOOP A acts as an agent for KOOP B, purchasing commodities on its behalf. Second, on behalf of KOOP B, KOOP A sells the commodities to the Financing Batch (members of KOOP B). Third, on behalf of Financing Batch, KOOP A sells the commodities to an open broker in BSAS. As a result, three layers form the Wakalah in this arrangement (see Fig. 4).

The primary concern in this structure is that KOOP B must exercise extra caution to ensure that all Commodity Murabahah transactions in BSAS executed by KOOP A are completed before customer disbursement. This is to ensure that all ownership and commodity transfers are completed accurately and in the proper order. Thus, communication between KOOP A and KOOP B is critical to ensure that everything is completed on time.

Second, the appointment’s clarity, offer, and acceptance must be precise and clear to ensure the appointment is as intended and the agent’s exercise is consistent with the mandate. Otherwise, everything becomes susceptible to deception.



**Fig. 4** Wakalah layers of KOOP A as an agent

## ***4.2 Issues Related to the Validity of Commodity Ownership***

KOOP A prefers crude palm oil (CPO) as a preferred commodity because it has a precise specification and trades in actual values. As a result, CPO is the most frequently used in BSAS. CPOs qualify as goods in Commodity Murabahah transactions due to;

- i. society recognises them as valuable and beneficial
- ii. their values can be quantified and determined
- iii. they exist and can be identified physically and possessed.

Most importantly, BSAS provides the customer with the option of possessing and receiving the commodity or immediately selling it back to a third party (Abdul Ghafar et al. 2016).

Concerning the goods' price, it is mandatory to know the currency and payment terms of the sale price, which shall be determined at the time of the contract. All pertinent information must be stated and known in precise and definite terms, including cost and profit (Murabahah). The agreement between the seller and buyer must be clear, accurate, and unambiguous, and the offer and acceptance must occur concurrently. To meet this requirement, BSAS will issue an E-certificate (E-cert) for each transaction that includes information about the buyer, seller, time and date, value date, product code and description, unit measurement, volume, currency, price, value, transaction type, Murabahah value, commodity supplier, commodity volume, and commodity location.

However, when revisiting Fig. 3 of KOOP A as an agent, a significant concern arises if one of the members of the financing batch prefers to possess and receive the commodity at Step (4) or sell the commodity independently at Step (5). Therefore, if these circumstances happen, how the BSAS treats this situation and how it will be depicted in the E-cert will be an issue. Hence, to avoid these situations from happening, KOOP A has made it mandatory for each member of the financing batch to sign the Wa'ad or promise agreement agreed not to possess the commodity. Hence, this Wa'ad creates the excessive ties and stringent requirements which indicate the absence of the right to choose; thus, this issue will be contested from a shariah perspective.

## ***4.3 Issues Related to the Brokerage Fees***

Regarding the Wakalah fee, majority of jurists and scholars agreed that the agent may charge it as long as it is not excessive (Ahmad et al. 2017). In the case of KOOP A, if it is a principal, there is no agent fee. Meanwhile, if KOOP A acts as an agent, the following fee structure applies (Table 2):

Considering that the nature of co-operatives is a small and medium entity; thus, their credit financing is also small-scale. Consequently, to avoid frequent repetitive

**Table 2** Fee structure of financing tranches

Financing tranches	Fee (RM)
RM 25,000 and below	RM 1
RM 25,001 and RM 49,999	RM 2
RM 50,000 and RM 75,000	RM 3
RM 75,001 and RM 100,000	RM 4
RM 100,000 and above	RM 5

small-scale transactions, KOOP A advises their member who wants to appoint KOOP A as an agent to pool up the financing applicant into a financing batch. Initially, this practice was perceived as a win–win situation for both KOOP A and KOOP B, which are low fee structures and not repeating an excessive number of small-scale transactions. However, this practice led to another issue. The members of financing might wait a long time for enough financing applications. This gap of time will make members feel uncomfortable as they are in need of cash. Therefore, it is suggested that KOOP B becomes a principal instead of appointing KOOP A as an agent to transact Commodity Murabahah.

## 5 Conclusion

This study identified two distinct Tawarruq arrangements in credit co-operatives—the first being a co-operative credit acting as a principal. Second, credit cooperative in the capacity of an agent. In comparison to this arrangement, the second appears to be more complex and unique. As a result, extra attention and care are required when carrying out this arrangement. This is an exploratory study to begin understanding Tawarruq in the co-operative sector; however, it is limited to the one-credit co-operative that trades on Bursa Suq al-Sila. This study suggests that future research should compare the practices of credit co-operatives to those of numerous trading platforms using multiple case studies.

## References

- Kementerian Pembangunan Usahawan dan Koperasi: Pelan Transformasi Koperasi Malaysia 2021–2025 (2021)
- Hassan, R., Samad, R.R., Shafii, Z.: Shari’ah governance practices in credit cooperatives in Malaysia. *Al-Shajarah* (2018)
- Hashim, Z.A.: *Koperasi Di Malaysia: Asas dan Pergerakan*, Cetakan Pe. PEretakan Dewan Bahasa dan Pustaka (1997)
- Anuar, M.N.: *Koperasi Islam: Dasar, Proses, Langkah dan Hasil*. First Edit. GG Edar, Kuala Lumpur (1990)

- Ali, M.M., Hassan, R.: Survey on Sharī'ah non-compliant events in Islamic banks in the practice of tawarruq financing in Malaysia. *ISRA Int. J. Islam. Financ.* **12**(2), 151–169 (2020). <https://doi.org/10.1108/IJIF-07-2018-0075>
- Amin, H., Hamid, M.R.A., Rizal, M., Hamid, A., Hamid, M.R.A.: Patronage factors of Tawarruq home financing in Malaysia. *Int. J. Bus. Soc.* **19**(3), 660–677 (2018)
- Ahmad, E.F., Shihama, M., Mohamad Tarmizi, N.A., Saidu Mudi, S.M., Djama, S.I., Muneeza, A.: Tawarruq as a product for financing within the Islamic banking system: a case study of Malaysian Islamic banking system. *Int. J. Manag. Appl. Res.* **4**(1), 31–43 (2017). <https://doi.org/10.18646/2056.41.17-004>
- Asni, F., Sulong, J.: Non-ethical elements in Tawarruq Munazzam product for Islamic housing financing in Malaysia. *Int. J. Acad. Res. Bus. Soc. Sci.* **8**(12), 1013–1019 (2018). <https://doi.org/10.6007/IJARBSS/v8-i12/5149>
- BNM: BNM Tawarruq Guideline - BNM/RH/PD 028-8. no. December, pp. 1–32 (2018)
- Ali, M.M., Hassan, R.: Determinants of shariah non-compliant events in Islamic banks in Malaysia: With special reference to tawarruq-based financing. *Al-Shajarah* **21**(Specialissue), 217–242 (2016)
- Dusuki, A.W.: Bursa Malaysia's Suq Al-Sila' (Commodity Murabahah House) as an Alternative Platform for Tawarruq Transaction. *J. Muamalat Islamic Financ. Res.* **7**(1), 147–167 (2010)
- Bank Negara Malaysia and B. N. Malaysia: Shariah Resolution in Islamic Finance Second Edition (2010). [https://www.bnm.gov.my/files/press\\_release/2010/shariah\\_resolutions\\_2nd\\_edition.pdf](https://www.bnm.gov.my/files/press_release/2010/shariah_resolutions_2nd_edition.pdf). Accessed 08 Feb 2020
- Tahir, R.M., Yusuf, S.M., Rahman, S.A.: Commodity Murabahah contract in microcredit financing. *Int. J. Acad. Res. Bus. Soc. Sci.* **8**(5), 1022–1028 (2018). <https://doi.org/10.6007/ijarbss/v8-i5/4479>
- Abdul Ghafar, I., Nik Abdul Rahim, N.A.G., Mat Nor, M.Z., Ismail, A.G., Nik Abdul Ghani, N.A.R., Mat Zain, M.N.: Tawarruq time deposit with wakalah principle: an option that triggers new issues. *Int. J. Islam. Middle East. Financ. Manag.* **9**(3), 388–396 (2016). <https://doi.org/10.1108/IMEFM-05-2014-0048>

# **Corporate Governance, IT Governance, Financial Markets and Performance**

# The Impact of Robotic Process Automation (RPA) Technology in Banking Sector in Bahrain



Abdulrahman Rashed, Mohammed Alchuban, Allam Hamdan,  
and Bahaeddin Alareeni

**Abstract** Organizations has lots of repeated activities that are done manually by employees, these activities are done periodically (daily, weekly, monthly, etc...) which consume lots of time to be completed. These activities are done manually so it can result of non-accurate output because of the mistakes done manually by the employees because it is the nature of human and doing these activities regularly can decrease the motivation of the employees which lead to more mistakes. In the latest years, Robotic Process Automation (RPA) technology was introduced to overcome these issues. RPA was used in the Banking sector in Bahrain with a strong recommendation to use it especially in the Operation activities of the banks. RPA is used to automate the repeated tasks and studies on these technologies found it RPA systems will lead to reduce the cost of these activities, minimize the time take to finish these activities, reduce mistakes done by individuals and enhance the productivity of the organisation. All these advantages can be applied to the Banks and these operation's activities.

**Keywords** Robotic Process Automation (RPA) · Banking sector · Bahrain

## 1 Introduction

In the latest year, there is a huge demand for increasing the speed and accuracy of performing tasks and functions within the organizations and cutting costs of their operations. Robotic Process Automation (RPA) systems was introduced as a solution for these demands (IBM 2020), since then it has been used to automate these repetitive tasks and functions without human interaction. These systems are developed and used to perform the interaction of employees with various systems (UiPath 2020).

---

A. Rashed · M. Alchuban  
College of Business and Finance, Manama, Bahrain

A. Hamdan (✉)  
Ahlia University, Manama, Bahrain

B. Alareeni  
Majan University College, Muscat, Oman

The Banking sector in Bahrain like other banking sectors in the Gulf region, has lots of repeated tasks that are done manually, these tasks can take long time, have many human errors and increase cost for the banks (Mohammed and Goel 2020). RPA systems can reduce or even eliminate some of these disadvantages, also they can be scheduled at any time because they do not require the presence of a human for these task to be performed. In addition, with the current situation with Covid-19 it is better to reduce human interaction in tasks done by group of people. That can be tackled by assigning some or all of these tasks to and RPA system. This paper is going to show how RPA technology can impact Banking Sector in Bahrain. Also, it will state how the banks are going to benefit if they have switched to using RPA systems, and how their operations will be enhanced when implementing such systems. Furthermore, it will state examples of banks that are using RPA technologies and what is their state before and after applying these systems. This paper will start with the Theory and Literature review of the foundation of using this technology. After that it will discuss data analysis and test hypotheses of using RPA systems. Then it will state the methods to be used for implementing RPA systems and finally it the research will conclude with a summary of the whole paper.

## **2 Review of Literature and Related Work**

### ***2.1 Robotic Process Automation***

RPA is using a piece of software to mimic the repetitive procedures performed by a person to achieve the goal of reducing time taken for these procedures, making them more efficient and saving costs (Aguirre 2017). For Example: RPA systems can be used to perform calculation of an organization performance, then save these calculations into different documents, after that it can upload these files to an email, format the email text and send it to several recipient at the same time. All these steps are done by the system it-self without any interaction from a human.

For taking the advantages of using RPA systems, Ithmaar bank has conducted a study to analyse the benefits of implementing RPA application with the focus on the tasks performed by the Banking Operations sections.

## **3 Methods of Research and Review of Literature**

During this study, meetings were held with key persons from the Banking operations sections, the aim of these meetings is to point out the most important procedures which are repeated a lot, consume too much time and can be automated. In addition, the operation procedures that need to reduce the time because of government regulation requirements has been considered. Many procedures have been considered



**Table 1** Banking activities resources and required time

Activity	Resources involved	Activity duration (h)
Blocking/Unblocking of accounts	2	4
Freezing/Unfreezing of accounts	2	2
Court orders payment	3	2.5

but by the end three activities has been identified as the most important. Blocking and Unblocking of Accounts, Court Orders Payment and Freezing and Unfreezing of Accounts were pointed as the main activities to focus on during this study. The following table shows the three activities, the number of resources that each activity uses and the time taken to finish each activity (Table 1).

Interviews were conducted for this study to examine and analyse their experience with implementing RPA systems in their operations. An interview was held with Mr. Yousif Ebrahim Chief Financial Officer (CFO) at Al Salam Bank to explain their usage of RPA in Financial Control section at the bank. The bank used the technologies to automate the generation of Asset Liability Management (ALM) and Prudential Information Returns for Islamic Banks (PIRI) reports. He stated that their aim of using RPA was to decrease the resources used in an activity and redirect the resources to be used in other activities to enhance the performance of their operations. After they have implemented RPA while generating PIRI reports the time taken for the generation has been reduced to three days, which can be reduced more but these kind uses the output from other reports which consume lots of time to produce the output needed. On the other hand, for the ALM reports they have implemented RPA technology to automate the creation of the these reports, but they did not implement it for increasing the speed of the generation of the reports because they need to create or purchase a new system and there is no requirement for that at this time. Mr. Yousif stated that they are in the process of analysing many reports and systems to know how RPA systems can be used in them to enhance and speed the process of the bank. He also mentioned that many of these RPA systems are easy to implement because they are using drag and drop technologies.

Another interview was conducted with Mr. Rajeev Rajan who was responsible of implementing RPA systems for Blocking and Unblocking processes requested by Central Bank of Bahrain (CBB) in National Bank of Bahrain (NBB). He stated that the time taken for this process has decreased a lot because the whole process has been automated starting from the retrieval of the documents from CBB to doing the necessary calculations and required actions in the core systems of the bank and finally reply back to CBB. He also stated that it also enhanced the performance and the accuracy of these process and redirect the resources saved to be used in other operations.

## 4 Results

The information gathered and obtained in this study have been analysed, processed and compared to the current activities to evaluate the results. The evaluation is done by identifying the resources currently used by the activity, the time each activity consumes and accuracy of the outcome of these activities and compare them to expected results of this study taking in consideration the experience of Al Salam and NBB banks. As result of that we have found that Ithmaar bank can reduce at least one or two resources per activity and reduce half of the time taken after switching to RPA solutions. Furthermore, the human interactions with these systems are decreased so the requirement of bank and the CBB regulations can be met easily.

### 4.1 Analysis

The extent of these analysis is to use the data gathered and identify the most critical activities which consume huge amount of time, analyse the areas which they can be enhanced and apply RPA technologies into them to automate the procedures and reduce the time taken.

There key activities have been chosen by the bank, and they are as follows:

- Blocking and Unblocking of Accounts based on CBB requests
- Freezing and Unfreezing of Accounts based on CBB requests
- Court Orders Payments.

The first two Activities are requests received from CBB where the bank gets from 200 to 300 names which should be searched for in the system and block/unblock or freeze/unfreeze their accounts, they use two resources from the bank and it takes them from two to four hours to finish these activities. Also, for the third activity the bank receives court order which needs to be paid, it is normally takes about two and a half hours and consume three resources of the bank.

As shown below quantitative and qualitative analysis techniques has been to analyse the result of this research:

### 4.2 Quantitative Analysis

- **Enhanced time and resources usage:** based on the information gathered from Ithmaar bank, RPA will impact the bank positively based on the time consumed. The bank used to take about eight and a half hours daily to finish these activities. According to the analysis it will take only four hours which mean the time will be reduced by four and a half hours. Also, the resources used previously were seven resources and from the analysis done all the resources can be released after using

RPA solutions. The analysis was done only on the activities mentioned above but the bank has similar activities and tasks which have similar procedures can be evaluated easily and enhanced effortlessly using RPA solutions.

- **Processes enhancement:** reducing the time required to finish these activities will help the bank to meet the regulations and avoid any penalties the bank receives due to late submission of the outcome of these activities. In addition, the time employees spend on these tasks can be redirected to be used in other activities.
- **Project Timeline and cost:** after conducting these analysis, various RPA software has been selected and RPA services providers has been considered. It has been expected that the whole process of the implementing the selected RPA software will take from 100 to 120 days because it has some complicated workflows which need to be applied carefully. The installation of these software, the cost equipment and hardware and the license required are projected to be about 100 thousand US Dollars. The cost saved can be calculated by comparing the salaries of the seven employees who are performing these procedures manually to the cost of the implementation and the yearly cost of the new RPA system. The seven employees receive an average salary of 50 thousand US Dollars with total of about 300 thousand US Dollars a year without calculating the annual increasement of their salaries. The first year the bank is estimated to save about 66% of the cost after implementing these RPA systems and it will increase to about 85% the following four years. The diagram below compares between the cost of the manual process to the cost of using an RPA system for the next five years (Fig. 1):

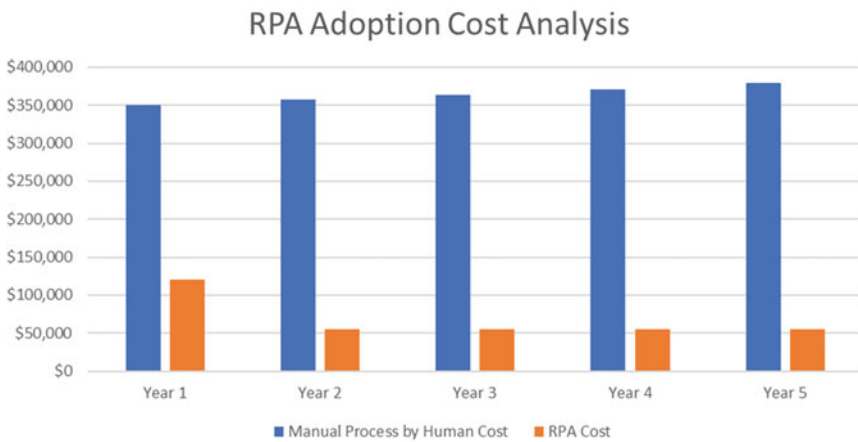


Fig. 1 RPA adoption cost analysis

### 4.3 Qualitative Analysis

- **Human Dependencies:** Some of the works is done only by specific resources in the company which is causing a dependency that if the resource is busy or on leave the work will not be done efficiently. RPA as a solution mitigate this dependency as the program can handle the work and system backup as well can be made available to ensure the work can be done anytime. (Madakam et al. 2019).
- **Human Errors:** repetitive work is done in lengthy routine tasks which are prone to human errors and mistakes as employees might do some mistakes while entering the data or moving it from a file to another without noticing the mistake (Madakam et al. 2019). Using RPA eliminate human errors in the process and ensure higher accuracy while doing the work. This is a critical aspect that need to be considered as it might impact the customers and cause the bank financial penalties due to incompliance.
- **Process Reengineering:** introducing RPA to automate a process, will require to analyse the process that need to be automated and re-engineer it accordingly (Moayed 2018). For example, the current process needs at least two people to work on it as a maker and checker to ensure that the work is done properly. However, by using RPA it will not be required to have the concept of making and checking as the process is automated.
- **Artificial Intelligence (AI) recommendations:** RPA works with AI solutions to analyse the areas that RPA can help more to automate. Also, it analyses the results and provide the necessary corrective actions that can be taken to enhance the process efficiency (Taulli 2020).

## 5 Implementation and Evaluation

In order to be able to evaluate the feasibility and the impact of RPA implementation, we have approached some of the leaders in the technology market and to include the top 3 RPA technology providers which are Automation Anywhere, UiPath and BluePrism (Gartner 2021) as well as some of the market known consultancy which has the experience in implementing such solutions. We have retrieved the information from them, and we have analysed as below:

## 6 Cost Benefit Analysis (CBA)

RPA cost follows the concept of cost per bot which means each single bot can be purchased separately and the cost will be calculated based on the number of bots purchased. There are three major cost elements which are:

- **Technology Cost:** based on the technology market leaders mentioned above, we have analysed the cost of all of them and the higher ratings were in benefit of UiPath as the most suitable to technology framework for the Bank. The annual cost of UiPath is USD 30,000 for each single bot.
- **Implementation Cost:** to be able to implement the technology there will be an implementation cost for the required processes. The implementation will take around four months to complete the system with a cost of USD 30,000.
- **Infrastructure Cost:** in addition to the above-mentioned costs there will be infrastructure cost required including test, production and disaster recovery (DR) environments with a total cost of USD 40,000.

The total cost of the project is USD 100,000 as part of the project implementation and annual cost of USD 30,000 USD for system maintenance.

At the same time, below are the financial benefits which will have positive impact if RPA implemented in the Bank:

- **Cost of resources:** the cost of the employees will be saved for seven resources which can be assigned to on other departments or to do other tasks. The total annual cost for the current seven employees is USD 300,000.
- **Increasing the Profitability:** the yearly profit can be increased by 5% by dedicating the employees to work on other activities and evaluate the bank's current processes and products. In reference to the last year financial statement of the Bank, the profit of the Bank is USD 2,000,000 that will increase by USD 100,000.

In summary, the financial savings and increased benefits are USD 300,000 annually while the cost of RPA is USD 100,000. The Bank will gain total profit of USD 200,000 USD by implementing the RPA solution.

## 6.1 Key Performance Indicators (KPI)

Another aspect of the evaluation is measuring the KPIs to evaluate the RPA performance outcome. Below is the evaluated list of KPIs:

- **Accepted activities completion time:** processes that has been automated by RPA will complete on the same day without carrying the tasks for other days.
- **Accepted Error ratio:** the system should be working fine following Sigma 6 system availability with an accuracy of 99.99% (Kusnetzky 2015).
- **Accepted Manual Process:** as a backup process, users can follow the manual process, but it should not exceed 2% of the work done in the year which means maximum 5 days in a year and the other days the activity should be done by RPA.

## **7 Conclusion and Recommendation**

### ***7.1 Summary of Research***

RPA technology is growing in all sectors and especially the banking sector. The main advantages of RPA are the added values in terms of speed, saving costs, increasing productivity and reducing errors. Operational activities done in banks to address regulatory requirements are one of the major time-consuming activities. The nature of these activities is repetitive and lengthy. This paper used online RPA articles, case studies to gather the required details. The research has listed the activities that need to be improved which are CBB BUB, Payment to Court Orders and Accounts Freezing/Unfreezing process.

### ***7.2 Results of Analysis***

The research included a mixture of quantitative and qualitative analysis to find the probable outcomes as part of the study. Based on the presented details, cost benefit examination showed that the financial profit will be annually of USD 200,000 which will be the Bank benefit after implementing the RPA solution. Moreover, KPI has been set to quantify the performance of RPA implementation and ensure that the solution is meeting the objectives set.

## **8 Limitations of Research**

The study had dependent on the implementation of Al Salam bank which might not always be suitable for the process that is being automated in Ithmaar Bank. Also, the research was focusing on automating processes that are specific to Bahrain and it is based on the central bank of Bahrain (CBB) regulations so it might be irrelevant to refer to international use cases and comparing the implementation with other countries.

## **9 Recommendation**

We recommended to proceed with implementing RPA in Ithmaar Bank to automate regulatory operational activities and this will reduce the activities time to 3.5 h instead of 7 h and it will free up the employees for other activities. The implementation timeline is 4 months with cost of USD 100,000. The bank savings by implanting the project is USD 300,000 which results in USD 200,000 annual profit.

## References

- Aguirre, S.: Automation of a Business Process Using Robotic Process Automation (RPA): A Case Study (2017). [https://www.researchgate.net/publication/319343356\\_Automation\\_of\\_a\\_Business\\_Process\\_Using\\_Robotic\\_Process\\_Automation\\_RPA\\_A\\_Case\\_Study](https://www.researchgate.net/publication/319343356_Automation_of_a_Business_Process_Using_Robotic_Process_Automation_RPA_A_Case_Study). Accessed 18 October 2019
- Dynatos. Robotic Process Automation (RPA), October 2020. <https://www.dynatos.com/robotic-process-automation>
- Gartner: Robotic Process Automation Software Reviews and Ratings (2021). <https://www.gartner.com/reviews/market/robotic-process-automation-software>
- IBM: Robotic Process Automation - Overview (2020). <https://www.ibm.com/products/robotic-process-automation>
- Kusnetzky, D.: How many nines of uptime do you need? 01 June 2015. <https://virtualizationreview.com/articles/2015/06/01/how-many-nines-of-uptime-do-you-need.aspx>
- Madakam, S., Holmukhe, R., Jaiswal, D.K.: The future digital work force: robotic process automation (RPA), 19 November 2019. <https://www.redalyc.org/jatsRepo/2032/203261541001/html/index.html>
- Moayed, V.: RPA: re-engineer first, really? 16 August 2018. <https://www.uipath.com/blog/rpa-re-engineer-first-really>
- Mohammed, I., Goel, N.: The development of robotic process automation (RPA) for the efficiency of backoffice operations at bank muscat (2020)
- Taulli, T.: How AI is supercharging RPA (Robotic Process Automation), 21 February 2020. <https://www.forbes.com/sites/tomtaulli/2020/02/21/how-ai-is-supercharging-rpa-robotic-process-automation/?sh=310bf95a7769>
- UiPath: What is robotic process automation (2020). [www.uipath.com](http://www.uipath.com), <https://www.uipath.com/rpa/robotic-process-automation>

# The Role of Governance in Analysing Waqf Performance



Nur Azni Mohd Zeni, Mohd Rizuan Abdul Kadir,  
and Noraina Mazuin Sapuan

**Abstract** Over the years, waqf institutions have played an essential role in addressing a wide range of socio-economic development for the *ummah* (society) all over the world. The growth of waqf with time has led to increasing expectations surrounding the role of waqf institutions. Nevertheless, there has been an inefficiency issue regarding waqf institutions in Malaysia. The literature emphasises that inefficiency is usually associated with internal factors such as governance and management. Hence, the present study examines whether governance moderates the relationship between human capital in Waqf institution and waqf regulations (both as a proxy of waqf management attribute) with waqf institutions' performance in Malaysia. The current research employed a quantitative research methodology by analysing a selected sample of 99 respondents in waqf institutions. The developed model was tested using the Structural Equation Model (SEM) technique through the Partial Least Square (PLS) approach. The results revealed a positive relationship between waqf management attribute and waqf performance, which becomes stronger with high governance. Moreover, it should be noted that the use of governance as a moderator between waqf management attribute and waqf performance is very limited in past research. Therefore, the present study's result is expected to enhance the understanding of existing conceptual literature on the importance of governance in influencing the relationship between waqf management attributes and waqf institutions' performance in Malaysia.

**Keywords** Human capital · Waqf regulations · Waqf governance · Waqf performance · Malaysia

---

N. A. Mohd Zeni · M. R. Abdul Kadir (✉)  
Universiti Tenaga Nasional, Campus Putrajaya, Kajang, Malaysia  
e-mail: [MRizuan@uniten.edu.my](mailto:MRizuan@uniten.edu.my)

N. M. Sapuan  
Universiti Malaysia Pahang, Pekan, Malaysia



## 1 Introduction

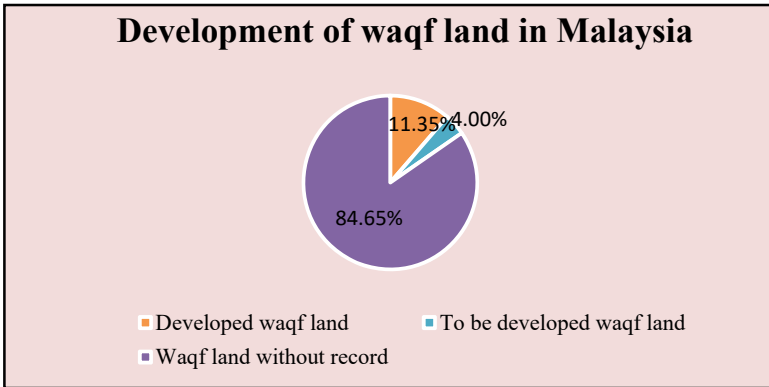
Waqf is derived from the Arabic word, which means hold, confine, prevent, or restrain. In the terminology of Islamic jurisprudence, it is defined as an act of refraining from the use and disposal of any asset to attract its benefit for charitable purposes as long as it lasts (Tagoranao and Gamon 2016). On the other hand, from the Shariah perspective, waqf is defined as a dedication of property whereby its usufruct (benefit) is used for religious purposes and charitable donations (Nooraini 2015). Meanwhile, most Muslim countries tend to view waqf as a pious endowment that is firmly connected to the religious percept of charity.

Cizacka (2000) further highlighted that the evolution of waqf has gone through considerable growth, stagnation, and even downturns in most Muslim countries. On a similar note, waqf in Malaysia has grown with time, accompanied by the increasing expectations surrounding its management. Sani et al. (2017) stated that waqf today not only contributes to human civilisation, but has extended its benefits to other social purposes such as reducing the poverty rate and supporting the country's education system and transmitting culture within the Muslim societies. Accordingly, waqf in today's world is viewed as one of the potential instruments that can stimulate the economic and social development of the people (Arshad et al. 2018) and achieve Sustainable Development Goal 2030 (Mohd Zeni and Sapuan 2017a).

Nevertheless, Ismail et al. (2015) argued that the waqf institutions have not fully utilised the great potential of waqf despite the contribution that can be obtained from waqf in fulfilling the needs of Muslim society around the world. The growth in scholarly attention on the performance of waqf institutions is clearly reflected in a considerable amount of studies. In addition, it should be noted that many researchers have been studying, reviewing, and surveying the performance of waqf institutions over the past few years. The general findings of the studies found that substantial improvements are deemed necessary (Arshad and Zain 2017).

Currently, the institutions of waqf in Malaysia have not been considered the bodies that can solve the economic problems of an ummah (society). For example, numerous waqf lands that are not developed by the waqf institutions despite being located in very strategic areas. According to the statistics for the year 2016 issued by the Malaysia Wakaf Foundation, a total of 30,889 hectares of waqf land worth RM 312,463,440 are in existence, but only 11% was developed. Figure 1 presents the development of waqf land in Malaysia:

In 2015, the Malaysia National Audit Department had audited the management of waqf by the State of Islamic Religious Councils (SIRCs) and discovered that waqf institutions' overall performance was unsatisfactory. Accordingly, most of the waqf properties failed to properly manage the institutions (Auditor-General's Report, 2014). Thus, the Auditor-General further proposed that the SIRCs should improve the management of waqf properties to ensure that the ummah would be able to earn the socioeconomic benefit derived from all of the properties. Apart from that, the SIRCs are also advised to continuously improve the effectiveness of waqf management to fulfill the responsibilities entrusted to them.



**Fig. 1** Percentage in the development of waqf land in Malaysia (revised up to 31 December 2014)

Presently, attention has been accorded to good governance in the development of comprehensive waqf management attribute of waqf institutions by scholars and Islamic jurists. Ihsan and Ayedh (2015) mentioned that the recognition of the implementation of good governance is seen as a critical success factor that can uplift waqf institutions in Muslim countries. Meanwhile, Anwar (2017) added that the improvement of good governance helps strengthen the waqf institutions, particularly regarding the internal control of waqf management, as well as the performance of waqf institutions. Moreover, good governance is important to further strengthen the management of waqf institutions, while helping to protect the interest of beneficiaries as well as enhance the confidence of the public in the management of waqf institutions (Securities Commission 2014). Therefore, governance plays an important role in the performance of waqf institutions because it is considered as the foundation that precedes other factors.

However, the relationship between the three variables has not been empirically studied despite its importance. A considerable amount of literature revealed that there is limited empirical research on the performance measurement of waqf institutions. The research to date has tended to focus more on financial ratios rather than the non-financial aspect (Sulaiman and Zakari 2015). Therefore, the present study seeks to address this gap by analysing the influence of waqf management determinants on the performance of waqf institutions with waqf governance taking the role of a moderator variable. The current research fills a gap in the literature by contributing to the existing conceptual literature on how the performance of waqf institutions and good governance can be improved in the near future, specifically in Malaysia.

The organisation of this paper is further divided into five sections. Section 1 is the introduction part, followed by Sect. 2 that discusses the literature review. Next, Sect. 3 explains the study’s research methodology, while Sect. 4 reveals the results and follows with the discussion in Sect. 5. Finally, Sect. 6 presents the conclusion of the present study.

## 2 Literature Review

### 2.1 *Waqf Institutions*

Waqf institutions have played a significant role in the betterment of Muslim societies around the world. More importantly, it has helped societies improve various parts of their lives, particularly in economic, social infrastructure, and Islamic culture development. The unique characteristics of waqf are one of the reasons that lead to the continuous expansion of the development and progress of waqf in Muslim countries which keeps receiving more attention day by day. The system of justice, equality, and fair distribution of wealth are expected to assist in the wider development of waqf to inspire both Islamic and non-Islamic rulers towards the waqf system.

Furthermore, it should be understood that the governance of waqf in Malaysia is under the administration of ABW, which plays a role in the development of waqf. The development involves SIRCAs as the sole trustee of the waqf properties in each state, followed by JAWHAR as the Federal Government agency which acts as a coordinator and facilitator in matters related to waqf at the Federal level, and Waqf Foundation Malaysia (YWM) as an agency that collaborates with SIRCAs in executing waqf property development policies based on the decision made by JAWHAR. As the sole trustee, the primary role of SIRCAs is to ensure that the administration of waqf instruments are well-organised and efficiently managed to generate potential profits and revenues, which in turn benefit the beneficiaries. Moreover, the SIRCAs have the right to make agreements, purchase, hold and possess, convert, transfer and develop all the waqf properties in the decision-making process but must adhere to the Islamic principles.

However, the best standard practices of waqf and contemporary management system that project the excellence of Islam is subject to the rules and regulations stated by JAWHAR. JAWHAR was established by the Federal Government under the Prime Minister's department on 27th March 2004 by the former Prime Minister of Malaysia, Tun Abdullah Ahmad Badawi. The main roles of JAWHAR are described as follows: (i) develop all waqf properties in the country by implementing development projects that can benefit the Muslims, (ii) generate more income from waqf properties and increase land revenue by adopting various contemporary and innovative approaches, (iii) mobilise waqf properties and improve the economy of the Muslim community, and (iv) address the issues concerning socio-economic inequality among the Muslims in a progressive and productive way to eliminate poverty among the Muslims (JAWHAR 2017).

In a meeting organised by JAWHAR and participated by the SIRCAs, the committee highlighted the need to establish a national waqf entity in order to support the SIRCAs in handling waqf matters. Therefore, JAWHAR established YWM as the national body on 23rd July 2008 after considering the suggestion to bond and harness waqf resources while simultaneously complementing the efforts of SIRCAs in achieving sustainable waqf development, ensuring continuous benefit to the potential beneficiaries.

## **2.2 Waqf Management Attribute**

### **2.2.1 Strengthening Relevant Policies and Regulations**

The empowerment of Islam and its affairs on state government provide important implications on the understanding of the implementation of some fundamental practices of Islam. As pointed out by Abdul Jalil et al. (2016), each state is responsible to circulate their own rules and regulations in administering the administration of Islam and its relevant matters. Hence, this situation has led to the inconsistent implementation of several aspects of Islamic laws, including the legislation of waqf practices (Siraj and Ismail 2015; Shafii et al. 2016). For instance, the legislation of waqf in Selangor was founded in the Administration of the Religious of Islam (State of Selangor) Enactment 2003. On the other hand, the legislation of waqf in Johor is under the Administration of the Religious of Islam (State of Johor) Enactment 2003.

On another note, there is no specific legal framework in practice found in the waqf institutions (Ismail et al. 2015). Siraj and Ismail (2015) stated that SIRC's do not have a separate enactment for waqf but still accepting the Islamic Religious Administration Enactment of the Federal Constitution which restricts the endowment for only a third of the wealth of Muslims. As a result, this situation has caused unfairness to the waqf considering that they should be allowed to make decisions on how much of their wealth that they wish to endow. Meanwhile, the absence of a similar provision on waqf properties has restricted the power of SIRC's in managing the resources efficiently (Harun et al. 2014; Ismail et al. 2015). Therefore, it is important for the waqf authorities to structure a standardised law and prepare a standard waqf manual that will help to strengthen the available waqf regulations.

### **2.2.2 The enhancing Capability of Human Capital**

The OECD (2001) defines human capital as “the skills, competencies, knowledge, and attributes embodied in individuals that facilitate the creation of personal, social, and economic well-being.” Isola and Alani (2012) stated human capital as a process involving training, education, and other professional initiatives aimed at enhancing employees’ values, level of ability, skills, and knowledge. In this case, it is expected to lead to the satisfaction and performance of the employees, which ultimately enhances the organisation’s performance. In fact, the effectiveness of waqf performance would highly rely on the quality of waqf officer’s ability to identify and respond to the needs of society (Osman and Agyemang 2020). Hence, it is important to sustain the competitiveness of human capital in the organisation because it is an instrument that is capable of increasing the productivity of the firm.

In the context of waqf institutions, Ismail et al. (2015) assert that SIRC's are suffering from the lack of human resources when undertaking the activities of waqf. Generally, it should be noted that most SIRC's tend to have a small number of staffs in operation, which leads to an extra workload that is outside their job scope,

thus increasing the symptoms of motivational difficulties among the staffs at SIRC's (Harun et al. 2014). Furthermore, SIRC's is also in the urge to recruit staff with more expertise to ensure the proper supervision of waqf properties that should be managed efficiently and effectively (Ab. Aziz et al. 2013). Accordingly, it should be understood that the lack of professionalism by the SIRC may pose a significant impact on the management of the institution, especially if the person is holding vital roles in the decision-making process (Siraj and Ismail 2015). Therefore, this dimension is essential in building future human capital capabilities for the waqf institution.

### 2.3 *Waqf Performance*

Over the years, a considerable number of scholars and researchers have been studying and proposing definition and measurement related to the performance of non-profit organisations. However, the task to conceptualise and measure the performance of the institution is not simple considering that these organisations are not only focused on the economic indicators but also larger aspects of social services (Noordin et al. 2017). Siraj (2012) emphasises the slight variation of the current practice of performance measurement in waqf institutions which desperately requires a certain level of standardisation. The absence of standardisation has led the scholars and researchers to have different opinions on the level of measurement of the waqf performance. According to Forbes (1998), this issue is caused by the complexity of measurement because these organisations put more emphasis on achieving their missions that are difficult to measure (as quoted by Epstein and McFarlan 2011).

On another note, the performance of non-profit institutions in previous studies was measured using the financial ratios as the performance measurement. However, the measurement of performance becomes more crucial and complex due to the failure of achieving financial success as the main objective of a non-profit organisation (Helmig et al. 2014). Herman and Renz (1999) emphasised that the measurement of performance must not focus on monetary factors but rather on the level of non-profit organisation reaction towards moral values which may inspire contributors and beneficiaries.

In line with the above-mentioned problem, Noordin et al. (2017) have developed a contingency framework for measuring the performance. The framework was established based on the results of Ebrahim and Rangan (2010) on the measurement of social performance on the third sector organisations (TSOs) which was specifically modified to the natures and operations of waqf institutions. Figure 2 illustrates briefly the performance indicators that are relevant in measuring the performance of waqf institutions in Malaysia.

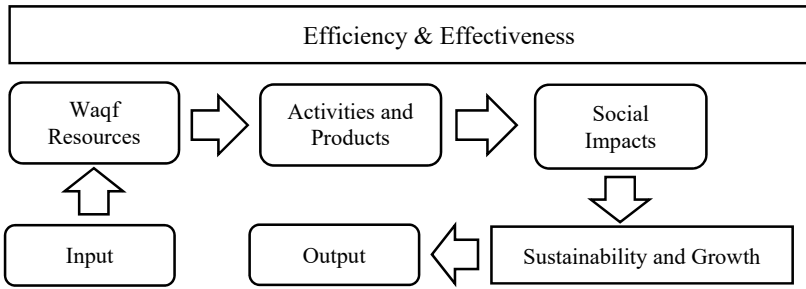


Fig. 2 Indicators used for measuring the performance of waqf

### 2.3.1 Efficiency in Waqf Operation

Dayson and Wilson (2011) define efficiency as the relationship between the inputs used to deliver charitable activities and the level of activities delivered to intended beneficiaries. In this case, input refers to the resources that are dedicated to the operation which are necessary for the production of goods as well as the delivery services of any organisation. According to Sillanpaa (2011), the viewpoints of input is focused on how non-financial resources are being acquired and efficiently utilised in order to ensure the sustainability and support of the operation in achieving the objectives of the organisation. In the case of waqf, the input is usually received in the form of properties, assets, cash, or shares from the waqif adapting the performance measurement in the context of waqf institutions. Therefore, this clearly indicates that the SIRC’s are obligated and accountable to take care of these resources efficiently in accordance with the objectives of the institutions with the aim of benefiting the social well-being of the *ummah*.

### 2.3.2 Social Effectiveness

Bagnoli and Megali (2011) define social effectiveness as a measurement of the organisation ability in fulfilling the needs of its target community through the execution of activities and services with the utilisation of available resources in socially responsible ways. Social effectiveness is also known as output which is used to measure the effectiveness of inputs management which is related to the goal of an organisation (Berman 2015) as well as short-term objectives of institutions (Mitchell 2012). In the context of waqf institutions, the output should support the goals and objectives of the institutions and provide direct significances to the well-being of the society (Bekkers and Verkaik 2015).

## 2.4 *Nexus Between Waqf Management Attributes and Waqf Performance*

An effective waqf determinant is vital considering its important role in the performance of waqf institutions. A well-managed and structured waqf management attributes will bring a significant and direct impact on the performance of waqf institutions, including an indirect impact on the well-being of Muslim society in Malaysia. Mutalib and Maamor (2016) stated that effective waqf management can produce a more efficient performance of waqf institutions, particularly in terms of their financial performance and operational performance. Moreover, the improvement of operational performance will allow the *ummah* to enjoy the benefits in many aspects of their lives such as economic development, religious matter, education sector, community facilities and other.

Furthermore, it is believed that developing an effective waqf management attribute is a major responsibility and duty of the waqf institutions. Candra and Rahman (2010) highlighted that it is important to develop an effective waqf management attribute due to its ability to generate income from the resources being registered and gazette under the governance of waqf administration while producing a return that can be utilised to fulfil the needs of the society as a whole. Waqf institutions should ensure that the utilisation of waqf resources will not only assist those who are in need but also helps to reduce and alleviate the poverty level in Malaysia (Sapuan et al. 2017). Meanwhile, it should be noted that unsystematic management is normally caused by inefficient management. According to Harun et al. (2012), there must be an improvement in the internal control of waqf management or in the managerial procedures of the institutions in order to improve the inherent problems.

Chowdhury et al. (2015) added that good-management attributes are the main pillars for improving the performance of waqf institutions. A clear explanation of this matter is that it describes the level of efficiency of waqf management as well as how sustainability can be brought to social welfare. Moreover, it is believed that the performance of waqf institutions can be improved through a sound internal control. As stated by Yaacob et al. (2016), the internal control system should be exercised in order to support the organisation in achieving its objectives through the management of the level of risks, while complying with the rules and policies of institutions. A strong management control, especially through better regulation and human capital skills, can help to improve such areas of weaknesses in the management and administration of waqf institutions. Hence, it can be considered as a starting point to maintain a good image and quality towards the effectiveness of waqf institutions. According to Mohd Zeni and Sapuan (2018) emphasize on enhancing the capability of human capital and improving the infrastructure of Waqf Institution would be contributed to a positive effect on the efficiency of waqf institutions. Sapuan et al. (2017) also emphasized on improving the monitoring mechanisms, creating innovation, enhance the capability of human capital and practicing *Shuratic* decision making process in waqf management to improve the performance of Waqf institutions.

## ***2.5 The Moderating Role of Waqf Governance on Waqf Management Attribute and Waqf Performance***

Scholars and Islamic jurists have agreed that strong governance is considered as the foundation that can reinforce public confidence in the Islamic capital market. Sapuan and Mohd Zeni (2021) and Abdullah (2015) discovered improving waqf governance became a pushing factor that improve donors' (*waqif*) trusts and instilling public confidence towards the sustainability of Waqf institutions for the long-term growth. At the Higher Education Forum on 22th February 2018 title "Waqf: Gaining the trust for social-economic sustainability", the King of Perak state, Sultan Nazrin Shah stressed out that implementing and maintaining a robust waqf governance for the management of waqf may seem as a daunting and onerous undertaking, but it is an absolute imperative if waqf authorities are to gain and reinforce the trust and confidence of stakeholders. He added that other mechanisms also need to be highlighted while taking into account the importance of improving waqf governance, which could help to restore waqf to its former prominence.

Securities Commission Malaysia (2014) discovered good governance can lead to efficient management which may improve the performance of waqf institutions. Arshad and Zain (2017) asserted that the move of implying good governance is important because the biggest impediment to the development of the waqf system was the perceived poor management of waqf institutions. Waqf governance is expected to play an important role in shaping the priority of waqf resource management for social effectiveness with the aim of enhancing the well-being of mankind (Laldin et al. 2012). Mohd Zeni and Sapuan (2018) mentioned good governance may help the institutions to alleviate the issues of inefficiency in the operation of waqf management. Mahmud and Haneef (2016) stated the governance must not be neglected by the waqf authorities; hence, adequate internal controls including risk management protocols and regular audits must be put in place. This may encourage a sound waqf governance, where these actions can eliminate and overcome the issues of mismanagement that occurred in the administration of waqf institutions especially, to overcome the conflict of interest or "self-interest" of the settlor (*waqif*) and the trustee (*mutawalli*) (Mohd Zeni and Sapuan 2017b).

## ***2.6 Organisational Environment Theory***

Organisational environment theory is all the elements existing outside the organisation's boundary that have the potential to affect all or part of the organisation's performance. It is also described as features that characterise the organisation and differentiate it from other organisations within a given period, which affects the behaviour of management therein. In addition, it is crucial to note that these features basically connect the internal and the external work environment for the purpose of



improving the performance of organisations. Environmental and organisational characteristics can have a strong influence on the ability to adapt strategically, including the performance of organisations.

Davidsson et al. (2006) stated the external environmental uncertainty level still affects organisational performance regardless of the chosen strategy and context of the operation. Organisational theory proponents highlight that organisations must adapt to their environment if they aim for survival (Bagire and Namada 2013). Organisational performance usually is somewhat predicted by the environment indicators (Kinyua-Njuguna et al. 2014); hence, any changes that may occur in the external environment may be favourable or unfavourable to the performance of organisations. Therefore, many researchers agreed that the external environment remains a critical aspect in the strategic management which have a higher influence on organisational outcomes.

The performance of waqf institutions in Malaysia remains wanting due to the various limitations that originated from the external environment and lack of expertise in monitoring and analysing the operation of waqf. Hence, through this theory, it is significant for the waqf institutions to be able to understand the important role of environmental scanning, environmental uncertainty, building capacity, and domain consensus in improving the performance of waqf industry. Overall, a proper scanning of the external organisational environment may lead to better performance because it would improve the ability to find new prospects.

### 2.7 Research Framework

The research framework of the present study is shown in Fig. 3:

Based on the above discussion, the following are the proposed hypotheses for the present study:

- H1 There is a significant effect of waqf management attribute on waqf performance.
- H2 There is a significant effect of waqf governance on waqf performance.

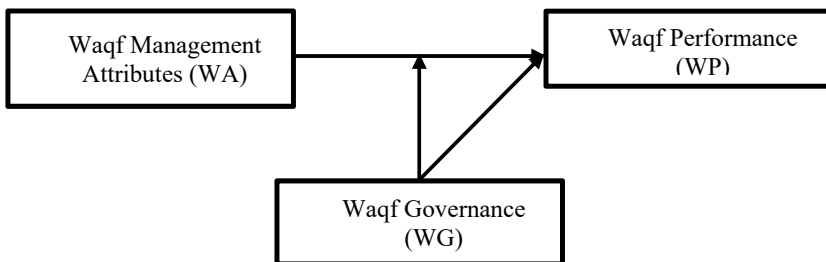


Fig. 3 Proposed framework

H3 Waqf governance moderates the relationship between waqf management attribute and waqf performance.

### 3 Methodology

In the case of the current research, the primary data were gathered using the survey questionnaire method and were distributed to waqf institutions in Malaysia in order to empirically test the developed research framework. A pre-testing was done on 30 waqf experts with work experience of five years and above. The results suggested for the deletion and modification of certain items prior to the distribution of the final questionnaire. Meanwhile, purposive sampling was used to represent the population due to the small number of populations in the waqf institutions. On another note, the present study also employed the snowball technique due to the small number of the potential sample who are experts in waqf related matters.

In total, 99 responses were collected as a sample from the total population that consisted of 152 respondents, which is equivalent to 65% of the total population. The present study adopted the five-point Likert-type scale ranging from (1) “strongly disagree” to (5) “strongly agree”. In addition, the instruments for this study were adapted from past studies and a self-administered questionnaire was distributed to waqf institutions. The data collection was carried out between March and June 2018, while the questionnaire was divided into four parts as follows: (1) demographic profile, (2) waqf management attribute assessment, (3) Governance assessment, and (4) Waqf Performance assessment.

Apart from that, Smart PLS 3.0 was used for statistical analysis of the collected data, followed by the assessment of the Partial Least Square-Structural Equation Modelling (PLS-SEM) because it provides more advantages to the researcher which include higher possibility to achieve a high level of statistical power, no distributional assumptions, and less amount of unexplained variance (Hair et al., 2016).

For the current research, the following research questions were developed:

RQ1: What is the relationship between waqf management attribute and waqf performance?

RQ2: What is the relationship between waqf governance and waqf performance?

RQ3: Does waqf governance moderate the relationship between waqf management attribute and waqf performance?

Therefore, the objective of the present study is to determine the effect of waqf management attribute on the performance of waqf institutions in Malaysia with the moderating role of waqf governance.

## 4 Data Analysis

### 4.1 Demographic Profile

Table 1 shows the demographic profile of the sample population. More than half of the respondents are female (53.5%), while 46.5% of them are male. The majority of respondents are between 26 and 45 years of age (79.8%). On another note, more than half of the respondents are degree holders (60.6%), whilst diploma and master's holders are at 23.2% and 16.2%, respectively. Meanwhile, more than half of the respondents are from the State Islamic Religious Councils (SIRCs) institutions (64.6%), while Department of Awqaf, Zakat, and Hajj (JAWHAR) and Malaysia Wakaf Foundation (YWM) are represented by 14.1% and 21.2%, respectively. From the total respondents, half of the respondents are executives (58.6%), followed by managers (10.1%), officers (19.2%), and others (12.1%). Most of the respondents have 6 to 10 years of experience in waqf industry (44.4%), followed by 1 to 5 years

**Table 1** Demographic profile (N = 99)

Demographic characteristics	Frequency	Percentage (%)
<i>Gender</i>		
Female	53	53.5
Male	46	46.5
<i>Age</i>		
18–25	16	16.2
26–35	49	49.5
36–45	30	30.3
46–55	4	4.0
<i>Education</i>		
Diploma	23	23.2
Degree	60	60.6
Master	16	16.2
<i>Institution</i>		
JAWHAR	14	14.1
YWM	21	21.2
SIRCs	64	64.6
<i>Position</i>		
Manager	10	10.1
Executive	58	58.6
Officer	19	19.2
Others	12	12.1
<i>Experience</i>		
Less than 1 year	10	10.1
1–5	37	37.4
6–10	44	44.4
11–15	8	8.1

of experience (37.4%), less than a year experience (10.1%), and lastly, 11–15 years (8.1%).

## ***4.2 Measurement Model Results***

Hair et al. (2014) stated that the first step in the analysis process is the evaluation of the measurement model. Regarding this matter, it should be understood that it is an important step of checking for internal consistency reliability via composite reliability (CR) and Cronbach's alpha. In the measurement model, the values of CR should be 0.70–0.90 (Nunnally 1978; Hair et al. 2017); however, it is not desirable if the values are greater than 0.90 which indicates that all the items are measuring the same phenomenon. Similarly, Cronbach's Alpha should also be at 0.70 (Cronbach 1951); however, 0.60 or higher is acceptable for both reliabilities in an exploratory study, (Bagozzi and Yi 1988). Furthermore, the average variance extracted (AVE) is also important in establishing convergent validity because it is required to exceed the value of 0.50 for all constructs. For indicator reliability, in most cases, it should be higher than 0.70, but in some cases, Urbach and Ahleman (2010) suggested that the minimum acceptable value is  $\geq 0.40$ , in which the AVE and CR must be contributing to the scores of  $>0.50$  and  $>0.70$ , respectively. Table 2 presents the results of the measurement model which show that all constructs identified in this study are valid.

## ***4.3 Discriminant Validity***

Discriminant validity is the degree to which indicators are differentiated among constructs or measured differently (Fornell and Larcker 1981). Chin (1998) stated that discriminant validity is obtained by calculating the relationships between the latent variables, component scores, and other indicators. In reference to the criterion by Fornell and Larcker's (1981), the square root of AVE of a construct should be larger than the correlations between the construct and other constructs in the model. The existence of discriminant validity was assessed in the present study by comparing the AVE of each construct with its squared correlation with other constructs in the model as shown in Table 3.

## ***4.4 Structural Model***

The present study proceeded with the structural analysis in order to calculate the hypothesised relationships. Figure 4 shows the structural model of waqf management attribute and waqf performance with the moderating role of waqf governance.

The results are presented in Table 4 and Table 5.

**Table 2** Convergent validity and CR

Construct	Loading		Cronbach's Alpha	AVE	CR
WA	A1	0.471	0.749	0.501	0.812
	A2	0.549			
	A3	0.468			
	A4	0.477			
	A6	0.637			
	A7	0.769			
	A8	0.899			
WP	B4	0.692	0.849	0.583	0.890
	B5	0.892			
	B6	0.826			
	B7	0.813			
	B8	0.693			
WG	C21	0.938	0.855	0.620	0.890
	C22	0.622			
	C23	0.919			
	C25	0.722			
	C26	0.512			
	C27	0.776			

**Notes:** WA = waqf management attribute; WP = waqf performance; WG = waqf governance; CR = composite reliability; AVE = average variance extracted. Items A5, A9, A10, B1, B2, B3, C24, and C28 was deleted due to the loading of below 0.4

**Table 3** Discriminant validity

	WA	WP	WG
WA	<b>0.630</b>		
WP	0.496	<b>0.763</b>	
WG	0.134	0.419	<b>0.787</b>

**Notes:** The diagonals represent the square root of the AVE, while the off diagonals represent the correlations. WA = waqf management attribute, WP = waqf performance, and WG = waqf governance

The R<sup>2</sup> value is 0.373 which suggests that 37.3% of the variance in waqf performance could be explained by the waqf management attribute. Meanwhile, it should be noted that there is a positive relationship ( $\beta = 0.448, p < 0.01$ ) between waqf management attribute and waqf performance. Hence, H1 is supported. The result also shows a positive relationship ( $\beta = 0.359, p < 0.01$ ) between waqf governance and waqf performance, which indicates that H2 is supported.



Fig. 4 Structural model

Table 4 Hypothesis testing

	Dependent = WP	
	Main effect	Interaction effect
	Std. beta	Std. beta
WA	0.448***	0.396***
WG	0.359***	0.367***
WD*WG	-	0.188***
R <sup>2</sup>	0.373	0.403
R <sup>2</sup> change	0.373	0.030

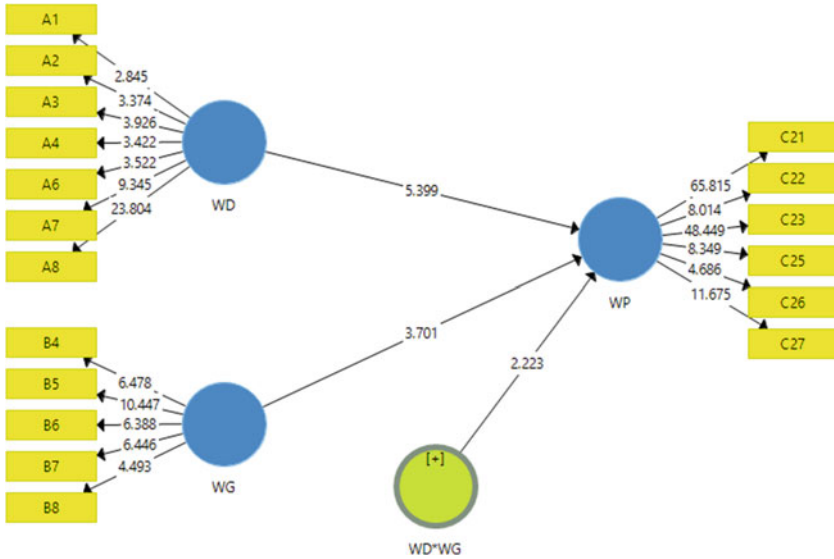
\*\*\* p < 0.01, \*\* p < 0.05

Notes: WP = waqf performance, WA = waqf management attribute, WG = waqf governance

Table 5 Results of hypothesis testing

Hypotheses	Relationship	Findings
H1	Waqf management attribute → waqf performance	Supported
H2	Waqf governance → waqf performance	Supported
H3	Waqf management attribute*waqf governance → waqf performance	Supported

The third hypothesis (H3) is to test the moderating effect of waqf governance. A two-stage approach is used in the present study as suggested by Hair et al. (2017) in order to reveal the significance of the moderating effect. The R2 increased from 37.3% to 40.3% after the interaction effect is entered into the model, thus giving R2 changes of 3%. The effect of interaction is significant ( $\beta = 0.188, p < 0.1$ )

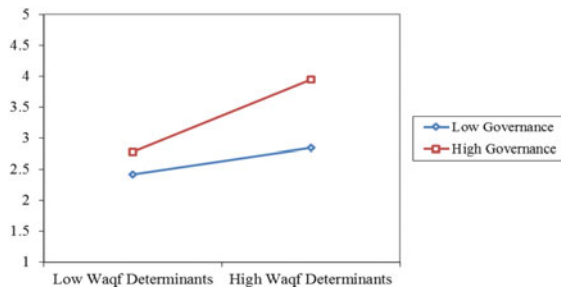


**Fig. 5** Bootstrapping of Path Coefficient of Waqf management attribute (WD), Waqf Governance (WG), and Waqf Performance (WP)

which implies that H3 is also supported in this study. The relationship between the independent variables, moderator effect and the dependent variable as indicated by the hypothesis being tested is been represented in Table 5 (Fig. 5).

According to the suggestion made by Dawson (2014), the present study plotted the interaction effect for the purpose of observing how waqf governance influences the relationship of waqf management attribute and waqf performance. Generally, the interpretation of the interaction plot is to look at the gradient of the slopes. The interaction term is calculated by inserting the regression coefficient of IV, moderator and interaction in the excel worksheet plot to see the two-way interaction effects. As can be seen in Fig. 6, the line labelled high governance can be observed to have a steeper gradient compared to the low governance. Therefore, the result indicates that the positive relationship between waqf management attribute and waqf performance

**Fig. 6** Interaction plot



is indeed stronger when waqf governance is high. Overall, the hypothesis is supported based on the hypothesis of the study prior to the analysis.

## 5 Discussion

The present study revealed the importance of waqf management attribute and their relationships with the performance of waqf institutions in Malaysia. As previously mentioned, the performance of waqf institutions can be improved by strengthening the internal factors which should start with the management. Accordingly, this could result in better waqf industry in Malaysia. Moreover, it is believed that the establishment of proper guidelines for waqf management may lessen the mismanagement issues, thus improving the inherent problems faced today.

A considerable amount of conceptual studies proposed that proper strategies of waqf management tend to have a direct influence on the performance of waqf institutions. However, only a few studies were conducted with the empirical findings to prove its inter-connection due to limited information on the matter. Hence, the results of the present study positively support the assertions about the importance of comprehensive waqf management attribute, which can be very useful in improving the performance of waqf institutions. According to the Department of Waqf, Hajj, and Zakat (JAWHAR), the need for effective waqf management attribute has emerged due to the increasing growth of waqf.

Meanwhile, it is generally known that one of the biggest obstacles to the development of waqf institutions nowadays is poor management; hence, comprehensive waqf management attribute is deemed essential in producing absolute success to fulfil the key goals and objectives of the institutions. Regarding this matter, it should be noted that inefficient management occurred due to unsystematic management by the waqf administration. Therefore, improvement of the internal control is considered vital as it will ensure that the distribution of waqf resources can be carried out efficiently and effectively (Hasyeilla et al. 2014).

Previously, the present study mentioned that a greater emphasis on good governance of waqf institutions needs to be highlighted. Cajee (2007) agreed that the best practices of good governance should be implemented due to its potential as a critical factor of success in revitalising the waqf institutions. Similarly, Masruki and Shafii (2013) also agreed that it is important for the management of waqf institutions to be guided by a Code of Governance to allow for a better understanding of their job scope, ensuring that waqf is delivered as stated in Islam, effectively working in shuratic (consultative) process, exercising control over the waqf assets, and behaving with integrity and accountability. The strong influence of governance on the relationship between waqf management attribute and waqf performance could also be clearly observed in the present study.

As mentioned earlier, many conceptual studies have looked at the importance of comprehensive waqf management attribute towards the performance of waqf institutions, including the good governance and comprehensive waqf management attribute.



However, only a limited number of studies were able to produce empirical results and findings due to the lack of information. The present study successfully investigated the relationships between all the three variables, which further enhances the level of understanding of the importance of comprehensive waqf management as well as significantly contribute to the body of knowledge of waqf institutions.

## 6 Conclusion

The current research dealt with the important aspects of good governance in influencing the relationship between waqf management attribute and performance of waqf institutions in Malaysia. A considerable amount of conceptual studies agreed that waqf institutions in Malaysia are in need of a proper waqf management guideline in order to reduce issues related to mismanagement with the aim of enhancing the performance of waqf institutions in Malaysia. Additionally, more attention has been accorded to governance as a critical success factor in uplifting the waqf institutions in Muslim countries. Meanwhile, a number of researchers claimed that the improvement of governance helps to strengthen the management of waqf institutions as well as the effectiveness and sustainability of the long-term growth of waqf institutions (Sapuan and Mohd Zeni 2021).

The analysis of the findings in the present study has proven that the formation of waqf management attribute can assist the waqf authorities in their consideration of ensuring the performance of waqf institutions. In other words, the waqf management attribute is seen as good predictors that can solve the issues of inefficiency. In fact, many researchers and Islamic scholars have recommended and agreed that the formation of waqf management attribute is the best solution in minimising the issues related to waqf performance. The present study also highlighted the need for waqf institutions to improve their performance through good governance. In fact, governance is considered as a success factor in uplifting the image of waqf institutions and as a way of pushing the supports and trusts of the investors towards the institutions. In other words, good governance plays an important role in further strengthening the management of waqf institutions, while helping to protect the interest of beneficiaries and gaining the confidence of the public in the management of waqf institutions. Therefore, it can be concluded that the interconnection of governance significantly impacts the relationship between waqf management attribute and performance of waqf institutions.

Following the study, the formation of the model was focused on governance in terms of human governance (behavioural). Hence, future works on this topic should consider discovering other factors such as government support, marketing, and financial that could influence the relationship between waqf management attributes and the performance of waqf institutions. On the other hand, it is also suggested to relate these factors with innovation in waqf practices. Innovative initiative through waqf is crucial to help society to shift to another level in performing work (Bilal

Khan et al. 2021). Overall, the proposed model should be considered and applied by the waqf authorities or adapted by similar studies investigating different institutions.

**Acknowledgements** The authors would like to thank the FRGS grant provided by the Ministry of Higher Education, Malaysia and Universiti Tenaga Nasional, Malaysia for the funding of this research. Grant Reference No: FRGS/1/2016/SS08/UNITEN/02/1 (08/2016).

## References

- Ab. Aziz, M.R., Johari, F. Sabri, H.: Assessment on the willingness among public in contributing for social Islamic Waqf bank for education. *Aust. J. Basic Appl. Sci.* **7**(13), 172–176 (2013)
- Abdullah, M.: A new framework of corporate governance for waqf: a preliminary proposal. *Islam Civ. Renew.* **6**(3), 354–370 (2015)
- Abdul Jalil, M.I, Yahya, S., Pitchay, A.A.: The contemporary model of waqf structure. In: International Conference on Islamic Leadership and Management 2016. Universiti Islam Sultan Sharif Ali, Brunei (2016)
- Anwar, T.: Waqf (endowment): a vehicle for Islamic social entrepreneurship. IBFIM perspectives. Malaysia: Kuala Lumpur, Malaysia (2017)
- Arshad, R., Zain, N.M.: Performance measurement and accountability of waqf institution in Malaysia. *SHS Web Conf.* **36**(5), 1–15 (2017)
- Arshad, R., Zain, N.M., Urus, S.T., Chakir, A.: Modelling maqasid waqf performance measures in waqf institutions. *Glob. J. Al-Thaqafah* **8**(1), 157–170 (2018)
- Bagire, V., Namada, J.: Managerial skills, financial capability and strategic planning in organizations. *Am. J. Ind. Bus. Manag.* **3**(5), 480–487 (2013). <https://doi.org/10.4236/ajibm.2013.35055>
- Bagozzi, R.P., Yi, Y.: On the evaluation of structural equation models. *J. Acad. Mark. Sci.* **16**(1), 74–94 (1988)
- Bekkers, R., Verkaik, D.J.: Evaluation resources for non-profit organizations. *Non-profit Manag. Leadersh. J.* **10**(4), 463–472 (2015)
- Berman, E.: *Performance and Productivity in Public and Non-profit Organizations*. Routledge, New York (2015)
- Bilal Khan, M., Ahmad Ghafoorzai, S., Patel, I., Mohammed Shehbaz, D.: Waqf based Islamic fintech model for agriculture sector of Indonesia. *Int. J. Bus. Ethics Govern.* **4**(1), 73–85 (2021). <https://doi.org/10.51325/ijbeg.v4i1.61>
- Cajee, Z.A.: Revitalizing the institution of waqf in developing the community. In: Singapore International Waqf Conference, Singapore (2007)
- Candra, H., Rahman, A.A.: Waqf investment: a case study of Dompét Dhuafa Republika, Indonesia. *Shariah J.* **18**(1), 163–190 (2010)
- Chin, W.W.: *The Partial Least Square Approach to Structural Equation Modelling: Modern Methods for Business Research*. Springer, Heidelberg (1998)
- Chowdhury, M.S.R., Chowdhury, I.A., Muhammad, M.Z., Yasoa, M.R.: Problems of waqf administration and proposals for improvement. *J. Internet Bank. Commer.* **2**(1), 15–30 (2015)
- Cizakca, M.: *A history of philanthropic foundations: the Islamic world from the 7th century to the present*. Bogazici University, Turkey (2000)
- Cronbach, L.J.: Coefficient alpha and the internal structure of tests. *Psychomet. J.* **16**, 297–334 (1951)
- Davidsson, P., Delmar, F., Wiklund, J.: *Entrepreneurship and the Growth of Firms*. Edward Elgar Publishing, Cheltenham (2006)

- Dawson, J.F.: Moderation in management research: what, why, when, and how. *J. Bus. Psychol.* **29**(1), 1–19 (2014)
- Ebrahim, A.S., Rangan, V.K.: The limits of non-profit impact: a contingency framework for measuring social performance. *Int. J. Voluntary Non-profit Organ.* **25**(2), 307–336 (2010)
- Epstein, M.J., McFarlan, F.W.: Measuring the efficiency and effectiveness of a non-profit performance. *Strateg. Finance* **93**(4), 27–35 (2011)
- Forbes, D.P.: Measuring the unmeasurable: empirical studies of non-profit organization effectiveness from 1977–1997. *Non-profit Voluntary Sect. Quart.* **27**(2), 183–202 (1998)
- Fornell, C., Larcker, D.: Evaluating structural equation models with unobservable variables and measurement error. *J. Mark. Res.* **18**(3), 39–50 (1981)
- Hair, J.F., Gabriel, M.L.D.D.S., Patel, V.K.: AMOS covariance-based structural equation modelling (CB-SEM): guidelines on its application as a marketing research tool. *Rev. Brasileira Mark.* **13**(2), 44–55 (2014)
- Hair, J.F., Hult, T.M., Ringle, C.M., Sarstedt, M.: *A Primer on partial Least Square Structural Equation Modelling (PLS-SEM)*. Sage publications, California (2017)
- Harun, R., Isa, Z.M., Ali, N.: Preliminary findings on waqf management practices among selected Muslim countries. *Int. J. Econ. Financ. Issues* **28**(1), 117–127 (2012)
- Harun, F.M., Possumah, B.T., Shafian, M.H.M., Noor, A.H.M.: Empowering higher education institution: the role of Waqf-Malaysian perspective. *J. Developing Areas* **24**(5), 98–111 (2014)
- Hasyeilla, A.M., Rohayati, H., Nur, A.S., Norhana, A.M.B.: *Universiti Islam Malaysia: Transformasi pembangunan institusi wakaf pendidikan*. J. Pengurusan Jawhar **8**(2), 83–96 (2014)
- Helmig, B., Ingerfurth, S., Pinz, A.: Success and failure of non-profit organizations: theoretical foundations, empirical evidence, and future research. *Voluntas (Manchester, England)* **25**(6), 1509–1538 (2014)
- Herman, R.D., Renz, D.O.: Theses in non-profit organizational effectiveness. *Non-profit and Voluntary Sect. Quart.* **28**(2), 107–126 (1999)
- Ihsan, H., Ayedh, A.: A proposed framework of Islamic governance for Awqaf. *J. Islam. Econ. Bank. Financ.* **11**(2), 117–133 (2015)
- Ismail, C.Z., Salim, N.J., Hanafiah, N.J.A.: Administration and management of waqf land in Malaysia: Issues and solutions. *Mediterr. J. Soc. Sci.* **6**(4), 613–623 (2015)
- Isola, W.A., Alani, R.A.: Human capital development and economic growth: Empirical evidence from Nigeria. *Asian Econ. Fin. Rev.* **2**(7), 813–827 (2012)
- Kinyua-Njuguna, J.W., Munyoki, J., Kibera, F.: Influence of internal organizational environment on performance of community-based Hiv and aids organizations in Nairobi County. *Eur. Sci. J. ESJ* **10**(1) (2014). <https://doi.org/10.19044/esj.2014.v10n1p%p>
- Laldin, M.A., Mahmud, M.W., Sawari, M.M.F.: *Maqasid al-Shariah Dalam Pelaksanaan Waqf*. IUM Press, Kuala Lumpur (2012)
- Mahmud, M.W., Haneef, S.S.S.: Optimization of philanthropic waqf: the need for Maqasid al-Shariah based legislative strategies. *Int. J. Econ. Islam. Civ.* **4**(2), 1–14 (2016)
- Mitchell, G.E.: The construct of organizational effectiveness: perspectives from leaders of international non-profits in the United States. *Non-profit and Voluntary Sect. Quart.* **42**(2), 324–345 (2012)
- Masruki, R., Shafii, Z.: The development of waqf accounting in enhancing accountability. *Middle-East J. Sci. Res.* **13**(1), 121–144 (2013)
- Mutalib, H.A., Maamor, S.: Utilization of waqf property: analyzing an institutional Mutawalli challenges in management practices. *Int. J. Econ. Financ. Issues* **6**(7), 36–41 (2016)
- Mohd Zeni, N., Sapuan, N.M.: *The Role of Waqf in Achieving Sustainable Development Goals; Contemporary Issues On Zakat, Waqf And Islamic Philanthropy*, pp. 172–180. *Academy Contemporary Islamic Studies (ACIS)*, UiTM Shah Alam (2017a). ISBN 978-967-0171-80-7
- Mohd Zeni, N., Sapuan, N.M.: Revitalizing WAQF governance: a theoretical perspectives. *Int. J. Adv. Biotechnol. Res.* **8**(3), 305–311 (2017b)
- Mohd Zeni, N., Sapuan, N.M.: The Determinants of Waqf Efficiency in Malaysia. *Glob. Bus. Manag. Res. Int. J.* **10**(3), 1092–1106 (2018)

- Noordin, N.H., Haron, S.N., Kassim, S.: Developing a comprehensive performance measurement system for Waqf institutions. *Int. J. Soc. Econ.* **44**(7), 921–936 (2017)
- Nooraini, H.M.: Waqf development in Malaysia and Singapore: a comparative study. Doctoral thesis at Durham University (2015). <http://etheses.dur.ac.uk/11118/>
- Nunnally, J.: *Psychometric Methods*. McGraw-Hill, New York (1978)
- Osman, A.Z., Agyemang, G.: Privileging downward accountability in Waqf management. *J. Islam. Account. Bus. Res.* **11**(3), 533–554 (2020). <https://doi.org/10.1108/jiabr-05-2017-0064>
- Sani, A.A., Bustamam, K.S., Saidin, A., Bani, H.: Waqf performance measurement model in Malaysian Public Universities. *Universiti Teknologi MARA Melaka, Malaysia* (2017)
- Sapuan, N.M., Md Zeni, N.A., Hashim, S.L.: Elevation of waqf industry for social wellbeing in malaysia: issues and challenges. *Int. J. Adv. Biotechnol. Res. (IJBR)* **8**(3), 312–318 (2017)
- Sapuan, N.M., Mohd Zeni, N.: The determinants of waqf sustainability in malaysia: a PLS-SEM analysis. *Int. J. Bus. Soc.* **22**(1), 102–118 (2021)
- Securities Commission. *Waqf Assets: Development, Governance and the Role of Islamic Capital Market*. Securities Commission Malaysia. Malaysia: Kuala Lumpur (2014)
- Shafii, Z., Iqbal, Z., Tasdemir, M.: Governance regulatory framework for Waqf in selected countries. In: Johari, F., Abdul Rahman, A. (eds.) *Muktamar Waqf Iqlimi III (IQLIMI2016) Proceedings in Ban Nua Mosque, Songkla, Thailand, 2016*. Universiti Sains Islam Malaysia (USIM), Negeri Sembilan, Malaysia (2016). (Paper ID: IQLIMI2016-044)
- Sillanpaa, V.: Performance measurement in welfare services: a survey of Finnish organizations. *Measuring Bus. Excellence* **15**(4), 62–70 (2011)
- Siraj, S.A., Ismail, Y.: Strategic planning and accountability of Waqf management in Malaysia. In *Proceedings of 4th International Conference on Inclusive Islamic Financial Sector Development*. International Islamic University Malaysia, Selangor, Malaysia, 17–18 November 2015
- Sulaiman, M., Zakari, M.A.: Efficiency and effectiveness of Waqf institutions in Malaysia: toward financial sustainability. Paper Presented at the 9th International Conference on Islamic Economics and Finance, Istanbul, Turkey, 9–10 September 2013
- Tagoranao, M.S. Gamon, A.D.: Issues and challenges on the role of waqf properties in the development of the Islamic Institutions in the Philippines. In: *Proceedings of the Muktamar Waqf Iqlimi III 2016 (IQLIMI2016)*. Presented at the Ban Nua Mosque, Songkla, Thailand, 13–14 October 2016. Pusat Pembangunan Pembiayaan Wakaf (PPPW), Universiti Sains Islam Malaysia (USIM), Malaysia (2016)
- Urbach, N., Ahleman, F.: Structural equation modelling in information systems research using partial least square. *J. Inf. Technol. Theory Appl.* **11**(2), 5–20 (2010)
- Yaacob, H., Petra, A.S., Nahar, H.S.: A waqf accounting and reporting for accountability. A case study of awqaf. In: *19th International Research Conference*, Monash University, Melbourne (2016)

# The Earnings Management in Jordanian Banks: Do Profitability Measures Matter?



Abdul Razzak Al-Shahadah, Dea'a Al-Deen Al-Sraheen,  
and Mohammad Khudari 

**Abstract** The purpose of this study is to analyze the relationship between profitability measures and earnings management in Jordanian commercial banks. The quantitative methodology was used to collect the research data from the financial statements of (35) Jordanian commercial banks from (2013 to 2019). The results of the study reveal that there is a negative and significant relationship between Return on Equity (ROE) and earnings management, and a positive and not significant relationship between Return on Deposits (ROD) and earnings management. It's also documented that there is a positive and significant association between each Return on Investment (ROI), Earnings Per Share (EPS), and earnings management.

**Keywords** Profitability measures · Return on investment · Return on deposits · Return on equity · Earnings per share · Earnings management · Jordan

## 1 Introduction

Earnings management refers to the act done by the bank's management or a company to effect on the earnings reported in the financial statements. It is carried out to identify a set target, based on the management strategy, whereas it uses accounting methods to exhibit an excessively positive view of a bank's financial positions, inflating earnings. Besides, earnings management is different from the basic business management of a company (Ronen and Yaari 2008). Achieving, maximizing, and sustaining profitability is one of the main objectives of commercial banks, as earnings enable them

---

A. R. Al-Shahadah  
Faculty of Business, Al-Zaytoonah University of Jordan, Amman 11733, Jordan

D. A.-D. Al-Sraheen  
Faculty of Business, Al Albayt University, Amman, Jordan

M. Khudari (✉)  
College of Graduate Studies, Universiti Tenaga Nasional, Jalan IKRAM-UNITEN, 43000 Kajang, Selangor, Malaysia  
e-mail: [khudari@uniten.edu.my](mailto:khudari@uniten.edu.my)

to strengthen their financial position, increase their equity, and enhancing their financial solvency and liquidity, thus increasing their ability to meet their obligations. Due to the importance of profitability for the preparers and users of financial statements, it is not surprising that management is often preoccupied with managing management, the focus on managing management is a result of the management's desire to reach a desirable level of bank's performance.

The options for discretionary accruals available to the bank's management under the Generally Accepted Accounting Principles (GAAP) and how easy to manipulate these accruals allowed the management to modify and manage the earnings to achieve a required level of profitability (Cimini 2015). The management manipulates the annual income, by increasing, decreasing or smoothing, through earnings management practices in order to influence the bank's shares prices or to achieve self-interests, such as reward, benefits, and compensation (Tabassum et al. 2015; Zang 2011).

The attention of the users of financial statements is focused on the bank profitability, as an indicator of the bank's ability in achieving a certain level of earnings, which reflects maximizing its share's price and its value in the stock market. Therefore, the management is interested in maximizing the net income, which is reflected in the form of a dividend to shareholders, which is deemed as an attractive factor for new shareholders through the increase of share price. Therefore, the management uses many practices that lead to increasing the net income on the income statements. Despite that these practices do not produce any operational cash inflows or outflows (Domash 2005).

If the management practices earnings management through the manipulation in discretionary accruals, accounting estimates, or through alternative accounting policies to achieve short-term benefits. These behaviors are also called opportunistic behaviors, which are often deliberate forms by the corporate managers which make such practices unacceptable ethics (Al-Sraheen and Saleh 2017; Al-Sraheen and Alkhatib 2016). Therefore, this also may mislead the users of the financial statements (Beneis 2002). The management of the bank may use earnings management practices to minimize the gap among the expectations of financial analysts with the internal objectives, improve the image of the bank, improve the bank's shares prices and conceal undesired financial circumstances (Walter et al. 2013).

Jordan is a small country with limited resources that suffers from high government debt and slow economic growth and relies heavily on the banking sector (Bekhet et al. 2020). In this study, many reasons influence the choice of Jordanian commercial banks. First, there are only a few studies on the profitability of Jordanian commercial banks. Second, the banking sector is relatively large, and licensed banks' assets reached 161.9% of the state's GDP at the end of the fiscal year 2018. The assets of the banking sector accounted for 93.3% of the state's financial system (CBJ 2020). Therefore, this study aims to discuss the following objectives:

- to identify the profitability measures in the earnings management of the Jordanian commercial banks.

- to analyze the relationship of company size and debt ratio of the bank with the earnings management in the Jordanian commercial banks.

To achieve these objectives, this article is structured as follows: Sect. 2 discusses the literature review and the Hypotheses. Section 3 presents the data sources and research methodology. Section 4 deals with empirical results discussion. Conclusions and policy implications are discussed in Sect. 5.

## 2 Literature Review

### 2.1 Theoretical Background

- **Profitability of the Commercial Banks and Its Proxies**

Profitability is one of the main sources of capital generation, and the sound banking system is based on profitable banks with strong capital. Profitability is the key indicator of the bank's competitive position in banking markets and its quality of management (Hammad 2005).

Profitability can be defined as the relationship between the profits earned by the bank and the investments that contributed to these profits. Profitability is the objective of any enterprise and is deemed as an indicator of the bank's efficiency (Hamdan and Hussein 2016). Profitability is one of the most important indicators of the success of the banking business, as well as its role in enhancing the confidence of all related parties, which enhances the investment environment of the banking sector. It also attracts more financial deposits that help to sustain the banking services and investment operations of the bank efficiently and effectively (Salman 2013).

In addition, bank management needs to know the reasons behind profitability decline to manage the key controllable factors properly and to maximize the bank's profits. Profitability is a major goal for all profit-institutions and is essential for their survival and sustainability. Profitability is also an important tool for measuring management's efficiency in using the existing resources, thus, profitability reflects the relationship between reported earnings and the investments that contributed to those earnings. Profitability is measured either in the relationship between profits and sales or through the relationship between profits and the investments that contributed to achieving such profits (Dekan 2009). According to the accrual basis, that companies rely on reflecting their accounting operations, net income can be seen as operating cash flows, and current and non-current liabilities. Current liabilities mean the change in networking capital without changes in cash, investments, or short-term debts. Non-current liabilities such as the depreciation of non-current assets and changes in the deferred tax balance (Al-Qathami 2010).

The financial information published by the financial statements of the banks in the stock exchange is an important source of information to the investors and analysts in making their decisions. This reason considered as an incentive to managers to

manage the earnings in an attempt to influence the assessment of the share price to be consistent with the expectations of these analysts. This may appear when the bank intends to issue new shares in order to increase its prices. The banks that facing a bad year seek to maximize their extraordinary expenses in the same year in order to achieve significant profits in the coming years (Alpaslan 2013).

The importance of profitability in commercial banks comes through the main objective of banks, which is to maximize long-term profitability within their constraints. Profitability is important for the various parties interested in the bank's economy. The shareholders of the bank are interested in profitability because it represents the return on their capital invested. Bank depositors benefit from profitability because it leads to a strong and sound banking system through restricted and unrestricted retained earnings that increase the guarantee level of their deposits. Bank borrowers benefit from bank profits because it expands the lending capacity of banks to expand their capital, which is mainly fed by reported net income. Therefore, profitability has great importance to banks as it enables them to perform their services better (Basha 1997).

An evaluation of the bank's performance is carried out by using a range of financial ratios that enable the analyst to assess the source and profits level of the bank. The most important ratios taken into consideration in evaluating the bank's performance are the ratios related to the measurement of profitability, namely (Daoud et al. 2015; Hammad 2010):

- a. Return on deposits: all types of deposits represent the major part of commercial bank resources to exercise their activities. This criterion is the measurement of profitability is based on the relationship between the operating income and the total customers' deposits.
- b. Return on investment: Return on investment is a tool that is widely used to assess the performance of banks. This criterion is the measurement of profitability is based on the relationship between operating income and the assets that contributed to it.
- c. Return on equity: The return on equity is a tool used to measure profitability. This indicator is expressed by the relationship between net distributable earnings and equity.
- d. Earnings per share: This criterion in measuring profitability is based on the relationship between the dividend and the number of shares issued by the bank.

#### • Earning Management and Accruals

The management of the banks relies on the preparation of financial statements on international accounting standards to ensure integrity and objectivity of accounting measurement and achieve fairness in the presentation and disclosure. However, these standards still have a wide range from alternatives in choosing among accounting methods and policies (Al-Shehadeh et al. 2011). This flexibility allows the management to manipulate the business results to achieve their own benefits and to report earnings that reflect the management desires and meet their interests through earnings management practices. This allows concealing or modifying certain activities which



are consistent with management objectives, thus, these practices may mislead the users of financial statements in evaluating the actual performance and profitability of banks (Kin Loa et al. 2017).

Ronen (2008) defined earnings management as the management's behavior to influence the earnings reported in the financial statements without achieving economic advantages, which may lead to harm to the company's future in the long run. The researchers presented many reasons that management seeks to achieve from practicing earnings management. For example, Aya and Sunder (2003) believe the management seeks to meet the expectations of the shareholders and financial analysts about the company's performance in order to maximize the market price of its share and then maximizing the incentives they receive. In addition, Athanaskon and Walker (2009) believe that management uses earnings management as a tool to inform the users of published financial statements about their own expectations regarding the company's future cash flows which are used to determine the market value of the company.

Abu Ajila and Emad (2007), and Reitenga and Tearny (2003) believe that earnings management is practiced by the corporate managers who are seeking to achieve their personal interests, within the agency relationship that arises due to the separation between the management and the owners of the entity, therefore, the contract is created to manage such relationship in term of financial benefits they receive based on the performance of the bank.

Makee (2005) believes that the management seeks by practicing earnings management to reduce the level of fluctuations that occur in the periodic earnings in order to limit the risk surrounding the opportunities of achieving such earnings. This would provide continuity feature to those earnings, which are positively reflected on the quality of earnings and then on their market share price.

## ***2.2 Review of Empirical Literature***

The empirical literature provided fundamental evidence about bank profitability measures. Empirical studies have also examined several macroeconomic determinants (GDP, per capita GDP, inflation, and financial crisis) that significantly affected banks' profitability (Bekhet et al. 2021). Many studies focused on a panel of countries and a specific country. However, some studies made distinctions between developed and developing economies (Bekhet et al. 2020).

The purpose of the study conducted by Asadullah (2017) was analyzed the determinants of Islamic banks of Pakistan. The author collected data from five Islamic banks of Pakistan over ten years from 2006–2015. The study found that two variables were significant at 5% i.e., the Islamic banks' size and liquidity. Liquidity has positive whereas size has a negative impact on the profitability of Islamic banks. Lo et al. (2017) examined how the annual reports' readability varies with earnings management. They pointed out that companies most likely to have earnings management to beat the previous year's earnings have management discussion and analysis

that are more complex. The overall disruption of the pattern of readability increasing with the earnings level as documented by Li (2008). In addition, Li has also another explanation that good news is easier by nature to communicate and explains that confusion contributes to making information disclosures more complex.

Aslam et al. (2016) determined the key determinants that influence the Islamic banks' profitability in Pakistan for the period of 2007 to 2014. Such determinants are classified in general into three key groups. Industry-specific, internal factors, and external factors. Market share is industry-specific, internal factors are Bank-specific, whereas external factors are Macroeconomics. The study concluded that the determinants of both ROE and ROA are not the same. But the factors employed in the study have the same effect on the profitability both for ROA and ROE. Deposits, size, financing, GDP, share, and Inflation are the factors that have an insignificant relationship with ROA and ROE. Financing, size, and market share have a positive effect both for ROA and ROE, whereas GDP, deposits, and Inflation associated negatively with ROA and ROE. The purpose of the study conducted by Hamdan and Hussein (2016) was to identify the key factors affecting the profitability of the Syrian banks during the period (2009–2015). The most important results were there is no statistically significant relationship between the profitability of the banks measured by the ROE and ROA, cash flow, equity, and net interests.

Some studies aimed to investigate the effect of internal and external factors on bank's profitability for Islamic banks in GCC countries (Al-Damir 2014) and commercial banks in Jordan (Bekhet 2020). Three measurements used for profitability in Islamic Banks in GCC namely, ROA, ROE, and net interest margin (NIM). It was reported that management efficiency, loan, and GDP have positive and significant relationships with ROE. Besides, the asset management, capital and inflation have a positive impact on the three profitability measurements: ROA, ROE, and NIM. while the size has a negative impact on a bank's profitability (Al-Damir 2014). On the other hand, the study conducted by Gul et al. (2011) sought to examine the relationship between bank-specific and macroeconomic characteristics over bank profitability by using data of top fifteen Pakistani commercial banks over the period 2005–2009. The empirical results have found strong evidence that both internal and external factors have a strong influence on profitability. The results of the study are of value to both academics and policymakers.

From the results of the previous studies that mentioned in the related literature, the current study seeks to achieve the research objectives and answering the research questions. Thus, the following research hypotheses were formulated:

- H<sub>1</sub>: There is a significant relationship between return on deposits and earnings management in Jordanian commercial banks.
- H<sub>2</sub>: There is a significant relationship between return on investment and earnings management in Jordanian commercial banks.
- H<sub>3</sub>: There is a significant relationship between return on equity and earnings management in Jordanian commercial banks.
- H<sub>4</sub>: There is a significant relationship between earning per share and earnings management in Jordanian commercial banks.

- H<sub>5</sub>: There is a significant relationship between firm size and earnings management in Jordanian commercial banks.
- H<sub>6</sub>: There is a significant relationship between debt ratio and earnings management in Jordanian commercial banks.

### 3 Data and Research Methodology

The empirical approach has been used based on the financial statements of the Jordanian commercial banks for the years (2013–2019). Regression analyses and descriptive approaches are used in order to test the research hypotheses and to answer the research questions as well. The methodology of this study is based on testing the relationship between profitability measures and earnings management in Jordanian commercial banks. In addition, the role of bank size and the debt ratio of the bank on earnings management is tested as well to provide a comprehensive overview of the nature of the relationship between the variables of the study. The rise of extraordinary accruals and the reduction of total accruals are used as an indicator for earnings management practices.

Figure 1 illustrates the research framework and variables of the study which was developed through a comprehensive analysis of previous studies in this research area.

The abovementioned research framework illustrates the research variables based on the large set of previous research such as Hamdan and Abu Ajila (2012), Noor

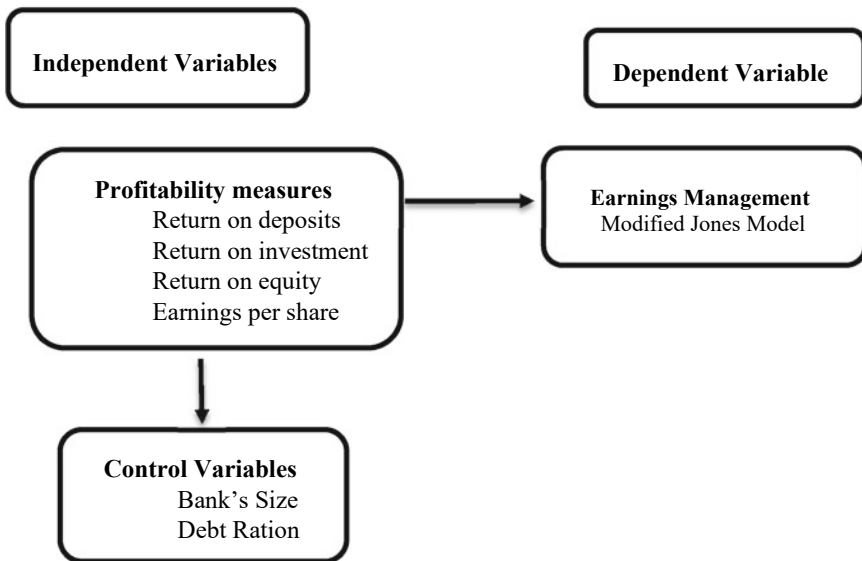


Fig. 1 Research framework

and Al-Awawdeh (2017), Richardson, Sloan, Soliman, and Tuna (2005), and Dechow and Dichev (2002). Numerous researches, such as (Francis 2002), Bellovary, Don, and Michael (2005), Jain and Rezaee (2004), Fadzil and Ismail (2014), and Abu Ajila and Sharif (2009) concluded that the increase of the extraordinary accruals is an indicator of the existence of earnings management practices and the reduction of total accruals indicates high earnings quality. According to the result of Jean et al. (2004) who suggested that the Jones Model of (Jones 1991) that modified by Dechow and Dichev (2002) deemed as the strongest model among other models used to detect the earnings management practices.

The current research uses data of commercial banks operating in Jordan over the period (2013–2019). The current paper used the financial information which is available in the banks' annual reports. Also, it focused on the largest five commercial banks are operating in Jordan as a research sample, according to the Central Bank of Jordan website; these are Jordan Ahli Bank, Bank al Etihad, Housing Bank, Cairo Amman Bank, and Bank of Jordan. This study focused on these five banks because it's the largest commercial bank operating in Jordan and thus this allows to generalization of the research findings. This leads to 35 banks' observations during the research period started from 2013 to 2019.

## 4 Analysis and Research Findings

Before conducting the regression analysis, this study tests the regression assumptions in order to make sure that the research data is free from any serious problem that may affect the results. Accordingly, to test whether the outliers have any serious effect on the whole research model, Cook's Distance value was checked and any cases with a value of more than 1 are a potential problem as mentioned by Tabachnick and Fidell (2007). In this paper, the finding pointed out that the maximum value of Cook's Distance is 0.120. Therefore, based on this statistic, the assumption of outliers is met and there is no outliers' problem in this paper.

The second assumption that examined in this paper is Normality. It refers that the error or (residual) is normally distributed, and it's used in this study in order to test the valid hypotheses as mentioned by Hair, Black, Babin, Anderson, and Latham (2010). This test was done by determining the ratios of Skewness and Kurtosis. The values of kurtosis should be lower than 10 and the value of skewness should be lower than 3 as mentioned by (Kline 1998). As shown in Table 1, all values of skewness kurtosis were in the acceptable range and the data are considered reasonably normal. Therefore, the normality assumption is not violated.

The main aim of examining linearity assumption is to check the linear relationship between independent and dependent variables in the research model. In addition, the term of correlation is based on a linear association, thus, this is the reason that making it a stringent issue in the analysis of regression (Hair et al. 2010). The standard deviation of the dependent variable with the standard deviation of the residuals must be compared in order to test the linearity assumption (Hair et al. 2010). Additionally,

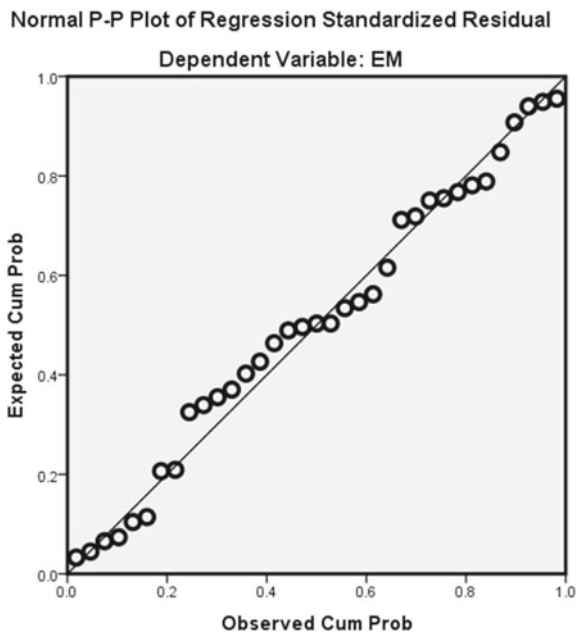
**Table 1** Normality test

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. error	Statistic	Std. error
ROD	35	1.876	0.398	1.408	0.778
ROI	35	-0.709	0.398	-0.256	0.778
ROE	35	-0.336	0.398	0.188	0.778
EPS	35	0.425	0.398	-0.557	0.778
EM	35	-0.427	0.398	-1.932	0.778

an examination of the scatter plots in (Fig. 2) showed that such a relationship is not clear, which means no violation of the linearity assumption. The main aim of examining linearity assumption is to check the linear relationship between independent and dependent variables in the research model. In addition, the term of correlation is based on a linear association, thus, this is the reason that making it a stringent issue in the analysis of regression (Hair et al. 2010). The standard deviation of the dependent variable with the standard deviation of the residuals must be compared in order to test the linearity assumption (Hair et al. 2010). Additionally, an examination of the scatter plots in (Fig. 2) showed that such a relationship is not clear, which means no violation of the linearity assumption.

The Pearson Correlations matrix that shown in Table 2 indicates that the highest level of correlation was between return on equity and return on investment at

**Fig. 2** Normal P-P plot of regression stand (DV: EM)



**Table 2** Pearson correlation coefficients between all included variables

	EM	ROD	ROI	ROE	EPS
EM	1				
ROD	0.157	1			
ROI	-0.268	-0.106	1		
ROE	-0.517**	-0.185	0.886**	1	
EPS	0.009	-0.187	0.682**	0.701**	1

Note: \*\* show the significance level at 5%

0.886, and between earnings per share and return on investment at 0.682. Therefore, according to Hair et al. (2010) and Tabachnick and Fidell (2007).

A problem of multicollinearity occurs if the correlation between independent variables exceed 0.9. These results refer that multicollinearity is not a problem in this research model.

#### 4.1 Descriptive Statistics

Table 3 shows the descriptive analysis for 35 observations of commercial banks that met the necessary data for the years 2013 to 2019. The average value of the EM is 60%. This value is higher than the average of Nawaiseh (2016) who documented that the average value of EM of thirteen Jordanian banks was 41.5%. This refers that the majority of Jordanian banks practice earnings management in their financial statements. Descriptive analysis shows the average and standard deviations for both independent and dependent variables. The current research uses descriptive statistics in order to transform the data into meaningful interpret. The output of the descriptive table below describes the dispersion of the data of the selected banks.

**Table 3** Descriptive statistics

	N	Minimum	Maximum	Mean	Std. deviation
EM	35	0.00	1.00	0.6000	0.49705
ROD	35	1.00	6.67	1.9980	0.92851
ROI	35	0.22	2.05	1.3656	0.45476
ROE	35	2.07	16.37	10.1223	3.23714
EPS	35	0.04	0.52	0.2617	0.12489

**Table 4** Model summary

N	Adj. R <sup>2</sup>	F value	Model Sig.	Durbin-Watson
35	0.595	13.509	0.000	1.780

**Table 5** Regression analysis

Variables	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std. error	Beta		
ROD	0.033	0.060	0.062	0.553	0.584
ROI	0.744	0.265	0.681	2.812	0.009
ROE	-0.241	0.038	-1.567	-6.300	0.000
EPS	2.606	0.623	0.655	4.185	0.000

## 4.2 Model and Hypotheses Test

Table 4 below shows that the research model is statistically significant based on the value of ( $F = 13.509$ ;  $Sig.000$ ). The results also show that the adjusted  $R^2$  for the research model was 0.595, this value implies that the model explained 59.5% of the variation of earnings management in Jordanian banks. These results indicate the research model provides an optimal compensation of variables that contributes positively to explaining the variance in earnings management.

In attempting to fulfill the objectives of the paper, research hypotheses were developed and presented previously. The results of multiple regression analysis among the independent and dependent variables are shown in Table 5 below.

As seen from Table 5, the return on deposit (ROD) has a positive direction as predicted and it is not statistically significant at 5% ( $t = 0.553$ ,  $P = 0.584$ ). The evidence shows that the ROD contributes positively to earnings management. This result has been supported by Tarawneh (2006) who document that the higher total deposits do not always mean that has better profitability performance. This result refers in one way or another that the deposit may not have a direct relationship with the earnings management, which supports the result of the current study.

As for Return on investment (ROI), the regression analysis shows that it has a positive and significant association with earnings management ( $t = 2.812$ ,  $P = 0.009$ ). This result is consistent with the research hypothesis that stated the (ROI) deemed as a motivation to corporate managers to practice earnings management. This result has also confirmed by Sayari et al. (2013) who documented that discretionary accrual allows investors to better evaluate the firm value and thus positively affect their investment return.

The third research hypothesis stated that the return on equity (ROE) has a positive and significant effect on earnings management. Through the regression analysis, the statistics show that this relationship is negative and significant based on the values of

( $t = -6.300$ ,  $P = 0.000$ ). Such results are against our expectation despite that some previous research has been supported such kind of relationship such as Cheng and Warfield (2005) who pointed out that the return on equity and equity incentives lead to encourage earnings management practices.

The relationship between earnings per share and earnings management is the last research hypothesis tested in the regression model. The analysis of regression shows that this relationship has a positive and significant influence on earnings management due to the values of ( $t = 4.185$ ,  $P = 0.000$ ). This result is also supported by Di et al. (2012) who reported that the firms manage discretionary accruals to mitigate the effect of temporary EPS.

## 5 Conclusion

The objective of this study is to examine the influence of profitability measures, namely, return on deposits (ROD), return on investment (ROI), return on equity (ROE) and earnings per share (EPS) on earnings management in Jordanian commercial banks from 2013 to 2019. This paper is a complement to the past studies. The results were extracted by analyzing the data showed that there is a positive and significant relationship between the ROI and EPS with earnings management. This can help the stakeholders to be aware of the actual level of bank's performance. The findings also showed that there is an inverse significant relationship between ROE and earnings management, while it showed that there is a positive relationship, but it is not significant between the ROD and the earnings management.

The current study is limited to the Jordanian commercial banks, where prospective studies can benefit from the current research model and the results of the current study by highlighting the industrial or service companies whether in Jordan or in another developed economy countries.

## References

- Abu Ajila, E., Sharif, I.: The relationship between the quality of profits and the institutional governance. A Research Presented to the 7th International Scientific Conference of the College of Business Administration; The Implications of the Global Economic Crisis on Business Organizations. Zarqa University, Amman (2009)
- Abu Ajila, E.: The impact of audit quality in reducing earnings management: a guide from Jordan. *Arab J. Adm. Sci.* **14**(3), 69–126 (2007)
- Al-Damir, N.: Factors affecting the profitability of Islamic banks in GCC countries. Master's thesis, University Utara Malaysia (2014)
- Alpaslan, Y.: Big four auditors' audit quality and earnings management: evidence from Turkish stock market. *Int. J. Bus. Soc. Sci.* **4**(17) (2013). [Special Issue]
- Al-Qathami, F.S.: Earnings management in Saudi joint stock companies. *J. Fac. Commer. Sci. Res* **47**(01) (2010)



- Al-Shehadeh, A., Sha'aban, O., Qasim, A., Barghouthi, S.: Accounting Theory. Dar Zamzam Publishing and Distribution, Amman (2011)
- Al-Sraheen, D.A.-D., Alkhatib, K.: Proposing a model for limiting earning management practices: the case of Jordanian listed firms. *Corp. Board Role Duties Compos.* **12**(3), 81–84 (2016). <https://doi.org/10.22495/cbv12i3art9>
- Al-Sraheen, D.A.-D., Saleh, I.H.: Does the monitoring mechanisms considered as dilemma against the practices of earnings management? *Int. Bus. Res.* **10**(10), 39–44 (2017). <https://doi.org/10.5539/ibr.v10n10p39>
- Aslam M.K., Inamullah, Ismail M.: Determinants affecting the profitability of Islamic banks: evidence from Pakistan. *Int. J. Oper. Logistics Manage.* **5**(2), 115–127 (2016)
- Athanaskon, V., Walker, M.: Earnings management or forecast guidance to meet analysts' expectations. *Acc. Bus. Res.* **39**(1), 3–35 (2009)
- Aya, A., Sunder, S.: Are unmanaged earnings always better for shareholders? *Acc. Horiz.* **17**(2), 111–126 (2003)
- Basha, I.: Profitability of commercial banks. *J. Arab Banks Beirut* (80) (1997)
- Bellovary, J., Don, E., Michael, D.: Earnings quality: it's time to measure and report. *CPA J.* **75**(11), 32–37 (2005)
- Bekhet, H.A., Alsmadi, A.M., Khudari, M.: Dynamic linkages between profitability and its determinants: empirical evidence from Jordanian commercial banks. *J. Asian Financ. Econ. Bus.* **8**(6), 0687–0700 (2021). <https://doi.org/10.13106/jafeb.2021.vol8.no6.0687>
- Bekhet, H.A., Alsmadi, A.M., Khudari, M.: Effects of internal and external factors on profitability of Jordanian commercial banks: panel data approach. *Int. J. Financ. Res.* **11**(5), 359–375 (2020). <https://doi.org/10.5430/ijfr.v11n5p359>
- Beneis, K.W., Hand Brozovsky, J.A.: Ethical of management earnings working paper. Virginia Polytechnic Institute and State University (2002)
- Central Bank of Jordan (CBJ). Central Bank annual report 2020. <https://www.cbj.gov.jo/EchoBusV3.0/SystemAssets/193be58a-0aa5-41d8-b1dc-57f3715805f4.pdf>
- Cimini, R.: How has the financial crisis affected earnings management? A European Study. *Appl. Econ.* **47**, 302–317 (2015)
- Cheng, Q., Warfield, T.D.: Equity incentives and earnings management. *Account. Rev.* **80**(2), 441–476 (2005)
- Daoud, K., Al-Sraheen, D., Alshehat, N.: The moderating effect of an audit committee on the relationship between non-audit services and corporate performance. *Res. J. Financ. Account.* **6**(14), 170–179 (2015)
- Dechow, P.M., Dichev, I.: The quality of accruals and earnings: the role of accrual estimation errors. *Account. Rev.* **77**(1), 35–59 (2002)
- Dekan, O.: Definition Questions (Profit- Profitability). 4th, Aspects and Visions of Applied Economics and Informatics (2009)
- Di, H., Marciukaityte, D., Goodwin, E.A.: EPS dilution after SEOs and earnings management. *Manag. Financ.* **38**(5), 485–507 (2012)
- Domash, H.: Spot accounting red flags the easy way (2005). [www.winninginvesting.com](http://www.winninginvesting.com)
- Fadzil, F.H., Ismail, S.S.B.S.: Does corporate governance matter? Evidence from accounting conservatism practices among Jordanian listed companies. *Int. J. Learn. Dev.* **4**(4), 64–80 (2014)
- Francis, J., LaFond, R., Olsson, P., Schipper, K.: The market pricing of earnings quality (2002). <http://ssrn.com/abstract=414140>
- Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E., Latham, R.: *Multivariate Data Analysis*, 7th edn. Pearson, New Jersey (2010)
- Hamdan, A., Abu Ajila, E.: Quality of auditing in Jordan and its impact on management and quality of profits. *Arab J. Account.* **15**(1), 158–184 (2012)
- Hamdan, M., Al-Hussein, B.: Factors affecting the profitability of private banks in syria, an empirical study. *Al-Baath Univ. J.* **38**(33) (2016)
- Hammad, T.: *Evaluation of Commercial Banks Performance - Risk and Return Analysis*. Alexandria University Press House, Egypt (2010). Part 3

- Hammad, T.: *Corporate Governance Concepts, Principles and Experiences of Corporate Governance Applications in the Banks*. University House, Alexandria (2005)
- Jain, P., Rezaee, Z.: *The Sarbanes-Oxley Act of 2002 and accounting conservatism* (2004). <http://ssrn.com/abstract=554643>
- Jones, J.: Earnings management during import relief investigations. *J. Account. Res.* **29**(2), 193–225 (1991)
- Kin, L., Felipe, R., Rafae, R.: Earnings management and annual report readability. *J. Account. Econ.* **63**(1), 1–25 (2017)
- Kline, R.B.: *Principles and Practice of Structural Equation Modeling*. Guilford Press, New York (1998)
- Li, F.: Annual report readability, current earnings, and earnings persistence. *J. Account. Econ.* **45**(2–3), 221–247 (2008)
- Lo, K., Ramos, F., Rogo, R.: Earnings management and annual report readability. *J. Account. Econ.* **63**(1), 1–25 (2017)
- Makee, T.: *Earnings Management, An Executive Perspective*. Mason O.H. Thomson (2005)
- Asadullah, M.: Determinants of profitability of Islamic banks of Pakistan – a case study on Pakistan’s Islamic banking sector. In: *International Conference on Advances in Business Management and Law*, ICABML 2017 Conference Brochure, vol. 1, no. 1. University of Dubai (2017)
- Nawaiseh, M.E.: Impact of external audit quality on earnings management by banking firms: evidence from Jordan. *Br. J. Appl. Sci. Technol.* **12**(2), 1–14 (2016). <https://doi.org/10.9734/BJAST/2016/19796>
- Noor, A-N., Al-Awawdeh, H.: Earnings management and its impact on the quality of accounting profits: a test study on Jordanian industrial public shareholding companies. **13**(2), 161–179 (2017)
- Reitenga, A., Tearny, M.: Mandatory CEO retirements, discretionary accruals and corporate governance mechanisms. *J. Acc. Audit. Financ.* **18**(2), 255–280 (2003)
- Richardson, S., Sloan, R., Soliman, M., Tuna, I.: Accrual reliability earnings persistence and stock prices. *J. Account. Econ.* **39**(3), 473–485 (2005)
- Ronen, Y.: *Earning Management, Emerging Insights in Theory, Practice & Research*. Springer, New York (2008). <https://doi.org/10.1007/978-0-387-25771-6>
- Salman, E.: The Use of financial ratios in determining the factors affecting the profitability of commercial banks, applied research in the commercial banks. *J. Econ. Sci.* **8**(32) (2013)
- Sayari, S., Omri, A., Finet, A.: The impact of earnings management on stock returns: the case of Tunisian firms. *Glob. J. Manag. Bus. Res.* **13**(10) (2013)
- Gul, S., Irshad, F., Zaman, K.: Factors affecting bank profitability in Pakistan. *Roman. Econ. J.* **39**, 61–87 (2011)
- Tabachnick, B.G., Fidell, L.S.: *Using Multivariate Statistics*, 5th edn. Pearson Education, Boston (2007)
- Tabassum, N., Kaleem, A., Nazir, M.S.: Real earnings management and future performance. *Glob. Bus. Rev.* **16**(1), 1–14 (2015)
- Tarawneh, M.A.: Comparison of financial performance in the banking sector: some evidence from Omani commercial banks. *Int. Res. J. Financ. Econ.* **3**(3), 101–112 (2006)
- Walter, A., Peng, C., Ann, T.: Management’s earnings justification and earnings management under different institutional regimes. *Corp. Govern. Int. Rev.* **21**(1), 93–115 (2013)
- Zang, A.: Evidence on the trade-off between real activities manipulation and accrual based earnings management. *Account. Rev.* **87**(2), 675–703 (2011)

# Study of Impact of Dematerialization of Shares on the Indian Stock Market



Shreya Bhadra and Ashok Chopra 

**Abstract** In the modern world, the stock market plays a crucial role in the country's economic development and is amongst the most versatile sectors in the country's financial system. It provides a platform for investors to trade shares, bonds, and debentures and allows the companies to raise the much-required funds to boost their business. In this way, the stock market plays a crucial role in enhancing the country's industry and commerce growth. The reason for selecting this topic is that the Indian Share Market has grown unprecedented after the introduction of Dematerialization by the government of India in the mid – 90's. Hence, to study how the Dematerialization and electronication of shares have shaped the tremendous growth and potential of the Indian Stock Market became an interesting study to explore its various possibilities. The journey traces the growth of the Indian Stock Market from its humble beginning with just a few traders to the globally competitive and colossal stock market of the present day. Currently, the Indian Stock Market boasts of having 5 70 000 traders and a total market capitalization worth 2.27 trillion dollars, leading to becoming the world's 11th largest stock exchange. This paper explores the multiple benefits that they share trading industry gained as a result of Dematerialization.

**Keywords** DEMAT · Dematerialization of shares · Indian Stock Market · Impact · Study

## 1 Introduction

### 1.1 Meaning

A stock market is a platform where a collection of buyers and sellers of stocks or shares of various companies across the world buy and sell these shares. Such markets or exchanges may also include the issuance of new shares or securities of private companies. In short, stock markets are where individual and institutional investors

---

S. Bhadra · A. Chopra (✉)  
Amity University, Dubai, United Arab Emirates  
e-mail: [achopra@amityuniversity.ae](mailto:achopra@amityuniversity.ae)

come together to buy and sell shares in a public setting. Currently, the exchanges are in the form of electronic marketplaces.

## ***1.2 How it Started in the World***

Stock Exchanges came into being when nations in the new world started trading with one another, and the demand for commodities and capital required to produce and transport them grew. Since a single merchant could not raise such enormous amounts of capital required to start such large ventures, these traders and merchants pooled in their wealth and became business partners and co-owners in their businesses.

## ***1.3 Idea Generation***

### **C How It Started In the World**

Started by the Dutch, the joint-stock companies became a suitable business platform/entity. Consequently, the Dutch East India Company issued the first paper shares in the year 1602, thus enabling the shareholders to buy, sell and exchange their stock with different investors and shareholders.

The share trading volume increased with time, and the requirement for an organized share market became imperative.

In 1773, the stock traders who had started using the London Coffee House as a marketplace modified its name, and thus, the London Stock Exchange got established. The Americans soon incorporated this idea, and the Wall Street Market got opened on May 17, 1782. This group later changed its name to New York Stock and Exchange Board and played a significant role in defining the world's economic future.

Currently, there are many stock exchanges in the world, including the Indian Stock Market.

## ***1.4 Indian Stock Market***

Share Trading in India traced back to the eighteenth century when the East India Company started trading loan securities. The Stock Exchange was initialized in India casually and straightforwardly in the 1850s when 22 stockbrokers started trading opposite the Townhall of Bombay under a banyan tree still there and known as the Horniman Circle. The same then shifted to banyan trees at what is now known as Mahatma Gandhi road. Furthermore, this shift continued as the number of brokers kept increasing, and finally, in 1874, they settled at Dalal Street. This non-formal group known as the native share and stockbrokers association organized itself as the Bombay Stock Exchange in 1875. It is the oldest stock exchange in Asia and the

first to be granted permanent regulation under the Securities Contract Regulation Act 1956. The Ahmedabad Stock Exchange followed in 1894 with its primary focus of trading in shares of textile mills.

Calcutta Stock Exchange started operations in 1908, mainly trading shares of plantations and jute mills. The Madras Stock Exchange took birth in 1920.

However, the need for a financial market regulator in the post-independence period highlighted the Transparency and undependable clearing and settling systems. Hence SEBI was formed in 1988 and turned into a statutory body in 1992.

## ***1.5 SEBI***

“The Securities and Exchange Board of India assumes the role of a regulator set up in 1988, assumes the role of a regulator of the Securities and Commodities market in India.” SEBI was further invested with statutory powers by the SEBI ACT of 1992, which attributed some legislative, judicial, and executive powers to it.

## ***1.6 National Stock Exchange***

There was an urgent need for another such stock exchange that would be big enough to compete with BSE and increase Transparency in the stock market, especially after the Harshad Mehta scam in 1992. The same resulted in the formation of the National Stock Exchange, which initially was set up by a group of leading Indian Financial Institutions at the behest of the government of India. It was the first to introduce electronic trading. Furthermore, to counter this competition, the Bombay Stock Exchange also introduced BOLT (BSE- ONLINE TRADING) in 1995. Thus the settlement to electronic depository-based accounts. As a result, it increased the efficacy and Transparency of the stock exchanges as settlement of trades was always done on time.

## ***1.7 Format of Trading in Early Days***

In the earlier times, the format for Stock Trading was that all traders would purchase and sell stocks to the person on the exchange floor. It was a very disorganized and noisy experience. It also involved hand-delivering stock certificates or money to the respective brokers to settle each trade official. However, due to the development of computer technology, stock trading has undergone a sea change in modern times. Brokers and stock traders do not have to be physically present on the stock exchange floor but, in the current times, can do so digitally from the comfort of their desks.

## **1.8 The Modern Stock Market**

In modern times, most security transactions first got recorded electronically using a process known as a book entry. Moreover, account statements provide the backup for electronic trades. A settlement period, however, remains in place. The shift from paper-based to an electronic system has increased the efficiency of the stock market trading as it leads to faster order execution, reduces the possibility of human error, and provides a better capacity to research the latest news or company information.

## **1.9 Drawbacks**

As is true for almost everything with a good side, there are a few drawbacks associated with Dematerialization despite its immense benefits. Importantly it is mandatory to open a Demat account in order to indulge in share trading. Most banks and most brokers charge an annual maintenance fee for maintaining the Demat account of a client. Such charges may vary from one broker to another, and there are few stock-brokers or banks which promise a lifetime free Demat account, but generally, they recover these charges under some other hidden heads.

## **2 Literature Review**

The Indian Share Market progressed by leaps and bounces in the last few decades and the volume of shares traded increased immensely. Often truckloads of share certificates would arrive at the NSE and BSE clearinghouses. On an experimental basis, the regional clearing corporation was tried out but was unsuccessful because the major problem lay in the transportation of physical shares. Hence, the introduction of Demat, which converted physical shares into electronic form around 1994–95, was a revolutionary move/step that changed the nature and functioning of the Indian Stock Market forever. The introduction of innovative techniques – the electronication and Dematerialization of shares in the mid-'90 s transformed the Indian Share Market forever and for the better.

(Kumar and Yasir 2018) Although physical share certificates carried unprecedented numbers, the companies were guilty of pledging one set of shares with the money lenders and borrowing money against them. At the same time, they would print another lot of share certificates with the same distinctive numbers and launch them in the market through some friendly brokers or one of their privately-owned companies. The companies would rest assured that the original set of shares was in the custody of the lenders as long as there was no default on their interest payments.

(Harshit and Yadav 1996) Mentioned that the establishment of NSDL was made possible by the enactment of the Depositories Act in August 1996. There were two

options before NSDL. One was to go for immobilization like the USA, where the physical share certificates remained with the depositories in its vault, which acknowledged these shares and made an electronic entry. The second option which India opted for, following Japan, was the Dematerialization of shares. However, as the NSDL went about its mission, it faced three problems. The first was to convince the companies to allow the shareholders to hold their shares in Demat form. Creating an extensive network of depository participants by making banks and brokerages their agents was their second problem. Finally, the third problem was to persuade their investors to hold their shares electronically.

Dr. Surendar G, Assistant Professor - Business Management, explained that some of the benefits of Dematerialization were that instances of fake shares came to light, which may otherwise have gone unnoticed.

## ***2.1 Why Investing in Mutual Funds has the Edge Over Stock Trading***

The Author noted that stock markets worldwide had witnessed a tremendous boom in the last two decades. More so because the banks' interest rate on term or fixed deposits has reached such a low level that people are looking for alternative areas of investment from where they can get a better return. Investing, however, can be quite a complicated process since one has to choose from a variety of options, such as stocks, bonds, real estate, money market a/c. Though investing in stocks may seem to be a more attractive option compared to bank deposits, the risk factor also increases significantly. Each fund has a professional money manager whose responsibility is to generate income for the investors by allocating the fund's assets. As per the staff report from <https://www.investopedia.com/ask/answers/05/062305.asp>, mutual funds provide a more attractive investment option than stock trading because of diversification, convenience, and lower cost.

Diversification – Investment in the share market is risky because it consists of systematic and unsystematic risks. Investing in an individual stock is riskier than a mutual fund, and this kind of risk is known as unsystematic risk. <https://www.coursehero.com/file/48757160/The-importance-of-Diversification-INVESTOPEDIA-INVESTINGdocx/>. An investor who owns just one stock carries company risk that may not apply to other companies in the market. For example, the company may suffer setbacks if the CEO or top managers of the company leave unexpectedly.

The balance risk, however, remains, and this is known as systematic risk or market-wide risk. <https://economictimes.indiatimes.com/wealth/invest/stock-market-hit-by-coronavirus-reasons-for-turmoil-what-equity-investors-should-do-now/articleshow/74623291.cms> States that fluctuations in the share market due to natural disasters, pandemics cannot be prevented or predicted. Hence mutual funds cannot protect their investors from such risks.

Individual investors cannot diversify their portfolios by investing in a wide variety of stocks unless they have a large amount of capital at their disposal. Hence mutual funds provide such investors with the advantage of stock diversification. The other advantage is that it is convenient to opt for mutual funds rather than buying individual shares <https://www.investopedia.com/articles/stocks/08/questions-for-management.asp>. These are some of the reasons why investors may choose Mutual funds over direct stock trading [www.ijarcsms.com](http://www.ijarcsms.com).

## ***2.2 Factors Affecting Trading Volume***

Explained some of the essential factors that affect share trading volume. Apart from the stock price, the other factors that affect the volume of shares traded are liquidity, manipulation in the market and traders (artificial buying and selling of stocks for higher profits), previous returns and portfolios of investors, and news and media reports. (Wang 2008) Advanced economic models that showed the correlation between asset prices and volume, backed by empirical studies. <http://ijarcsms.com/docs/paper/volume2/issue3/V2I3-0012.pdf> Furthermore, others also empirically modeled and determined that large turnovers happened during times of substantial absolute price change, although much significance could not create for the direction of this price change. Markus Glaser and Weber (2005) analyzed the effect of past market returns and past portfolio returns on the trading activities of individual investors. “The study finds that liquidity-based price movements typically related to higher trading volume can be transmitted across borders and have a global impact on stock market performance. (Trading 2008) Explained how the weekly volume of trade affects the changes in stock prices. (Steven 2003) Suggested in their study that behavior factors also affected investors trading decisions in equity markets. (Shahzad 2019) Suggested that weather affects the stock returns and the localized trading behaviors.

## **3 Research Methodology**

### ***3.1 Significance of Study***

The share market has witnessed unprecedented growth in the last couple of decades. The volume of share trading has reached mind-boggling figures. Hence it becomes relevant to study the relevant causes that led to this tremendous growth of shares in securities. The emergence of computerization, complemented by the introduction of the internet and online trading, has also been crucial in enhancing the share market boom. Therefore, it is of great significance to study the impact of Dematerialization and eletronication of shares in the stock exchanges.



### **3.2 *Research Objective***

1. To assess the current scenario of paperless trading on the volume of trade and its limitations.
2. To examine the effect of the Dematerialization of shares in the Indian Stock Market and analyze its integration with the world market.
3. To study the impact of Dematerialization and electronification on cost and Transparency.
4. How the process of Dematerialization and electronification of shares in the Indian Stock Market has led to a reduction in customer complaints and improved reprisals in the stock trading systems.

The study aims to focus on the impact of Dematerialization on the Indian Stock Market.

### **3.3 *Research Methodology and Data Collection***

The type of research undertaken by the Author is explanatory research. The objective of explanatory research is to discuss the causes and effects of a well-defined problem. The Author's research objective is to study the consequences of the techniques of Dematerialization and electronification of shares introduced in the Indian Stock Exchange in the mid-'90 s on the volumes traded in the Indian Stock Market. The research may also be considered deductive to a certain point. The Author attempted to delve into the existing theory and develop particular insights from the findings based on those theories.

A researcher has made use of primary as well as secondary data in the research project. The researcher used primary data gathered through interviews using a questionnaire form from stockbrokers who have been dealing in shares for a long time. The researcher used secondary data to analyze how the volume of shares traded in the Indian Stock Market has changed after implementing Dematerialization and electronification of shares. The Author has availed the data already existing in the annals of the Indian Stock Market.

### **3.4 *Qualitative Method***

#### **a) *Interviews***

The researcher conducted interviews with stockbrokers of different Kolkata firms who have had long experience in stock trading. Due to the ongoing pandemic, the whole world, as well as India, is under lockdown. Unfortunately, the Author resides in Kolkata, under complete lockdown, when major shut down except pharmacies. Since we fall under the red zone where the number

of cases for Covid-19 is very high, the Author could not conduct interviews or personally collect data as all establishments and means of transportation were closed. The Author somehow discussed with friends and family members associated with the share market with no other means. The Author short-listed four firms/brokers with whom Author interacted through video conferencing, conducted the interviews, and gathered the necessary information and data.

The Author's interview technique by designing specific questions for them worked.

- I) **Telephonic Interview:** A specific time was set in the week to conduct the question-answer session with the respondents one by one.

At certain times, for a couple of topics, the telephonic interview was conducted with more than one respondent at the same time via telephonic conferencing to get a collective opinion of their viewpoint on the subject at the same time.

- II) **Video Conferencing:** Due to the complexity of specific topics, some were discussed via video conferencing to understand better and break down the topics in simple components so that judgments offered from their experience captured sub-topics relating to the main topic the Indian Share Market.

Each interview lasted for 30–40 min, and their answers the recorded through emails.

b) **Questionnaire**

Since the topic selected is vast, the questionnaire could not be limited to an MCQ format. The Author used the Case study method too.

The questionnaire covered topics relating to

the practice of paper-based trading settlement in India before the dematerialization phase.

The volumes affected in the transition period of Dematerialization.

Ease of stockbroking due to Dematerialization for brokers and broking houses.

The pros. and cons of Demat.

The innovations in the stock market during their career span.

How the cost and transparency levels were affected due to the introduction of Demat.

The other factors apart from Demat that have been affecting stock trading volumes.

The difference in customer's satisfaction compared to the past.

### ***3.5 Interpretation of Collected Data***

- a) **CASE STUDIES:** The data collected under various headings were combined relevantly to form 4 case studies, namely;

Cost And Transparency of the share market after Dematerialization – which included data from the above point.

Ease And Efficiency of Share Trading after Dematerialization – which includes data from all mentioned above.

- The role of mutual funds in the Indian Share Market – Data collected through telephonic and video discussions.
- Role of Foreign Institutional Investors in the Share Market - Data collected through previous research papers of University Professors.

### ***3.6 Research Methodology***

Refers to the set of particulars and techniques used to identify and select the research topic and the processes involved in collecting, assembling, analyzing, and evaluating the data and information about the selected topic. Surveys, questionnaires, and interviews are the standard tools of research. The research methodology helps the reader to assess the overall validity and reliability of the research study.

The Author used primary and secondary data collection through questionnaires, telephonic interviews, data obtained from expert’s opinions, and secondary data such as qualitative and quantitative data analysis, data reliability, data software.

### ***3.7 Research Design***

The research design refers to the framework of research procedures and tools that a researcher has chosen to describe the overall strategy used to integrate the various components of the research study in a comprehensible and logical manner. The research design is descriptive, involving a case study and survey.

Primary Data.

Primary data refers to the information and data that has is collected via original and first-hand research, such as surveys and discussions.

For this paper –

Respondents – 4.

Organization – 4 different stock broking agencies; Motilal Oswal Franchise, Edelweiss, SMC Global, Motilal Oswal Main Office.

Experience – 10 + years.

Designations Interviewed – Sub Broker, Franchise Owner, Senior Manager, and Zonal Head.

Secondary Data.

Secondary data refers to the information or data that has been collected previously by others, such as haunt the internet, published articles, and reports obtained included. SEBI, NSDL, Money Control, brokerage firm’s leading websites, Wikipedia, and published reports by stock trading agents and previous researchers.

### 3.8 *Limitation of the Study*

The world is going through unprecedented times; the COVID 2019 pandemic has taken the world by storm and brought everyday lives to a standstill. The virus's potency and spread are so strong that most countries, including India, had to shut down entirely for more than three months, making even the availability of essential items a challenge.

- 1) Keeping this stressful environment in view, it was almost impossible to venture out to COLLECT data and information regarding the project. This limitation that was faced was a major stumbling block while conducting author research.
- 2) As a result of the pandemic, since all offices, business establishments, workplaces were closed, and most people were working from home, it impacted the SAMPLE SIZE, which was relatively small.
- 3) The reason mentioned above was also responsible for the lack of specific data and statistics that limited the scope of the analysis and created a significant obstacle in establishing the objective of the research in a more meaningful and established manner.

Another limitation faced in the collection of data was the lack of proper connectivity as most of the mobile network and internet connections were destroyed by one of the most violent cyclones AMPHAN that ravaged West Bengal, leaving author city Kolkata and many other places in Bengal with electricity and water for almost two weeks.

- 4) Due to the twin disasters of the pandemic and cyclone, data collection and information and communication with the respondents were done via emails, telephonic conversations, and interviews. However, this too was hindered due to the lack of connectivity caused by network failure.
- 5) The respondents were hesitant and uncooperative in answering queries promptly as they were going through a crisis: the same caused inordinate delays and inadequate response from the selected sample size. Most of the target group refused even to communicate.
- 6) It was impossible to extract the various broking firms' statistics; thus, obtaining relevant documents could not be obtained, and access to the organization and the relevant people was not possible due to the lockdown.
- 7) The limitation in the collection of data, as mentioned in the earlier points, compelled us to change the direction of the study. Since the detailed statistical data for analysis of volumes traded before and after Dematerialization was not sufficient, the direction of the study had to have slightly deviated into the 4 cases related to the main research topic.
- 8) The target group was not very fluent in English, and hence certain limitations were faced in their comprehending the questionnaire due to the language barrier.

## 4 Data Analysis and Findings

### **CASE 1: Impact on Cost and Transparency: Post Dematerialization**

Transparency came to available products and services in the market and their pricing structure. The more transparent the market, the more it is free and efficient. As per the information provided by the brokers, Dematerialization and electronication of shares have improved market efficiency by making market information readily available, thus providing more fantastic opportunities to buyers and sellers of shares and securities to perform their transactions without increasing transaction costs. They claim that due to price transparency, the information about what others are bidding, asking, and trading is now readily available, which helps determine the supply and demand of security. Greater market transparency will also lead to the removal or reduction in the use of intermediaries, thereby reducing cost. For example, one may invest directly in the share market rather than in the bank.

According to Mr. Surajit Banerjee of SMC Securities Global LTD, the introduction of automated trading has brought about Transparency in trading and provided equal opportunity for shareholders and market players all over India. There has been a considerable reduction in stock market scams due to Dematerialization, and it has also attracted global investors due to a reduction in transaction costs, quick settlement cycles, and Transparency.

In his opinion, the problems that plagued the Indian Share Market like fake shares, torn and damaged, stolen or lost share certificates, and the problem of wrong deliveries, were done away with at one sweep by Dematerialization. Investors and market players could now eliminate the defects of paper-based trading, including the delay caused by the transfer of titles. The cost reduction was beneficial to both brokers and investors.

Mr. Soumik Nag, the owner of Motilal Oswal franchise, in the course of the interview, stated that the Company's Act 2013 and other applicable acts and laws, along with the Companies Act 3rd Amendment further dealt with the Dematerialization of shares of unlisted public companies which enhanced Transparency, increased investors protection and further improved corporate governance environment.

Earlier, there were many unwanted legal cases due to fraudulent share transfers and other disputes, which brought about a lot of hardship to actual shareholders. This move by the Indian government recently to make Dematerialization of securities mandatory for all unlisted public companies has improved Transparency and the KYC (know your customer) framework resulting in the overall protection of the investors.

### **CASE 2: Ease and Efficiency of Share Trading After the Dematerialisation of Shares**

As noted earlier, before Dematerialization, investors held physical shares in the traditional paper form. When a person bought shares of a company, he would receive a physical share certificate, which he had to get transferred in his name. However, there were many disadvantages of dealing with physical share certificates. With the

advent of Dematerialization, it became possible to hold these shares electronically, which increased the ease and efficiency of share trading.

In the interview, Mr. Soumik Nag from Motilal Oswal points out the advantages of opening a Demat account for Demat trading in the stock market. He says that a Demat account linked to the other bank accounts of the investor can quickly transfer money to purchase shares and receive money from securities. Earlier in the olden days, when physical share trading was prevalent, people used to carry a bag full of cash to buy shares, a very cumbersome practice as it involved both time and risk. A Demat account where the shares owned by an investor are in electronic format thus eases the way of doing business because it does not involve the tedious way of carrying a considerable amount of cash or a large number of share certificates in physical form.

Buying and selling shares entail the settlement process involving the actual exchange of money and securities between the two parties engaged in the transaction so that the settlement date agreed upon for the transactions gets executed. For example, in current electronics times, transactions settlement is done in three business days, known as T+3, whereas for government bonds and actions, the settlement gets finished on the next business day, T+1.

The paper crisis of security trading in the 1960s and '70 s, due to the more significant number of shares and bond certificates traded physically, led to the evolution of the modern-day settlement and clearing facilitated by the electronification of share trading as a direct result of Dematerialization. Hence, Dematerialization increased the ease and efficiency of stock trading by doing away with physical share certificates, paper currency, and paper checks. Also, in the earlier times, the brokers and the dealers had to use messengers or the Indian Post to send certificates and cheques for payment to settle the trade. It not only posed a considerable risk but also increased the transaction cost. The stock exchanges closed on Wednesday in those times, so it required five business days to settle the trades to complete the paperwork.

Mr. Nag further emphasized the benefits of holding shares in electronic form as it eliminated the risk of losing physical shares due to theft, fire, flood, or other natural calamities, which may cause the physical share certificates to be damaged. Also, since electronification results in stocks in easy transfer from one account to another almost instantly, the whole process of buying and selling shares becomes faster, thus increasing the efficiency and effectiveness of the stock market.

Many other changes and innovations that the selected group of brokers witnessed helped to improve efficiency and effectiveness.

### **CASE 3: Mutual Funds vs. Share Trading**

With the stock market boom brought about in India by the Dematerialization of shares, the mutual fund industry has also witnessed tremendous growth. As the ease and efficiency of stock trading grew, more and more investors became attracted to the higher returns they may enjoy by investing in the stock market. However, mutual funds are a desirable proposition for first-time investors and people who are a bit conservative and want to avoid the high risks of investing directly in the equity market. Stocks or equity shares represent part ownership of the company,

whose shares the shareholder is holding, and that person can be part of the annual shareholders meeting conducted by that particular company. A mutual fund contrarily involves pooling money from different investors with the common aim of investing it in a diverse range of stocks and security managed by a professional fund manager. Now the million-dollar question is whether an investor should invest in stock trading directly or in mutual funds. Moreover, which is the better option.

According to one respondent, Mr. Anindiya Ghosh, Senior Manager of Edelweiss, this is tricky because no hard and fast rules can clearly define which of the two would be a better option for the investor. He states that it is a personal choice of the investor, whether he chooses shares or mutual funds depending on the funds available to him, his investment's main objective, and his risk appetite.

Another respondent, Mr. Bidyoot Sarkar, Zonal Head of Motilal Oswal, agrees with this view and emphasizes that investment in mutual funds would be the right choice for beginners. He emphasizes that investment through mutual funds would be the right choice for new investors who do not know much about the share market. He further opines that it would not be proper to invest in equities unless the investor is an expert, has considerable knowledge of the share market, and is willing to invest a considerable amount of time and effort to learn the ropes of investing in the share market.

Based on the telephonic conversations with the above two respondents, the following issues came to the limelight. Investing directly in stocks requires more time and research regarding the stocks. On the other hand, the investor plays a passive role in investing in mutual funds as a professional fund manager manages his portfolio. Hence, the investor depends on the fund manager to decide which funds suit his wealth creation goals. However, one limitation in this context is that the investor cannot exit from one or two stocks from the portfolio if he wishes to do so because, as an investor in mutual funds, he has no control over the actual selection of stocks held by that particular mutual fund.

Another disadvantage of investing in shares is having a considerable amount of capital to create a diversified portfolio. However, an investor can begin investing in mutual funds with a minimum of Rs 500 or Rs 1000 a month. This facility is known as a systematic investment plan (SIP), whereby an investor invests a fixed amount monthly in the mutual funds of his choice. Such a facility is not available for investment in the share market because share prices are volatile and keep fluctuating and thus require personal attention and quick decision-making abilities.

The cost of investing in stocks and mutual funds is also different. Investors in mutual funds must pay management charges such as front-end and back-end load on purchase and sale redemption charges. At the same time, investment in shares requires the brokerage to pay the stockbroker for his services. Another point to be noted here is that investors need to have a Demat account to indulge in share trading directly. However, having a Demat account is not mandatory in mutual funds, but if one has a Demat account, he can use it to deal in mutual funds. Thus investors in shares have to pay charges for a Demat account and security transaction tax apart from the brokerage fees. In comparison, investing in stocks will be a cheaper option

than investing in mutual funds as the fees charged by the excellent fund managers for their services are pretty high.

Now coming to the most crucial aspect that motivates investors to invest either in mutual funds or directly in the stock market, a comparison of the data available shows that some of the leading mutual funds like “ICICI PRUDENTIAL BLUE CHIP FUND, SBI MAGNUM MULTI CAP FUND, SBI BLUECHIP FUND, MIRAE ASSET EMERGING BLUECHIP FUND, KOTAK STANDARD MULTI CAP FUND” have shown better returns than the Nifty index of the share market considering a three year, five years and ten-year term. On the other hand, if we consider some of the top companies in the Nifty Index, like HDFC Bank Ltd, Hindustan Unilever, Maruti Suzuki, they have generated much higher returns than the equity mutual funds mentioned above.

#### **CASE 4: Impact of FII's In the Stock Market**

Dematerialization and electronification of shares gave a tremendous boost to the volumes traded by the Indian Investors, institutions, and fund houses and gave a great impetus to Foreign Institutional Investors or FII's. A foreign institutional investor refers to an investor or investment fund associated with a country outside which he resides or is registered. Insurance companies, mutual funds, investment banks, hedge funds are a part of FII's. Thus, FII's investors and institutions invest in the Indian Stock Market but other foreign countries. FII's are attracted to invest in developing economies like India because they promise a higher growth potential than advanced and developed economies. However, all FII's are subject to strict rules and regulations, which the Reserve Bank of India monitors. For example, in India, FII's can invest up to a limit of 24% of the paid-up capital in any Indian Company.

Moreover, for public sector banks, the investment by FII's is capped at 20% of the public sector banks' paid-up capital. Such restrictions are required to protect the interest of our country by limiting the influence of FII's on India's financial market and individual companies. The same will help protect the Indian Economy from any potential damage and setback that the Indian Economy might suffer if the bulk of FII's choose to flee during a crisis.

FII's investment started pouring into India in September 1992. It was a memorable landmark that led to the globalizing of India's financial services industry. Since then, investments made by FII's have been mounting in importance in India. FII's play a substantial role in determining the active trading patterns of the Sensex companies and determining the share price movements since the behavior of other retail investors are influenced by the FII's, and they tend to follow the investment decisions made by the FII's. There is a high degree of volatility in the stock markets whenever the FII's purchase and sell their stocks.

All FII's must register with SEBI in order to trade in Indian Equity Markets. One of the main reasons the FII's are willing to invest in the Indian Capital Market is because they find it potentially profitable. It is possible to get highly qualified professionals at a lower cost because of India's lack of employment opportunities. Lower costs increase the profitability and chances of survival of foreign companies



and corporations. A competitive labor force improves its quality and productivity, which are significantly favorable by the Foreign Institutional Investors.

## 5 Findings and Recommendations

### Findings

1. Dematerialisation has brought about clarity and Transparency in the Indian Stock Market trading resulting in a significant reduction of customer complaints and grievances.
2. Another beneficial aspect of Dematerialization is that it has improved the efficiency and robustness in the Indian Stock Market by reducing wrong deliveries and trade settlement times.
3. Apart from giving a tremendous boost to individual investors, Dematerialization has also attracted FII's on a large scale, and FII investments occupy a large part of the Indian Share Market.
4. Dematerialization has also resulted in reduced costs related to stock transactions, in the absence of duty and transportation, and other miscellaneous costs related to the transport of physical shares.
5. Post Dematerialization, the mutual fund industry has also witnessed tremendous growth and the share market.
6. Dematerialization and electronification of shares has not only increased the ease and efficiency of the brokers and broking houses by facilitating faster settlements and deliveries but has also helped in customer redress.
7. The volume of shares traded post dematerialization and electronification showed a one hundred fifty to three hundred percent increase in the pre-dematerialization era.
8. The value of shares traded increased from Rs 90,000 Crore to Rs 9, 00,000 Core post dematerialization.

\*\*The last two data were quoted by the brokers over the telephonic interview.

## 6 Recommendations

1. Although Dematerialization has reduced fraudulent activities and malpractices related to the share market, there is still scope for improvement, and the government and SEBI can seek to bring about more reforms and regulations to increase investors' confidence in the Indian Stock Exchange.
2. It would also be possible to attract new investors and fresh investments in the stock markets if the process for IPO application is further simplified. (IPO is the process of issuing new share by a company to raise capital).

3. More advanced software could help speed up real-time updating of the investor's transactions performed in the share market.
4. Upgradation of Bank automation to facilitate real-time clearing and settlement relating to the stock market.
5. Another area that requires a lot of attention and improvement is to educate the investors on the basics of share trading. Investors have very little knowledge about shares and the process of share trading and are sometimes blindly dependent on the brokers. Any platform that helps to improve their knowledge on shares would increase their confidence to invest more.
6. It would also help if educational institutions included capital market trading at the school or graduation level or even as a management school or university specialization. The same will help to educate the commoner on share trading and encourage them to invest in the share market.
7. Some positive and practical steps are needed to protect the retailers (small investors) against the promoters (big influential players) as these influential promoters sometimes manipulate the market for their benefit, thus harming the interests of the small retail investors.

\*\* Recommendations mentioned have as suggested by experienced brokers and the respondents of this project.


## References

- Kumar, M., Elahi, Y.: Study of customers' preference towards investment in mutual funds and equity shares with special reference to Lucknow. *Int. J. Manage. Stud.* (2018)
- Harshit, S.S., Yadav, S.: Department of Management Studies, Indian Institute of Technology Delhi, Vishwakarma Bhawan, Hauz Khas, New Delhi 110016, India (2021)
- Why Would Someone Choose a Mutual Fund Over a Stock? (2020) <https://www.investopedia.com/ask/answers/05/062305.asp>
- Louis, N.: The importance of Diversification Investopedia Investing.docx (2020). <https://www.coursero.com/file/48757160/The-importance-of-Diversification-INVESTOPEDIA-INVESTING.docx/>
- Richardson Pete Stock market hit by coronavirus: Reasons for turmoil, what equity investors should do now (2020). <https://economictimes.indiatimes.com/wealth/invest/stock-market-hit-by-coronavirus-reasons-for-turmoil-what-equity-investors-should-do-now/articleshow/74623291.cms>
- Glen Curtis 9 Major Questions Investors Should Ask Management (2020). <https://www.investopedia.com/articles/stocks/08/questions-for-management.asp>
- Vinit, S.: *Int. J. Adv. Res. Comput. Sci. Manage. Stud. Res. Article/Paper/Case Stud.* (2020) [www.ijarcsms.com](http://www.ijarcsms.com)
- Wang: Stock Market Trading Volume, May 2009. <https://doi.org/10.1016/B978-0-444-53548-1.50007-6>
- Karpoff. (2020) <http://ijarcsms.com/docs/paper/volume2/issue3/V2I3-0012.pdf>
- Portnoy, K.: High-Frequency Trading and the Stock Market: A Look at the Effects of Trade Volume on Stock Price Changes Kyle Portnoy 2011 Illinois Wesleyan University (2011). <https://core.ac.uk/download/pdf/59222771.pdf>
- Huddart, S., Lang, M.H., Yetman, M., Yetman, M.: Psychological factors, stock price paths, and trading volume. *SSRN Electron. J.* (2003). <https://doi.org/10.2139/ssrn.353749>

- Farrukh, S.: Do weather influence investor behavior, stock returns, and volatility? Evidence from the greater China region. *Phys. Stat. Mech. Appl* **523**, 525–543 (2019). <https://doi.org/10.1016/j.physa.2019.02.015>
- Chopra, A.: Technology disruptions reshaping the market journal of advanced research in dynamical and control systems. (H Index 8 ISSN1943023X SJR {0.11} Ranking of United States Scimago Institutions Ranking), **11**(03), 1704–1710 (2020). Scopus® database (Elsevier B.V.). <http://www.jardcs.org/abstract.php?id=975>. 7 Jan 2019

# Performance Analysis of Indian Mutual Funds During Covid-2019



Rekha Nagarajan and Ashok Chopra 

**Abstract** The outbreak situation of the COVID-2019 pandemic is an Unpredictable shock to the world economy. World Economy faces the slowdown of share market prices, especially the value of mutual fund value decreases. Companies and Businessmen primarily invested in the mutual funds to play a safer role, modify their risk into the return, and increase the Net Assets Value (NAV). This study attempts to describe the state of mutual funds in India during this COVID 2019 period. Thus the performance of mutual funds when compared with before and during COVID 2019, the proposed model specifies on testing the performance of mutual funds both in the public and private sectors and attains to access the impact of COVID 2019 on mutual funds. The author has used correlation for finding out the relation of COVID 2019 and Mutual Funds. This paper mainly addresses the causes of investors during economic fluctuation and the return of top mutual companies by comparing the return of 1 year and during these last three months. COVID 2019 is not only on particular sectors; it affects almost every sector like construction, manufacturing, business, agriculture. While all the sectors are affected by COVID 2019 pandemics, it hits the society and the economy; once the economy comes down, the inflation rate increase, the Forex rate will increase, and it affects our whole country. In this paper, the author included sectors that are affected and their performance now and how well the different types of funds are performing, which will be helpful for the reader to analyze the affected areas. The paper concluded with the help of a survey and statistical tools whether the investors can make a further payment and hold for some period or continue with the investment whatever situation crisis impacts our economy.

**Keywords** Mutual Funds performance in India during COVID 2019 · Impact · Investors situation · Growth of mutual funds in India

---

R. Nagarajan · A. Chopra (✉)  
Amity University, Dubai, United Arab Emirates  
e-mail: [achopra@amityuniversity.ae](mailto:achopra@amityuniversity.ae)

## 1 Introduction

Mutual Funds is an emerging investment vehicle covered with a pool of funds gathered from many investors. Mutual funds play financial intermediaries between the banks and investors who want to invest in a share market. The main aim of mutual funds is to diversify the risk of investors. Majority of industries investing their amount in mutual funds for managing the risk of their financial assets. There is a group of securities called a portfolio that helps select security based on performance. The investment professional operates these enormous amounts of money in the mutual funds called a fund manager or money manager, or portfolio manager. This fund manager's job is to invest the fund's assets in different securities like gold, stock, and other assets to make potential capital gains or income. Mutual funds give small and individual investors opportunities to access professionally maintained portfolios of securities such as bonds, equities, and other instruments. Such an act makes investments benefit the investors in proportion to their contribution to the fund. A mutual fund's range of investment is structured and operated to fulfill the investment objectives.

According to the SEBI Regulations, mutual funds designed their schemes for the different types of investors that suit them. In India, there are more than 400 products and services available in mutual funds in various categories. These systems they compressed in two forms, i.e., Open-ended schemes and close-ended schemes.

In short, a mutual fund is a basket filled with different types of investment such as bonds, cash, gold, stocks. Money for mutual funds will be arises from the investments of small and individual investors or some business institutions. Mutual funds offer one of the most complete, accessible, broad, and flexible ways to make a diversified range of investments. A mutual fund is a financial tool that is professionally maintained and manages the funds that arise from the different investors at large. The main advantage of investing in mutual funds is that the investors can purchase bonds or stocks in the mutual funds at comparatively lower trading costs compared to direct investing in the stock or capital market. The considerable strength of the mutual fund is pooling the funds of different investors. Since mutual funds require only a small amount of money, it encourages the small investor to invest in mutual funds and enjoy the benefits arising from mutual funds. The "fund manager" takes every investment decision in the mutual funds is taken by the "fund manager" according to the guidance provided in the investment objective and investment pattern.

A Stock market value decreases highly, which the Indian economy never faced before. Nifty50 and Sensex play a safe role, but 1,128 points have decreased as per the last survey. Naturally, such a considerable investment affects an individual investor, mainly including mutual funds. Every individual consults with their friends and advisors whether they should sell their investment or hold their investments. Almost significant suggestions from the mutual fund's manager are that it almost becomes impossible to avoid further investment, especially when an investor is inequity fund markets over a long period.

## 2 Literature Review

A researcher (Panwar and Dr 2006) concluded that there is not much difference in the percentage of returns in the public and private sectors. However, there is some significant difference in showing trough coefficient of variance, the average standard deviation on performance and interest. It gives a difference in the diversification of mutual funds, and it impacts the performance. In order to get net assets, common stocks, and market capitalization, there is no statistical difference between foreign mutual funds and public and private mutual funds. Portfolio risk was outperformed both in the public and private sectors.

The author (Rao Neelakanteswar 2006) comes out with an idea of establishing a relationship between investment styles and the performance of mutual funds. It helps an investor, policymakers, and research to get an idea of improving investment strategies and having a wealthy growth on mutual funds—an author remarkably open-ended analysis equity with different investment styles. Since India Mutual funds offered 419 investment scheme plans, investors get confused about where and when to invest. This study mention that whole mutual funds are progressing based on growth and dividend. Through the research, this study enforces that the growth plan gives better performance than Dividend plans. In terms of risk and return, approximately 80% of Growth plans have better adjustment plans. It is essential to consider investment styles to improve performance on an investment portfolio by analyzing F-test and T-Test.

(Bilal Pandow 2017) Articles describe is that the mutual fund industry succeeds in the market and achieves its goal? Since India is the most populated country, the competitors' challenges and satisfying investor's demands are also high. Moreover, challenges like lack of awareness among investors, penetration ratio level, and product differentiation insufficiency also lead to a critical situation towards mutual funds. The author clearly explained the growth of mutual funds and the number of mutual funds introduced in India until 2011 and mainly focused on the Household savings method. The whole mutual fund industry gets divided into three sectors private, public, and foreign fund houses. He concluded that one of the significant purposes of mutual funds in Household savings is attracting and mobilizing small investors to save their assets and be a part of the economic development.

A researcher (Dr. Geeta Kesavaraj 2020) carried out the study with the customer perception of mutual funds and their types. He focuses on the possibilities of measuring the performance, expectation, and satisfaction level. His main aim is to identify investors' awareness among mutual funds schemes and the schemes' selection, but his study's limitation is that he narrows down his topic within one district, "Chennai" in India. He has used various statistical tools like the Chi-squared test, Karl Pearson's correlation, and one-way ANOVA to interpret finding a way for suggestions and conclusions. He concluded that the investors lack awareness of mutual funds schemes, and it is responsible for the fund manager to create awareness since India's mutual funds get regulated by SEBI, which provides security and comfort to

an investor. However, still, mutual fund companies should focus on building investor awareness.

(Narayan 2003) Evaluate the performance index and risk-related analysis. He started to collect the data with a sample of 269 open-ended schemes (out of total schemes of 433) for determining the relative performance index. He uses 58 schemes for further resources but excluded the funds whose returns are less than risk-free returns. With the help of statistical tools and ratios, they find monthly return and risk of the sample mutual fund schemes during the period were 0.59% and 7.10%, respectively, compared to similar statistics of 0.14% and 8.57% for the market portfolio. As a result, he concluded that most of the mutual fund schemes in the sample of 58 satisfied investors' expectations by giving excess returns over expected returns based on premiums for systematic risk and absolute risk.

A recent article by Akshatha P. elaborates that the investor's primary objective of any individual or business is to maximize the return with minimum risk and credit risk through diversification. A mutual fund has become an attractive way for investors to invest their money. However, he assures that the people's priority is always a bank investment; the second can be a mutual fund or any other revenue. The main objective of this article is to evaluate the performance of Indian equity diversified mutual funds. Moreover, those performances of mutual funds are measured based on the Sharpe's ratio, Jenson's, and Treynor's ratio. Also, for measurement, this paper selected five companies' mutual schemes. Before entering into an investment, investors need to know about the type of investment, details about the fund and risk, and its returns; otherwise, there are chances of losing money. Investment is a wise decision that a person must take with careful analysis of the factors involved therein. The study shows that most equity funds outperformed Sharpe's, Jenson's, and Treynor's ratios.

### 3 Research Methodology

A research paper titled "A performance analysis of Mutual Funds during COVID-2019" is paving the way to determine the reasons of investment that affect investors who invested in various schemes in mutual funds and such investment demand. It needs professional investors by introducing new schemes and fund structures fixed by the fund managers and mutual funds companies. Investors are investing in several sectors, but due to this COVID 19 pandemic, all works stopped, and banks are closed only the necessity of medical and transportation is running on. During this pandemic, what was supposed to be an investor's mindset and what they understood with the current market situation?

For analyzing and reporting the performance of Mutual Funds during coronavirus pandemics, the author has collected both primary and secondary data. The author used a quantitative method for primary data, i.e., prepared questionnaires and took a survey to measure the variables. Then, the author used statistical tools like correlation to find out the relationship between the investor's funds fluctuation and how COVID 2019 impacts mutual funds with the help of SPSS. Moreover, secondary data in the

sense I used and referred to many research papers, bibliographies, recent websites for understanding the market condition, and COVID 2019 crashes on mutual funds.

**Pearson Correlation:** The correlation Coefficient is one of the statistical tools used to measure how strong a relationship between the two variables is. There are three significant types of correlation Pearson, Spearman, Kendall's tau-b. In this report, Pearson Correlation has been used to analyze a relationship between different variables.

**Objectives of the Research:**

To study the growth of mutual funds in India in recent years.

To scrutinize the impact of COVID 2019 on mutual funds and how much investors understand the market situation and impact level on their investment.

To determine the investor's current situation.

To evaluate the awareness of customers towards a market situation.

## **4 Data Analysis**

### ***4.1 Need for Investing in Mutual Funds***

There are several benefits available for investors investing in mutual funds. Following are some of the essential benefits –

1. Professional Management
2. Simplicity
3. Easy accessibility
4. Diversification
5. Tax benefits

### ***4.2 Different Types of Mutual Funds***

There are few most popular mutual funds which are familiar in India. Mutual funds are of two types of open funded and closed funded. An open-ended scheme is flexible, and an investor can easily buy/sell units daily, and initially, it needs only a certain lock-in period for investment or disinvests for a certain amount. A closed-ended market is the initial number of funds fixed by the IPO (initial public offering).

There are few common types of mutual funds which are familiar in India.

- Money Market Funds
- Fixed income funds
- Index funds
- Equity Funds
- Hybrid funds



### ***4.3 Open - Ended Funds***

In these types of mutual funds, units are open for purchase and redemption throughout the year continuously. All units in these types of mutual funds can be purchased or redeemed at any time at prevailing NAVs (Net Asset Value). Investors of these mutual funds can keep their investment in this scheme as long as they want.

### ***4.4 Different Closed – Ended Funds***

These mutual funds schemes will have a fixed maturity period: one year, two years, and five years. The units in the closed-ended fund's scheme can be purchased only during a specified period at the initial offer period. This closed-ended fund scheme provides two options to their investors.

1. Units or stocks listed in the recognized stock exchange or
2. It must provide a specific periodic repurchase facility to investors.

### ***4.5 Interval Funds***

These are funds that have the features of both open-ended funds and closed-ended funds. This interval funds scheme is open for both purchase and repurchase of shares at different intervals (monthly, quarterly, annually) at the current base price of NAV (Net Assets Value). These interval funds are similar to the close-ended funds with some differences.

### ***4.6 Equity Funds***

Equity funds schemes are one of the most popular mutual funds schemes. Equity funds are those schemes in which the funds are invested in the company's equity stocks or shares and allow the investors to participate in the stock markets. The main objectives of this equity fund scheme are to provide high returns potential over the long term. This equity fund scheme has superior returns than other mutual funds schemes, is meant for investors with a long-term perspective and a higher risk-bearing. These equity mutual funds further are divided into four categories.

1. Diversified funds.
2. Tax saving funds.
3. Index funds.
4. Sectoral funds.

#### ***4.7 Debt Funds***

Debt mutual funds are also called fixed income mutual funds. The main objective of debt funds is to provide fixed and regular income to investors. These funds get invested in the instruments, which are considered safe investments and provide fixed returns. Examples of such debt instruments are Money Market Instruments, Government securities, Bonds, corporate debentures, and other Fixed Income Assets.

#### ***4.8 Hybrid Funds***

Hybrid funds are also called balanced funds. In a hybrid mutual fund scheme, their investments get divided between equity and debt. Sometimes the proportion of debt funds is higher than the equity funds, but in some other cases, the proportion of equity funds will be higher than the debt funds. Therefore, they are also known as marginal equity funds. This allotment between equity and debt will keep changing based on the risk in the market. The critical objective of balanced funds is to satisfy both higher returns and maintain income stability in the long-term process.

#### ***4.9 Money Market Funds***

Money Market Funds are also called Liquid funds. These are purely related to the risk-free debt-oriented schemes; the main objective of this scheme is to preserve the capital, average potential returns, and easy liquidity of the fund. In order to reach this objective, investors in the liquid funds invest their capital primarily in short-term instruments such as T-Bills, Government securities, CPs, Certificates of deposits.

#### ***4.10 Importance of Mutual Funds***

Mutual Funds are creating different types of securities and investments under one umbrella. With the one pool of money banks, one can enjoy investing in hundreds of securities like equities, bonds, securities, commodities. The price of every unit of mutual funds will be adjustable according to the market fluctuation. Every people want to save an income and tries to double up the amount. Mutual funds and their schemes fulfill an investor's demand. It is more convenient for investors.

### ***4.11 Growth of Mutual Funds in India***

The growth of mutual funds has been increasing tremendously. The first Mutual fund in India was by UTI (Unit Trust of India) in 1963. UTI was given birth by the Reserve Bank of India and the Government of India. Later on, in the 1970s -1980, UTI became quite familiar and started implementing many schemes and different portfolios, which helps investors protect themselves from high risk. In the 1980s, another mutual fund called ULIP (Unit Linked Insurance Plans) was born. Initially, it starts to attract small investors and describe them about schemes and investment. From 1987, many public sector banks were allowed to establish a mutual fund as a part of an institution.

SBI started its mutual fund in 1987 December and, followed by Canara Bank, Indian Bank, and so on, introduced a mutual fund scheme. Mutual Funds diversify the investor's securities in a different portfolio and suggest the schemes according to their willingness to take risks. It allocates their income part as a saving in the investment of the funds. Assets under Management have increased from Rs 6.7 crores to 47.4 crores from 1980 to 1993. 1993–1996 was the era where drastic changes happened in the mutual fund company. Private sectors like industries also granted permission to begin a mutual fund business. It raises competition among the public and private sectors. Foreign Fund management also entered into the Indian market through Joint Ventures and with some Indian promoters. Private sectors have brought with many different new schemes and technologies to attract an investor. The number of Mutual Funds stands up with foreign traders and investors. A recent survey mentioned that India has 44 Asset under Management (AUM) fully authorized and licensed by the government. Investors can invest in any securities like real estate, gold, mutual funds, Cryptocurrency. The funds like ICICI prudential fund, HDFC blue-chip fund, Reliance mutual funds, SBI Mutual funds, Reliance, and Bajaj Finance play a leading role in the stock market.

### ***4.12 Impact of COVID 2019 on Mutual Funds in India***

Globally, the stock market is bearing a crisis of COVID 2019 pandemics. The impact of coronavirus pandemics has affected the stock market vastly. It becomes a more volatile state. It causes many investors to have met dramatic changes in the value of the investment portfolio. It has been critical for investors to maintain and track their investment goals, primarily since it affects long-term investment plans. Every country's stock market value comes down, which affects the banks and private sector. The rapid spread of this virus, and investors from all over the world, affected—people who all invested in mutual funds investment facing a financial asset crisis. India's mutual funds' performance is relatively better than in other countries. However, the performance of the equity market is falling worst. Sensex hits around 23% on the equity market. Mainly people who have invested in construction companies are

facing losses every day. According to the money control report, interest rates on fixed deposits fall, which was announced by the Reserve Bank of India (RBI), and it particularly impacts the savings bank rates. Investors try to save their investment by using strategies to take a fresh breath like Sensex and the Nifty market. During this lockdown period, investors can take ease pressure from the equity market; some markets are highly rated, including pharma, emerging giants, prudence.

From the business point of view, meetings like Annual General Meeting, Board meetings, corporate meetings, product launches, conferences, and seminars got canceled and postponed due to COVID 19. GDP growth of the Indian economy reduced to 4.7% in the 3rd Quarter of 2019–2020. The outbreak of COVID 2019 changes the whole world economy into a recession, including India. It changes the lives of people, businesses, and how the economies will function. This impact would continue at least for the next 24 months. Currently, many businesses are struggling to survive, and some may even result in wounds up. However, things will eventually get back to normal if new industries emerge with the famed hope of recovery. We can expect the liquidity of many industries and companies shortly as the cost of borrowing went upwards in the actual term; due to this, RBI (Reserve Bank of India) constraint to reduce its interest rates. Currently, demand for essential goods increased rapidly. Therefore, the Indian government's focus is only on the essential goods, which will affect the non-essential goods is enormous. So, Non-essential goods businesses would look forward to recovering their outstanding from outsiders and receivables from debtors to survive in the market. Financial institutions and banks have already had problems recovering the Non-Performable Assets, bankrupt and insolvency now this impact will add additional pressure to them (Table 1).

Many investors invest two or three mutual funds in different categories in the name of diversification. Simple logic is that these mutual funds divide into three major categories: large-cap, mid-cap, and small-cap. No one knows when this pandemic comes to an end. When it comes to equity investment, an investor expects to face high market volatility due to the disclosure by banks, AMC. It is better to concentrate on asset allocation funds managed by a fund manager and helps to continue with SIP

**Table 1** Performance of Mutual Funds before COVID 2019 and During COVID 2019

Impacts on different sector	Returns (April to June)
Construction	–13.3%
Professional services, real estate, and finance	–17.3%
Agricultural, fishing, and forestry	–1.3%
Manufacturing	–6.3%
Water supply, electricity, gas and other	–13.9%
Trade, transport, hotels, communication	–9.7%
Public administration, defense, and others	–0.4%

(Systematic Investment Planning). It helps to avoid risk as well as maximum return. In another way, the debt investor must perceive that the developments are primarily isolated from the single fund house. Due to unexpected pandemics, the debt market falls and shows negative development for certain house funds, and that is why the debt market offers to invest in single fund houses with small capital for the small and mid-term enterprises. An outperforming 33 Portfolio Management Schemes, Kotak's Association Management Company encounters a considerable profit by investing in pharmaceuticals and gaining a return nearby 26%. Mutual fund managers suggest the hybrid funds during this current situation because the mixed composed portfolio's outperformance plays better in the aggressive market than the equity market.

According to the "IIT Hyderabad," elaborates that investors need not worry about the net asset value (NAV) of their investment since it would not change or fall drastically during the present quarter. With the outbreak of COVID 2019, market volatility will continue to hold the mutual fund industry because it considers it part of the ongoing turmoil of the Indian economy and investor's concerns. Though the Reserve Bank of India (RBI) and Ministry of Finance announced to continue the mutual fund investments through a systematic investment plan (SIP), simultaneously, it poses unreliability about the future cash flows to equity assets. Instead of pulling out the money from mutual funds without knowing the volatility in the equity and debt funds in the short-term, investors can continue with the flow of income aiming at long-term investment. The same is to be immune to the economic backfire of COVID 2019, and around 44 mutual funds industry is under pressure to continue with the small-midterm following the volatility of the market. The Pharma industry and telecom industry outpaced its peers and achieving continuous advantages from the ongoing disruption. Due to the lockdown condition, business runs via the Internet, beneficial to the telecom industry. 1.47 lakhs customers may face an issue related to their business regarding demand, survival, debt, and affordability. Healthcare sectors will sure get more benefits from the government in the future as well.

#### ***4.13 Performance of Top Mutual Funds in Different Schemes***

The author has taken the three significant funds equity, hybrid, and debt funds with top companies four funds running well and compared performance between a 1 year return and this three-month return Fig. 1

As one can see, the difference between a one-year return and three months return. Even though the 1-year return was harmful in some companies, these three months of COVID 2019 pandemics go more negative. The first Axis Midcap fund- Direct plan and have growth charges its 1 year return was 0.30%, but the three-month return is -8.40% one could see the losses. The top companies holding this fund are City Union Bank, Info Edge, Bajaj Finance, Bata India. Secondly, also an Axis Midcap fund, but it does not have a direct plan but charges only a growth rate. BOI AXA Tax Advantage comes under the ELSS fund category. Its 1-year return is already in

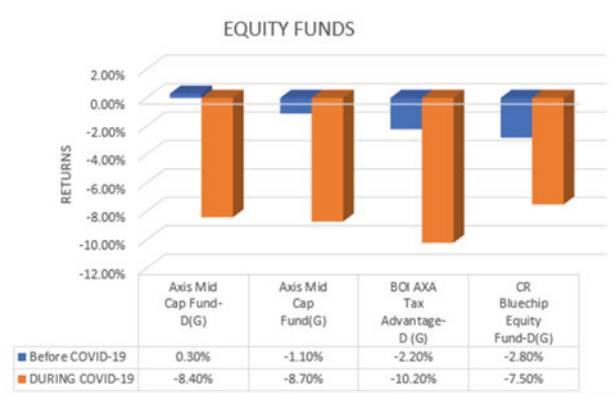
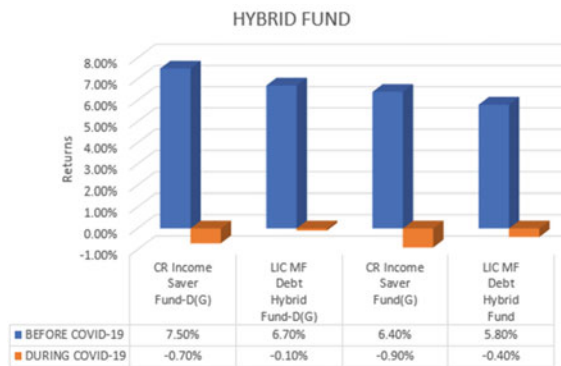


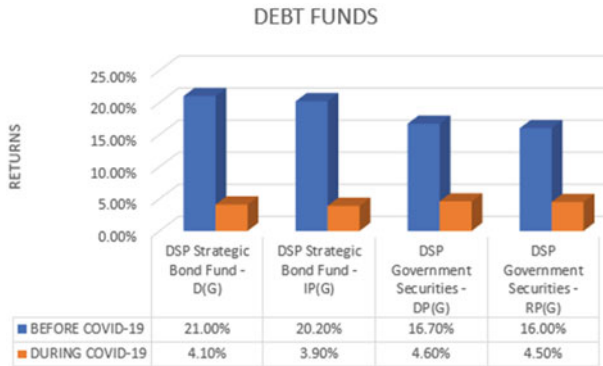
Fig. 1 Top four Funds performance in equity market

negative – 2.20%, but this three-month negative return (–10.20%) crossed the 1-year negative return, and the companies holding this fund are Bajaj Finance, HDFC Bank, ICICI Bank, Kotak Mahindra, Reliance. CR Bluechip Equity Fund is under Large Cap fund and growth charges 1.0% of sell value, and companies holding this fund are HDFC Bank, Infosys, Axis Bank, TCS, and Reliance Fig. 2.

Before COVID 2019 indicates the 1-year return and during COVID 2019 calculates the three months return. CR Income Saver Fund-D deals with a direct plan and growth. The top companies holding CR Income saver funds are Apollo hospital, City Union Bank, Axis Bank, Sanofi India, Whirlpool. LIC MF Debt Hybrid funds set a benchmark of CRISIL MIP Blended Fund, and the companies holding this fund are ICICI Bank Ltd, Infosys Ltd, State Bank of India, Government of Indian Sovereign. CR Income saver funds-G is a growth plan only, and it comes under the Canara Robeco Mutual funds and deals with LIC Housing Finance Ltd, Indian Railway Finance, Reliance Industries Ltd, and Housing Development Fig. 3.

Fig. 2 Top four funds performance in hybrid market





**Fig. 3** Top four funds performance in debt market

By comparing the equity and hybrid fund, the debt fund is still earning a positive return, but it is far less when the author compares 1-year returns and these three months. DSP Strategic Bond Fund –D (G) is under the Dynamic Bond Fund; it is for bond investment where it expects to maximize more returns. DSP Strategic Bond Fund- IP (G) is for an institutional plan; the primary goal of this scheme is to generate optimal returns with high liquidity through the portfolio. DSP Government Securities DP (G), this scheme’s objective is to generate income through investment in Government Securities of various maturities. The last fund is DSP Government Securities -RP (Regular Plan). Growth mainly invested in bonds issued by the government of India. These bonds do not carry any default risk since the government backs the repayment money (Table 2).

To better understand, the author analyzed data to support the best solution, and the data was collected by serving questionnaires to the investor’s interest. One hundred fifty respondents came forward from all over India by filling the questionnaire.

**Correlation**

Table 3: Age and Form of Investment Level of significance: 0.05.

Null hypothesis (H0): There is no relationship between age and the most preferred basis that investors considered as necessary while investing in mutual funds.

The alternative hypothesis (H1): There is a relationship between age and the most preferred basis that investors consider essential while investing in mutual funds (Table 4).

The Pearson correlation coefficient,  $r = -181$  with the N of 50, less than 0.05, clearly shows that the null hypothesis was thus rejected. The value lies at 0.209, which indicates a weak correlation between these two variables.

Table 5: Types of schemes do one prefer, and how much COVID 2019 affects one’s return?

Level of Significance = 0.05.

**Table 2** Top 10 ranking mutual funds company

AMC	Category	Strategy name	Recent Return (April) %
Kotak	Sector fund	Pharma	26%
Equiries securities	Mid & Small Cap	Long horizon fund	24%
Green portfolio	Multi-Cap	Special	20%
Ambit capital	Small-Cap	Emerging giants	19%
ICICI prudential	Large Cap	Large-cap portfolio	19%
Solidarity advisors	Multi-Cap	Prudence	18%
Marcellus	Small-Cap	Little champs	17%
Crest wealth management	Small-Cap	Emerging bluechip	17%
Anand Rathi advisors	Multi-Cap	Impress PMS	17%
Right horizons	Small-Cap	Minerva India Under-Served	17%

**Table 3** Interpretation and analysis in demographics variance

Variable	Factors	Frequency	Percentage %
Age	Below 30	28	56
	30–40	13	26
	40–50	7	14
	50–60	2	4
Gender	Male	29	58
	Female	21	42
Income statement	Below Rs.50,000	14	28
	50,000–1,00,000	12	24
	1,00,000–2,00,000	13	26
	2,00,000–3,00,000	11	22
Profession	Entrepreneur	9	18.0
	Businessman	8	16.0
	Employee	31	62.0
	Others	2	4.0



**Table 4** Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 30	28	56.0	56.0	56.0
	Between 30–40	13	26.0	26.0	82.0
	Between 40–50	7	14.0	14.0	96.0
	Above 50	2	4.0	4.0	100.0
	Total	50	100.0	100.0	

**Table 5** Types of schemes do one prefer and how much Covid-2019 affected one’s return

Descriptive statistics			
	Mean	Std. deviation	N
Age	1.6600	0.87155	50
Indicate the most preferred Basis that you considered as important while you Investing in mutual funds	2.9400	1.16776	50
Correlations			
		age	Indicate the most preferred basis that you considered as important while you investing in mutual funds
Age	Pearson correlation	1	−0.181
	Sig. (2-tailed)		0.209
	N	50	50
Indicate the most preferred basis that you considered as important while you investing in mutual funds	Pearson correlation	−0.181	1
	Sig. (2-tailed)	0.209	
	N	50	50

Null Hypothesis (H0) = There is no relationship between this type of scheme where investors prefer most and the amount of impact on return due to COVID 2019.

Alternative Hypothesis (H1) = There is a relationship between this type of scheme where investors prefer most and the amount of impact on return due to COVID 2019.

Interpretation: The Pearson correlation  $0.197 > 0.05$  indicates the null hypothesis accepted from the above output. The type of schemes that investors prefer does not relate to the impact on the return of COVID 2019. There are a shallow degree of 0.171 (17%) chances to prove that this statement is false.

Table 6: Income group and Incase COVID 19 situation made one terminate or leave a job; would it affect one’s investment?

Level of significance = 0.05

**Table 6** Income group and incase COVID-2019 situation made one terminate or leave a job; would it affect one's investment?

Descriptive statistics			
	Mean	Std. deviation	N
What type of schemes do you prefer most?	2.1200	1.11831	50
How much COVID-19 affects your return in mutual funds?	3.6600	1.11776	50
Correlations			
		What type of schemes do you prefer most?	How much COVID-19 affects your return in mutual funds?
What type of schemes do you prefer most?	Pearson correlation	1	0.197
	Sig. (2-tailed)		0.171
	N	50	50
How much COVID-19 affects your return in mutual funds?	Pearson correlation	0.197	1
	Sig. (2-tailed)	0.171	
	N	50	50

**Table 7** Has Covid-19 impacted one's stock, and is it good to invest in mutual funds after Covid-19 betterment

Descriptive statistics			
	Mean	Std. deviation	N
Has COVID-19 impact on your stocks?	1.5800	0.85928	50
Is it good to invest in mutual Funds after the covid19 betterment?	1.6600	0.84781	50
Correlations			
		Has COVID- 19 impact on your stocks?	Is it good to invest in mutual funds after the covid19 betterment?
Has COVID-19 impact on your stocks?	Pearson Correlation	1	0.192
	Sig. (2-tailed)		0.181
	N	50	50
Is it good to invest in mutual Funds after the covid19 betterment?	Pearson Correlation	0.192	1
	Sig. (2-tailed)	0.181	
	N	50	50

Null hypothesis (H0) = There is no correlation between the income group and the impact of investment if you leave or terminate the job during this COVID 2019 situation.

Interpretation: This output shows  $-0.087 < 0.05$  which means the null hypothesis was rejected. There is a correlation between these two variables. The significance level (2 tailed) shows 0.732, which means 72% chances are to sentence this as accurate.

Table 7: Has COVID 2019 impacts ON’s stock, and is it reasonable to invest in mutual funds after COVID 2019 betterment?

Level of significance = 0.05

Null Hypothesis (H0): There is no relationship between has COVID 2019 impact on a stock and is it good to invest in mutual funds after the COVID 2019 betterment.

Alternative Hypothesis (H1): There is a relationship between has COVID 2019 impact on a stock, and it is good to invest in mutual funds after the COVID 2019 betterment.

Table 8: Investors still investing or not and the platform they prefer. Level of significance = 0.05 Null Hypothesis (H0): There is no relationship between you investing in and which platform you invest most Alternative Hypothesis (H1): There is a relationship between are still investing and which platform you invest most.

Interpretation: The above output shows that Pearson Correlation is 0.314 is more significant than 0.05, which means the null hypothesis is accepted. There is no relationship between which platforms one is investing in and still investing in mutual funds. There are meager chances of around 0.205 chances only available for the relationship between these two variables.

**Table 8** Investors still investing or not and the platform they prefer

Descriptive statistics			
	Mean	Std. deviation	N
Do you still invest?	2.0000	0.90749	18
Which platform do you invest most?	2.5200	1.35887	50
Correlations			
		Do you still invest?	Which platform do you invest most?
Do you still invest?	Pearson correlation	1	0.314
	Sig. (2-tailed)		0.205
	N	18	18
Which platform do you invest most?	Pearson correlation	0.314	1
	Sig. (2-tailed)	0.205	
	N	18	50

**Table 9** Year of experience and kind of fund gives higher return during this COVID-2019 situation

	Mean	Std. deviation	N
Year of experience	1.9722	1.02779	36
Which kind of funds gives Higher returns during the COVID-19 situation?	1.8200	0.87342	50

**Correlations**

		year of experience	which kind of funds gives higher returns during the COVID-19 situation?
year of experience	Pearson correlation	1	- 0.005
	Sig. (2-tailed)		0.976
	N	36	36
which kind of funds gives higher returns during the COVID-19 situation?	Pearson correlation	- 0.005	1
	Sig. (2-tailed)	0.976	
	N	36	50

Table 9: Year of experience and kind of fund gives higher return during this COVID 2019 situation.

Level of significance = 0.05 Null hypothesis (H0): There is no correlation between the years of experience investing in mutual funds and which kind of funds gives higher return during the COVID 2019 situation. Alternative Hypothesis (H1): There is a correlation between the years of experience investing in mutual funds and which kind of funds gives higher return during the COVID 2019 situation.

## 5 Conclusion, Recommendations and Suggestions

The author received 50 responses around India. The author also responded from many states like Tamil Nadu, Maharashtra, Rajasthan, Gujarat, Andhra Pradesh, Karnataka, Mumbai, and Bihar.

The average respondent’s age is around thirty. 56% of respondents were under the age of thirty, followed by 26%, between 30–40 and 14% under the 40–50 category, and the remaining 4% was above 50.

58% responded that they are male and the remaining 42% are the female. Male prefers to invest in mutual funds than female.

28% of the investor’s income is below Rs. 50,000 and 26% investors are between Rs1,00,000–Rs 2,00,000 and 24% investors are earning between Rs 50,000–Rs. 1,00,000 and rest 22% comes under who all are earning above Rs 2,00,000. There is not much difference in income categories since the percentage is close to each other.

The above-average of 58% respondents fall into the employee profession, and 20% are businessmen and 14% are an entrepreneur, and out of 50 respondents, some of the investors are students, assistant professors, and managing directors.

As per the survey, most investors recently started to make their investments in mutual funds. 28% of respondents' experience in mutual funds is less than one year of those newly entered the market. 24% of respondents come between 1–2 years of experience, 22% come between 2–3 years of experience, and 8% are above 4 and 5 years.

40% of investors fall into mutual funds, and secondly, 20% prefer shares/debentures and followed by 14% chose real estate, and 12% preferred gold and fixed deposits.

Investors use some platforms to invest, 36% of investors use Clear funds, and 28% of investors use Zerodha, 16% uses Groww, and 8% uses ABW websites, and the remaining investors investing through banks, direct investment, or IG trading or company intranet sites.

According to 42% of investors investing in mutual funds to get high returns, 28% of respondents investing in mutual funds for the safety purpose and remaining 18% and 10% is for Tax benefits and liquidity, and only 2% chose lock-in period because investors never expect those kinds of situation.

The type of schemes investors mostly preferred is equity (dividend) is 38% those who are all ready to take the risk for high return and then followed by balanced funds is 24% those who want to play safe and 20% goes for debt market, and 16% chose hybrid funds those who want to diversify their risk and assets can fall into this category.

The majority of 64% of investors say that the COVID 2019 situation impacts their stocks and 26% of respondents doubt whether their stocks are affected or not, and the remaining 10% of respondents say no.

27.8% of investors have changed their strategy. They followed the strategy of stopping their investment, investing in pharmaceutical companies, or using buy and hold strategy. 33.3% of investors were not aware of the strategy. 38.9% of investors did not follow any strategy 38.9% of investors kept investing, compared to 38.9% of investors who had stopped investing due to the panic COVID19, and 22.2% otherwise totally stopped investment.

38.9% of investors say yes that their investment will affect if this COVID 2019 situation made them terminate or leave the job and as exact as 38.9% respondent says that their investment will not affection even they leave the job or company terminates them and 22.2% are not sure whether the job losses will affect their investment or not.

32% and 24% respondent say COVID 2019 situation impact their investment very highly and highly and 26% respondent says that this situation affects their investment in moderate condition.

36% of investors agree that this is not a good decision to invest during the COVID 2019 situation, and 34% of respondents chose yes for investing during the COVID 2019 period, and the rest, 30% have no idea about it.

46% of respondents support equity will give more returns even in the current market fluctuation. 28% of respondents vote debt funds and 24% vote hybrid funds give a better return, and 2% say that constant government funds will give a good return.

58% of respondents say they decided to invest after this COVID 2019 ends, 24% of respondents say probably, and 18% say no.

### **Suggestions**

The COVID 2019 pandemics is a first and foremost tragedy that affects millions of people around the world. The contagious COVID 2019 that outbreaks in 2019 have led to a medical emergency throughout the world. The fears among people hit the global economy when it comes to the Indian economy, the stock market losing around 20%–40% of its value every day—more than Rs. Thirty thousand eight hundred crores of investor's money were lockdown and stuck in mutual funds. Even though the maturity date got finished but the investor's money will remain locked. In India, the stock market lost highly in the opening traded, which led to nervousness among investors. The Sensex fell around 2.84% for an hour. However, the author's main advice is not to rush to save capitalization and rush from fleeing. Once the pandemic is over, there is a significant chance to recover and raise funds' value. Last few months, we saw the China market falls and hit the economy vastly, and when one sees how the current market of China rises, they come back with everyday life and start to reinvest in the market and diversify their assets in various sectors. COVID 2019 is a temporary hit to the market, and during this period, the pharmaceutical field and gold, especially the pharma sector yielding lots of benefits from the COVIS-19 pandemics we contact them for claiming face masks, hand sanitizers, face shields those seem necessary during this situation. Financial planners and mutual fund managers believe that the schemes on vaccines and drugs would go high at the moment. In the last one month itself, the return for the pharma field is 3.07% and 8.05% in three months. After the pharma industry, Internet-based business makes the world disrupted for good due to COVID 2019 pandemics.

We expect this market volatility to continue for a few months, but the investors always remain the ongoing impact in the market. They should keep assets allocation discipline to avoid further losses on their stock. It must be an excellent time to buy stocks at reasonable prices for long-term investment players. Do not panic; sell those stocks that are not giving any good returns as soon as possible, buy a stock at a low price, and allocate in SIP. Invest in a swaying manner and add some liquidity which helps during this volatility period, and always keep in contact and get advice from their mutual fund managers and experts before making any changes in the portfolio.

Due to the lack of clarity on the economic impact of COVID 2019, it is better to adopt many precaution strategies and create awareness among the investors, especially for the equity investors. Portfolio Managers and Financial experts believe that the market will bounce back, so investors no need to panic about their investment. However, having some strategy will save the investors from any kind of hurdle. Long-term investors who have more than 5-years of investment plans are in a safer place because once this lockdown gets over, all the funds market starts to run as usual, and



within their maturity date, the economy will bounce back. However, the hurdle is for short-term investors; most of the investors invest in equity mutual funds, which are high riskier, and those can hold their investment, or they can start to sell the funds if the company's prices go down.

## References

- Sharad, P., Madhumathi, R.: Indian institute of technology, madras characteristics and performance evaluation of selected mutual funds in India (2006)
- Rao, N.D.: Investment styles and performance of equity mutual funds in India (2006)
- Pandow, B.: Middle East college performance of mutual funds in India (2017)
- Kesavaraj, G.: A customer perception towards various types of mutual funds in Chennai n. The Pandemic in the Gulf: What It Portends for NRIs in the Region (2020)
- Sapar, N.R., Madhava, R.: Performance evaluation of Indian mutual funds (2003)
- Akshatha, P.: Performance of mutual funds: a comparative study on India's selected equity mutual funds (2021)
- Arun, T.: Spillover of COVID 2019: Impact on the Global Economy (2020)
- Chopra, A.: Garage to the boardroom - a myth or reality. SSRN (Journal of Social Science Research Network) 1239 University Ave, Floor 2 Rochester, NY 14607. 1556–5068 (2016). [https://papers.ssrn.com/sol3/papers?abstract\\_id=3073471](https://papers.ssrn.com/sol3/papers?abstract_id=3073471)

# Psychological Contract Breach as Moderator to the Influence of the Organizational Justice on Job Satisfaction and Employee Procrastination



Sunarta Sunarta , Heru Kurnianto Tjahjono , Muafi Muafi , and Wisnu Prajogo 

**Abstract** The relationship between employees and the organization is not only transactional, which is regulated in formal contracts, but also involves informal and relational relationships as described in the social exchange theory. The formal relationship is in the form of organizational justice, while the informal relationship is in the psychological contract between the organization and employees. A fair relationship can positively affect job satisfaction, and can negatively affect employee behavior such as procrastination. Procrastination is behavior influenced by complex factors such as personal characteristics, task characteristics, and organizational environment. The relationship between organizational justice, psychological contract, job satisfaction, and procrastination is still a gap in the literature, as well as has become the motivation for this research. This article discusses the moderating role of psychological contract breach on the effect of organizational justice on job satisfaction and procrastination. This study contributes through a literature review on the effect of flexible and fair contracts on job satisfaction and procrastination behavior.

**Keywords** Procrastination behavior · Job satisfaction · Organizational justice · Psychological contract breach

---

S. Sunarta

Student of Doctorate Program, Department of Management, Faculty of Economics, Universitas Islam Indonesia, Yogyakarta, Indonesia

H. K. Tjahjono

Department of Management, Faculty of Economics and Business, Universitas Muhammadiyah Yogyakarta, Yogyakarta, Indonesia

M. Muafi (✉)

Department of Management, Faculty of Business and Economics, Universitas Islam Indonesia Yogyakarta, Yogyakarta, Indonesia

e-mail: [muafi@uii.ac.id](mailto:muafi@uii.ac.id)

W. Prajogo

Department of Management, YKPN School of Business, Yogyakarta, Indonesia



## 1 Introduction

The relationship between organizations and employees is not only transactional (economic), but also involves relationships that are formal-informal, transactional-relational, psychological-social (Ambrozini and Martinelli 2017; Baker et al. 2002). The form of the relationship between individuals and organizations is written in formal and informal rules (Gibson et al. 2012; Zenger et al. 2015). Organizations that establish formal and informal relationships fairly with employees can positively affect job satisfaction, however, it can also negatively affect employee behavior such as procrastination.

Employees will be satisfied, behave positively, and avoid counterproductive behavior if the returns (transactional) received are greater than the contribution made to the organization. Returns should meet a sense of justice, both formally and informally. Justice is not only related to formal matters, but also in informal forms based on social exchange. One form of social exchange in the organization is that employees will use safe ways to stay in the organization, and evaluate their various contributions to the organization through employee procrastination (Karimi and Andam 2016; Khakpour 2018).

This literature study was motivated by the existence of two research gaps. First, procrastination is one type of individual behavior widely described in the literature, especially individual behavior related to academic activities; however, in the literature on individual behavior related to management and organizational activities, it is still very limited (Chauhan et al. 2020). Several previous studies state that procrastination is influenced by individual factors. Such individual factors that influence procrastination are low conscientiousness, impulsivity, low self-efficacy, low self-esteem, neuroticism, sensation seeking, low concern, perfectionism, fear of failure, anxiety, task aversion, and lack of motivation (Chauhan et al. 2020; Ferrari 1995; Steel 2007; Eerde and Katrin. 2018). In addition to personal factors, other factors can influence procrastination such as tasks and organizational environment. The majority of research on the factors that influence procrastination focuses more on individual factors, and still few include the social relations factor.

Second, the effect of organizational justice on job satisfaction has been widely proven in the literature (Abekah-Nkrumah and Atinga 2013; Tjahjono et al. 2019, 2015). However, the working relationship between employees and the organization is basically not only regulated by a formal employment contract, but is also often regulated in an unwritten informal agreement or a psychological contract (Gibson et al. 2012; McAuley et al. 2007). Unfulfilled unwritten employment contracts or psychological contracts can weaken the relationship between fairness in formal contracts and job satisfaction.

This study has contributed to filling the literature gap on the effect of flexible and fair contracts on job satisfaction and procrastination behavior. First, this study provides a literature review on the effect of organizational justice on procrastination behavior. Second, this study provides a literature review on the moderating role of

psychological contract breach on the effect of organizational justice on job satisfaction. Flexible and fair contracts are increasingly important in an increasingly dynamic and uncertain organizational environment.

## 2 Objective and Structure of Research

This main purpose of this study is to discuss the moderating role of psychological contract breach on the effect of organizational justice on job satisfaction and procrastination.

This study is divided in four main parts, namely: (1) Introduction, which includes the research object, empirical issue, and research gap, (2) Literature Review, which includes the theory of the relationship between organizational justice and procrastination, the discusses psychological contract breach as a moderator of the relationship between organizational justice and job satisfaction, (3) Discussion, (4) Conclusion.

## 3 Literature Review

### 3.1 *Effects of Organizational Justice on Procrastination*

As stated by Ferrari (2018) that basically, procrastination is different from delaying, pausing, waiting, pondering, or prioritizing. Furthermore, (Ferrari et al. 2017) also asserted that procrastination is a tendency to delay starting or completing the desired tasks until experiencing discomfort. At workplace, procrastination is a problem often found in almost every organization, both public–private organizations, small-large scale, and even at all levels of the organizational hierarchy (Cadena et al. 2011). Procrastination at work is a behavior of delaying tasks that, actually, do not need to be postponed because there is no benefit of delaying the work (Gupta et al. 2012). As stated by Ferrari (1995) that procrastination consists of four dimensions: (1) delaying in starting or completing tasks, (2) delays in carrying out tasks, (3) time gaps between planned and actual performance, and (4) doing other more fun activities.

Employees who like to procrastinate have the opportunity to often delay tasks that must be completed (Cadena et al. 2011). Some people like to procrastinate in all areas of life, yet others procrastinate only in certain areas such as academic tasks or in health-related activities (Prem et al. 2018). Those who like to procrastinate can use various methods of procrastination (Gupta et al. 2012). There are many ways that employees do to procrastinate, thus a lot of time is wasted. Employees also often spend their work time doing non-work-related activities as a way to postpone doing more demanding and important tasks. How to delay work at workplace varies from one employee to another because it is strongly influenced by individual factors, tasks, and time (Eerde and Katrin. 2018).

Procrastination at workplace has an impact not only for the organization as the employer, but also for the employees concerned (Nguyen et al. 2018). Employees who like to procrastinate tend to experience negative things (Beutel et al. 2016), such as stress, lack of sleep, which in turn can cause physical and mental disorders. Attitudes that do not respect time, and tend to be undisciplined will have an impact on the progress of the organization because, in terms of time, the process of completing tasks is done more slowly than normal time. A study of procrastination in the United States patent office, as found by Beutel et al. (2016), showed that rushing tasks and work to meet deadlines leads to revisions or rework in later phases.

Procrastination is influenced by many factors that are quite complex in terms of personal, task, and the organization that houses it (Beutel et al. 2016). The factors that influence employees in procrastinating are due to personality (Beutel et al. 2016), workload, and efforts to avoid work stress (Beutel et al. 2016; Mohsin and Ayub 2014). Another reason employees procrastinate is due to consideration of the problem of fear of failure, or to obtain more complete and accurate information (Ferrari 1995). Several studies (Kanten 2016; Beutel et al. 2016; Kim et al. 2016) have examined how the role of individual characteristics and personality traits on procrastination, yet there are still organizational factors and social relationships such as organizational justice and psychological contract breach.

Perceived organizational justice is one of the organizational factors that can be investigated from the perspective of sociology and organizational behavior. Based on the theory of justice (Adams 1963), the justice received by employees (distributive, procedural, interactional) not only affects job satisfaction (Abekah-Nkrumah and Atinga 2013; Tjahjono et al. 2019, 2015; Palaiologos and P., P., & Panayotopoulou, L. 2011), but can also affect procrastination.

As the findings by Sharma (1999) confirmed that several factors influenced procrastination, including a fair management style, however, a fair management style is different from organizational justice. The fair management style focuses on managers (actors), while the organizational justice focuses more on organizational issues. Empirically stated by Karimi and Andam (2016); Khakpour (2018) that studies on the effect of organizational justice on procrastination have been analyzed in previous studies.

Furthermore (Khakpour 2018) in researching the effect of perceived organizational justice on procrastination using an organizational sociology perspective. The study was conducted with a non-experimental approach through questionnaires to 80 employees at the Payam Noor University of Hamedan India. The results of the study (Khakpour 2018) showed that there was a negative relationship between organizational justice variables and procrastination. In addition, the relationship between procedural justice and interactional justice with procrastination was significant.

Karimi and Andam (Karimi and Andam 2016) analyzed the relationship between job satisfaction and organizational justice on procrastination at the Sports Office Staff of Hamedan City, India. This study used a survey of 162 randomly selected employees. The collected data were analyzed using Pearson correlation and step-wise regression coefficient analysis. The results showed that there was a negative and significant relationship between distributive justice and procedural justice on

procrastination, however, the results of this study did not find any significant effect between interactional justice on procrastination behavior.

Empirically these studies strengthen the argument that employees who feel unfairly treated by the organization will be followed by procrastination, although the results of previous studies did not find consistency about which dimensions of organizational justice affect procrastination. Khakpour (2018) found that the three dimensions of justice, namely distributive justice, procedural justice, and interactional justice affected procrastination. In contrast to the results of previous studies (Karimi and Andam 2016), did not find a significant effect between interactional justice on procrastination. So far, empirical studies on the influence of organizational justice dimensions on procrastination have not found consistent results, therefore they can become an agenda for future research.

*Proposition 1. Organizational Justice has a Negative Effect on Procrastination Behavior*

### ***3.2 Effects of Organizational Justice, Psychological Contract Violation on Job Satisfaction***

The relationship between employees and the organization takes two forms, namely the form of a formal relationship (transactional) and an informal relationship (relational) (Ambrozini and Martinelli 2017; Baker et al. 2002). A formal relationship is a relationship based on a written employment contract that is agreed between the employee and the organization before the employee works in the organization. A written employment contract generally contains the rights and obligations (a reward-contribution system) of each party which has clear consequences in the event of a violation, a performance appraisal procedure, and regulates both parties to interact fairly.

The work relationship model between employees and the organization is not only regulated in formal contracts, but is also often regulated in unwritten agreements or psychological contracts (Gibson et al. 2012; McAuley et al. 2007). The work relationship between employees and the organization is based on an unwritten agreement in the form of hopes, and trust-based promises in the form of a psychological contract. Since the hopes and promises are only in the form of an unwritten agreement, the opportunity to fulfill or not fulfill the organizational promises is very open.

The initial concept of the psychological contract was introduced by Argyris (1960) and became popular in Rousseau's articles (Rousseau 1989, 2001). As stated by Argyris (1960) that employees tend to produce more optimal performance under more flexible work arrangements. Furthermore, Argyris also confirmed that employees will produce high production, low complaints, if supervisors guarantee and respect employees' informal cultural norms such as autonomy, namely letting employees organize themselves to earn adequate wages and have safe jobs. Then, for the first time, these models of the relationship between employees and organizations used the term psychological employment contract in describing the power of perceptions and values held by organizations and employees in the work relationship.

Although the psychological contract is part of justice, the psychological contract and organizational justice are different concepts. Organizational justice is an employee's perception (cognitive) related to the equality of rewards-contributions, procedures, interactions in the relationship between employees and the organization, and employees with other employees in other organizations. Psychological contracts are more specifically a commitment or "promise" to an unwritten agreement made by an employer that involves aspects of trust, relationship feelings, and reciprocal obligations.

Violation of the psychological contract can weaken the effect of fairness in formal contracts on job satisfaction. One of the studies on the psychological contract as a moderating variable of organizational justice on turnover behavior has been carried out by (Ekmekcioglu and Aydogan 2019) through a survey of 339 employees of financial institutions in Turkey. Another study was also conducted by (Choi et al. 2014) on 284 employees at 10 companies in South Korea who placed the psychological contract as a moderator of organizational justice towards extra-role behavior.

The psychological contract in the previous research (Ekmekcioglu and Aydogan 2019; Choi et al. 2014) was positioned as a moderator of the effect of organizational justice on turnover behavior and extra-role behavior. The reasons for the consideration of the two studies by Ekmekcioglu and Aydogan (2019); Choi et al. 2014) placed the variable of psychological contract violation as a variable of working relationship conditions based on social exchange (social norms). Psychological contract violation testing as a moderator is important because the employee's relationship to the organization is not only regulated in a fair agreement in a written contract (organizational justice), but also involves an unwritten agreement.

Previous studies (Abekah-Nkrumah and Atinga 2013; Tjahjono et al. 2019, 2015) generally found that organizational justice can have a direct effect on job satisfaction, however, the strength of its influence can be influenced by the violation of psychological contracts (Ekmekcioglu and Aydogan 2019; Choi et al. 2014). Psychological contracts as norms (agreements-agreement) in social relationships, therefore psychological contract breach can be a condition that weakens the effect of organizational justice on job satisfaction (Ekmekcioglu and Aydogan 2019; Choi et al. 2014). The effect of distributive justice on job satisfaction will be stronger in conditions if the psychological contract is fulfilled/not violated. This can then be formulated as follows.

*Proposition 2. Violation of the psychological contract moderates the effect of organizational justice on job satisfaction. The effect of organizational justice on job satisfaction will be weakened when there is a violation of the psychological contract*

## 4 Discussion

Employees who work in an organization are almost certain that they have procrastinated. This argument is supported by findings that say that procrastination by employees at work occurs in every organization, both government and private, small

and large scale, and even at almost all levels of the organization (Cadena et al. 2011). As if it has become a culture that everyone who works tends to procrastinate that actually has become their duty. Procrastination has become an employees' culture at work, thus those who often procrastinate have the potential to delay tasks that must be completed on other occasions (Cadena et al. 2011).

There are many ways of procrastination that employees do that cause a lot of time to be wasted, just to do activities that are not related to work to avoid heavier and more important tasks. Each employee has a different way of procrastination, this is because it is influenced by individual factors, tasks, time (Eerde and Katrin 2018), workload, and efforts to avoid work stress, (Beutel et al. 2016; Mohsin and Ayub 2014). Besides being influenced by individual factors, tasks, and time, organizational factors that overshadow them are also important factors for procrastination (Ferrari 2018). Different individuals with the same task and time in an organization will differ in finding ways of procrastination, and vice versa.

Deviations in work behavior such as short and long-time procrastination will have a negative impact not only on individual employees, but also on the organization in general (Nguyen et al. 2018). This theoretical argument is strengthened by Beutel et al. (2016) through the results of his study which found that, in the short term, tasks and work that were done in a rush because of a time limit would cause frequent revision that tended to be repeated in the next stage. Improvements or revisions are due to hasty tasks completion because of a short time target, and as an accumulation of logical consequences from previous procrastination.

Also, as a place of shelter and socialization for all employees, the organization cannot be ruled out in influencing the emergence of counterproductive behavior such as procrastination at work. In this context, the organization as a gathering place for people with various cultural and educational backgrounds can form a culture that influences the attitudes, actions, and behavior of employees in a positive or negative direction. Organizationally, the extent to which the actions and ways of the organization in treating employees are reflected in the attitudes shown by employees to the organization.

Actions that are felt to be unfair from the aspect of distribution, process/procedure, and equal rights in interacting by employees will encourage procrastination even though it is the employee's responsibility. This argument is strengthened by the opinion (Khakpour 2018) that distributive justice, procedural justice, and interactional justice influence procrastination. It is increasingly clear that how the organization treats employees will be shown by employees in completing the tasks for which they are responsible. Organizations that are perceived by employees as not paying attention and ignoring a sense of justice will be followed by procrastination at workplace as part of the impact due to non-fulfillment of the rights that employees should receive.

The work relationship between employees and the organization is built through two types, namely formal and informal. The formal relationships that are short-term oriented are related to things that are material-transactional and informal relationships that are long-term oriented and are non-material-relational (Ambrozini and Martinelli

2017; Baker et al. 2002). The formal relationships are based on a written employment contract that contains rights and obligations (a reward-contribution system) between the employees and the organization. The written employment contract clearly contains various consequences in the event of a violation between the two parties.

In addition to formal-written employment contracts, employee relationships with organizations are also built through unwritten agreements or psychological contracts (Gibson et al. 2012; McAuley et al. 2007). Work relationships that are based more on an unwritten agreement implicitly contain expectations and promises that are agreed upon based on trust in the form of a psychological contract. Basically, unwritten agreements and promises between employees and the organization also contain rights and obligations, including various consequences if one of the parties does not fulfill the contents of the psychological contract.

Since the psychological contract is only in the form of an unwritten agreement, the opportunity to fulfill or not fulfill organizational promises is very open. This is quite reasonable because essentially the psychological employment contract only describes the strength of perceptions and values held by the organization and employees in the work relationship. The weaker the perception and values of the organization to fulfill the rights of employees, the stronger the perception that there has been a violation of the psychological contract against the things that have been promised to employees.

In the context of organizational justice with its various dimensions, if employees feel that there has been a violation of their promises and expectations, even though it is not written, it will be a cause of employee dissatisfaction at work. This argument at the same time confirms the opinion by (Almansour 2012; Momeni 2014) that humans in certain behaviors are strongly influenced by the perception of justice they receive, both from the distributive and procedural aspects. More comprehensively, (Colquitt 2001) asserts that organizational justice is related to the extent to which employees perceive distributive, procedural, and interactional justice in the workplace. Distributive justice refers to the exchange of corporate resources as a social comparison between one individual to another.

Employees will feel treated fairly if the inputs given to the organization and the outputs received are the same as the inputs given to the organization and the outputs received by others. This argument also confirms the opinion by Robbins and Judge (2013) that distributive justice is related to the amount and reward among individuals in work. In terms of quantity and quality, giving awards in any form to the rights of employees must be distributed fairly because, if one employee receives different rights, then it will cause disappointment and even broadly will lead to job dissatisfaction.

Another dimension of organizational justice is procedural justice, namely justice that is oriented to the decision-making process on the results that every employee must accept. Procedural justice is more focused on how procedures are in making decisions, controlling processes, and settlement mechanisms that are seen as fair, open, consistent, and reasonable that involve employees in decision making (Yesil et al. 2013; Tjahjono 2011). The procedure used in every decision making regarding the rights and obligations of employees in the organization will be perceived that

there has been organizational injustice to employees. The determination and decision-making process that involves procedures for the distribution of justice, with its various dimensions that do not involve employees, will cause job dissatisfaction, both in the short and long term.

Furthermore, complementing the previous two dimensions, namely distributive justice and procedural justice, interactional justice is also an inseparable series because it involves how employees are treated in relationships with the organization. Distributively and procedurally, an employee may already feel that they have received their rights; however, if in the process of giving and interacting with an organization that does not uphold moral and ethical values, then it will be perceived by employees that the organization, through its leaders, has treated unfairly. The claim to this argument is confirmed by Bies and Moag (1986) which describes that interactional justice is a form or method of treatment received by employees from managers and the relationship between employees, and the relationship between the organization and employees (Gozukara and Yildirim 2016; Salman et al. 2016; Palupi and K T. 2016). Thus, the extent of the treatment received by employees in the organization will be reflected in the level of interactional justice.

## 5 Conclusion

Working is not only related to the return-contribution of economic resources, but also related to social aspects. The justice received by employees, both distributively, procedurally, and interactionally, can affect their attitudes and behaviors such as job satisfaction and procrastination. Procrastination is a behavior that often occurs in both government and private organizations. Organizational justice with its various dimensions can influence employee procrastination at work.

The relationship between employees and the organization is not only in the framework of a short-term written (formal-transactional) contract, but also a long-term unwritten (informal-interactional) contract as a psychological contract. In contrast to written employment contracts, unwritten employment contracts are more flexible, thus giving employees autonomy in self-regulation to produce adequate wages. The role of the psychological contract has the potential to complement a relatively rigid formal-written employment contract. Psychological contract breach can moderate the effect of organizational justice on job satisfaction through granting employees autonomy in providing resources that are difficult to regulate in formal contracts.



## References

- Ambrozini, L., Martinelli, D.: Formal and relational contracts between organizations: proposal of a model for analysis of the transactional and governance structure characteristics of comparative cases. *Revista De Administração*. **52**, 374–391 (2017). <https://doi.org/10.1016/j.rausp.2017.08.010>
- Baker, G., Gibbons, R., Murphy, K.J.: Relational contracts and the theory of the firm. *Q. J. Econ.* **117**(1), 39–84 (2002)
- Gibson, J.L., Ivancevich, J.M., Donnelly, J.H., Konopaske, R.: *Organizations: Behavior, Structure, Processes*, Fourteenth McGraw-Hill, New York (2012)
- Zenger, T.R., Lazzarini, S.G., Poppo, L.: Informal and formal organization in new institutional economics. *New Institutionalism in Strateg. Manage.* 277–305 (2015). <https://doi.org/10.1016/s0742>
- Karimi, Z., Andam, R.: The relationship between job satisfaction and organizational justice with procrastination (case study: sport boards of Hamedan city). *Sci. J. Organ. Behav. Manage. Sport Stud.* **3**(4), 99–110 (2016)
- Khakpour, A.: The role of perceived organizational justice in job procrastination. *J. Appl. Sociol.* **28**, 113–122 (2018)
- Chauhan, R.S., MacDougall, A.E., Buckley, M.R., Howe, D.C., Crisostomo, M.E., Zeni, T.: Better late than early? Reviewing Procrastination Organ. Manage. Res. Rev. **43**(10), 1289–1308 (2020). <https://doi.org/10.1108/MRR-09-2019-0413>
- Ferrari, J.R.: Perfectionism cognitions with nonclinical and clinical samples. *J. Soc. Behav. Pers.* **10**, 143–156 (1995)
- Steel, P.: The nature of procrastination: a meta-analytic and theoretical review of quintessential self-regulatory failure. *Psychol. Bull.* **133**(1), 65–94 (2007)
- Eerde, W., Klingsieck, K.: Overcoming procrastination? A meta-analysis of intervention studies. *Educ. Res. Rev.* **25**, 73–85 (2018)
- Kanten, P.: The antecedents of procrastination behavior: personality characteristics, self-esteem and self-efficacy. *Pressacademia*, **2**, 331–341 (2016). <https://doi.org/10.17261/Pressacademia.2016118653>
- Abekah-Nkrumah, G., Atinga, R.A.: Exploring the link between organisational justice and job satisfaction and performance in Ghanaian hospitals. *Int. J. Workplace Health Manag.* **6**(3), 189–204 (2013)
- Tjahjono, H.K., Fachrunnisa, O., Palupi, M.: Configuration of organisational justice and social capital : Their impact on satisfaction and commitment. *Int. J. Bus. Excellence* **17**(3), 336–360 (2019). <https://doi.org/10.1504/IJBEX.2019.097957>
- Tjahjono, H.K., Palupi, M., Dirgahayu, P.: Career perception at the republic Indonesian police organization impact of distributive fairness, procedural fairness and career satisfaction on affective commitment. *Int. J. Adm. Sci. Organ* **22**(2), 130–135 (2015)
- McAuley, J., Duberley, J., Johnson, P.: *Organization Theory: Challenges and Perspectives*. Prentice Hall, England (2007)
- Ferrari, J.R.: Introduction to “Procrastination, Clutter, and Hoarding”. *Curr. Psychol.* Springer Science+Business Media, LLC, part of Springer Nature (2018). <https://doi.org/10.1007/s12144-018-9803-0>
- Ferrari, J.R., Tibbett, T.P.: Procrastination. In: Zeigler-Hill, V., Shackelford, T.K. (eds.) *Encyclopedia of Personality and Individual Differences*, pp. 1–8. Springer Meteor Press, New York (2017)
- Cadena, X., Schoar, A., Cristea, A.: Fighting procrastination in the workplace: an experiment (Working Paper No. 16944). National Bureau of Economic Research (2011). <http://www.nber.org/papers/w16944.pdf>
- Gupta, R., Hershey, D., Gaur, J.: Time Perspective and procrastination in the workplace: an empirical investigation. *Curr. Psychol.* **31**, 195–211 (2012). <https://doi.org/10.1007/s12144-012-9136-3>

- Prem, R., Scheel, T., Weigelt, O., Siestrup, K., Korunka, C.: Procrastination in daily working life: a diary study on within-person processes that link work characteristics to workplace procrastination. *Front. Psychol.* **9**, 1087 (2018). <https://doi.org/10.3389/fpsyg.2018.01087>
- Nguyen, B., Steel, P., Ferrari, J.R.: Procrastination's Impact in the workplace and the workplace's Impact on procrastination. *Int. J. Sel. Assess.* **21**(4), 388–399 (2018)
- Beutel, M.E., Klein, E.M., Aufenanger, S., Brähler, E., Dreier, M., Müller, K.W., et al.: Procrastination, distress and life satisfaction across the age range – a German representative community study. *PLoS ONE* **11**(2), e0148054 (2016)
- Mohsin, F., Ayub, N.: The relationship between procrastination, delay of gratification, and job satisfaction among high school teachers. *Jpn. Psychol. Res.* **56**(3), 224–234 (2014)
- Kim, S., Fernandez, S., Terrier, L.: Procrastination, personality traits, and academic performance: when active and passive procrastination tell a different story. *Pers. Individ. Differ.* **108**, 154–157 (2016)
- Adams, J.S.: Toward an understanding of inequity. *J. Abnorm. Soc. Psychol.* **67**(5), 422–436 (1963)
- Palaiologos, A.P.P., Panayotopoulou, L.: Organizational justice and employee satisfaction in performance appraisal. *J. Eur. Ind. Train.* **35**(8), 826–840 (2011)
- Sharma, M.P.: Determinants of task procrastination: public vs private sector comparison. *Paradigm* **3**(1), 19–31 (1999)
- Argyris, C.: *Understanding Organizational Behavior*. Dorsey, Homewood (1960)
- Rousseau, D.: Psychological and implied contracts in organizations. *Empl. Responsib. Rights J.* **2**, 121–139 (1989). <https://doi.org/10.1007/BF01384942>
- Rousseau, D.: The Idiosyncratic deal: flexibility versus fairness? *Organ. Dyn.* **29**, 260–273 (2001)
- Ekmekcioglu, E.B., Aydogan, E.: A moderated mediation model of the relationship. *Int. J. Organ. Anal.* (2019)
- Choi, B.K., Moon, H.K., Ko, W., Kim, K.M.: A cross-sectional study of the relationships between organizational justices and OCB. *Leadersh. Org. Dev. J.* **35**(6), 530–554 (2014)
- Almansour, Y.M.: The relationship between organizational justice and innovative behaviour in Arab society. Evidence from a government department in Jordan the relationship between organizational justice components and innovative behavior in Arab society. Evidence from G. Middle-East *Journal of Scientific Research*, November 2014. <https://doi.org/10.5829/idosi.mejrs.2012.12.1.1620>
- Momeni, M.: Surveying the impact of inferential organizational justice on innovative work behavior. *Singaporean J. Bus. Econ. Manage. Stud.* **2**(9), 1–8 (2014)
- Colquitt, J.A.: On the dimensionality of organizational justice: a construct validation of measure. *J. Appl. Psychol.* **86**, 386–400 (2001)
- Robbins, S., Judge, T.A.: *Organizational Behavior*. Yagan, S. (ed.) Pearson Education, Inc., Prentice Hall, New Jersey (2013)
- Yesil, S., Dereli, S., F.: An empirical investigation of the organizational justice, knowledge sharing and innovation capability. *Procedia, Soc. Behav. Sci.* **75**, 199–208 (2013)
- Bies, R.J., Moag, J.F.: Interactional justice: communication criteria of fairness. *Res. Negotiations Organ.* **1**, 43–55 (1986)
- Gozukara, I., Yildirim, O.: Exploring the link between distributive justice and innovative behavior: organizational learning capacity as a mediator. *Int. J. Acad. Res. Account. Finan. Manage. Sci.* **6**(2), 61–75 (2016). <https://doi.org/10.6007/IJARAFMS/v6-i2/2042>
- Salman, M., Khan, M.N., Mufti, U., Islam, F., Aslam, A.: Impact of organizational justice and perceived creative performance mediating role of employee innovative. *Int. J. Sci. Res. Publ.* **6**(6), 490–495 (2016)
- Palupi, M. Heru, K.T.: A model of religiosity and organizational justice: the impact on commitment and dysfunctional behavior. In: *IBIMA Proceedings*, pp. 1781–1790. Milan, Italy (2016)
- Tjahjono, H.K.: The configuration among social capital, distributive and procedural justice and its consequences to individual satisfaction. *Int. J. Inf. Manage. Sci.* **22**(1), 87–103 (2011)

# The Impact of Working Capital Management on the Financial Performance of Industrial Companies Listed on the Palestine Stock Exchange



Alaa Akram Hosni Sulaiman and Hosni Shareif Hussein Shanak

**Abstract** This study aimed to test the impact of some working capital management indicators (such as average collection period, average storage period and average repayment period) on the financial performance of industrial companies listed in Palestine Stock Exchange during the period 2012–2018. The researchers meant to analyze the content of the financial statements of the industrial companies listed on the Palestine Stock Exchange as a study tool based on the annual reports of thirteen companies whose data were available during the period when this study was being conducted. The study findings showed that there was no impact of the working capital management represented in the average collection period on the financial performance of industrial companies listed on the Palestine Stock Exchange. A review of the results of the statistical analysis revealed an effect of (the average storage period and the average repayment period) on the financial performance of the companies listed on the Palestine Stock Exchange. One of the most important recommendations of the study is that industrial companies are supposed to review the collection policies by adopting credit policies that depend on the financial ability of customers to repay because this has an impact on the financial performance of companies. Thus, the results of the study showed that there was no effect of the collection period on the financial performance of companies.

**Keywords** Working capital management · Financial performance · Average collection period · Average repayment period · Average storage period

## 1 Introduction to the Study

In the early 1980's, Smith suggested that working capital management is essential because of its impact on a company's profitability and risk, and thus its value. It is

---

A. A. H. Sulaiman (✉) · H. S. H. Shanak  
Palestine Technical University, Kadoorie, Tulkarm 007, Palestine  
e-mail: [a.sulaiman@ptuk.edu.ps](mailto:a.sulaiman@ptuk.edu.ps)

H. S. H. Shanak  
e-mail: [h.shareif@ptuk.edu.ps](mailto:h.shareif@ptuk.edu.ps)

noteworthy that working capital is considered as something positive and influences the life of any economic activity, as it plays a pivotal role in the management of companies (Tahir & Anuar, 2016). In addition, investments in current assets and current liabilities represent an important share of items in the company's statement of financial position or stand where working capital management represents one of the main tasks practiced by modern financial management due to its impact, which is directly reflected on the performance of companies; besides, working capital management is an important element to maintain the continuity of operational processes in companies; it also helps in monitoring and planning processes on current assets and liabilities in a way that enables the company to reach good levels of working capital to achieve a balance between liquidity and performance (Singhania and Mehta 2017).

Working capital management requires studying the nature of the relationship between the financing mechanisms and the cost of financing, as current assets are usually financed from short-term liabilities; the difference between current assets and current liabilities is the net working capital that is financed from long-term sources of funds which may affect the profitability of the company due to the increase in the costs incurred by the company (Nguyen et al. 2020). As a result, the management of companies and stakeholders look with great interest at profitability and net working capital in order to improve financial performance (Altaf and Shah 2018). Therefore, this study came to clarify the impact of working capital management on the financial performance of companies listed on the Palestine Stock Exchange.

## 2 Statement of the Problem

The gist of the current study stemmed from the economic fluctuations and political crises that the world, in general, and Palestine, in specific, are witnessing. This increased the challenges and obstacles facing companies, which resulted in the tightening of the banking system in granting credit facilities. Consequently, companies had to follow appropriate means to enhance working capital management as an organized approach to maximize profitability. The importance of working capital is deemed significant as it not only helps in the sustainability of companies, but also goes beyond that to enhance profits and reduce risks (Al-Masry 2015; Towerish and abdallah 2018; Khashan and Masouda 2020). The efficiency of working capital focuses on achieving two main goals which are profitability and liquidity (Towerish and abdallah 2018). Hence, the study sought to find the means that help corporate management to use in order to enhance the impact of the basic components of working capital in improving profitability.

In our opinion, working capital management is important for companies because of the potentially high value of inventory and receivables. This situation may contribute to the production process itself for a long time and allow customers to defer payment of their dues. The interest in conducting this study in Palestine is attributed to several reasons or factors including the nature of the unstable conditions, the recurring political and financial crises, in addition to providing accurate information to owners

and financial managers in order to help in making the most appropriate decision in managing their business. And because managing working capital is important in the success or failure of companies or businesses, the researchers of this study attempted to answer the following questions:

1. Is there an impact of working capital management represented in the average collection period on the financial performance of industrial companies listed on the Palestine Exchange?
2. Is there an impact of working capital management represented in the average storage period on the financial performance of industrial companies listed on the Palestine Exchange?
3. Is there an impact of working capital management represented in the average repayment period on the financial performance of industrial companies listed on the Palestine Exchange?

### **3 Objectives of the Study**

Based on the statement of the problem, this study came to achieve the following objectives:

1. Studying the impact of working capital management represented in the average collection period on the financial performance of industrial companies listed on the Palestine Exchange.
2. Studying the impact of working capital management represented in the average storage period on the financial performance of industrial companies listed on the Palestine Exchange.
3. Studying the impact of working capital management represented in the average repayment period on the financial performance of industrial companies listed on the Palestine Exchange.

Importance of study:

The importance of the study stems from being one of the few studies that have been conducted to test the impact of working capital management on the financial performance of industrial companies listed on the Palestine Stock Exchange. The importance of the study is summarized in the following:

The study was meant to help the management of companies listed on the Palestine Stock Exchange to take rational decisions that would enable them to avoid crises and challenges that they may face as a result of poor working capital management, which could have a direct impact on the companies' liquidity and financial performance, which, in its turn, may affect its continuity. The importance of the study also stemmed from the importance of working capital management and the essential role it plays in maintaining the liquidity and stability of companies in a way that ensures the companies' survival and continuity in the long term. This research will also provide researchers with results that enable them to compare the results with the results of studies about other sectors, and the results of research in different countries.

## 4 Study Hypotheses

H0:1. There is no impact of working capital management represented in the average collection period on the financial performance of industrial companies listed on the Palestine Exchange.

H0:2. There is no effect of working capital management represented by the average storage period on the financial performance of industrial companies listed on the Palestine Exchange.

H0:3. There is no impact of working capital management represented in the average repayment period on the financial performance of industrial companies listed on the Palestine Exchange.

## 5 Theoretical Framework

Working capital management policies relate to decisions regarding current assets and current liabilities (Sensini and Vazquez 2021). (Al-Mosari 2020) indicated that working capital management is represented in the method of managing current assets and current liabilities which means that there must be interest in investment and short-term financing and harmony between them due to the fact that working capital management plays a vital role in business success because of its impact on profitability and liquidity (Jana 2018). Others researchers, such as (Al Dalayeen 2017; Maswadeh et al. 2020) have argued that working capital represents the main artery in the company; it is one of the most important elements that contribute to the survival of its work. Therefore, the efficiency in managing working capital is a necessary and continuous process through which the company's management seeks to achieve its goals in an efficient manner. Working capital management is also important for creating wealth or fortune for shareholders, as working capital management contributes to ensuring that the company is capable enough to continue its day-to-day operations and has sufficient capacity to pay future operating expenses and commitments in the short term, which helps in designing a framework for easing financial constraints for business to make efficient use of its resources (Al Dalayeen 2017). Consequently, achieving the optimal level of working capital through the trade-off between liquidity and profitability is an important matter in the daily operations of the company, as it guarantees the high level of efficiency in working capital management ensures the continuity of the company's operations for a longer period of time (Ng et al. 2017). (Radi 2009) showed that financial analysts are concerned with working capital as an indicator of the company's efficiency in managing its liquidity and operational transactions. The decrease in working capital is an indication of the company's weak ability to pay its obligations and the high level of risk. On the one hand, the high increase of the working capital indicates that the company is inefficient in managing its operational transactions due to lack of sales or the inability to collect its debts. And (Pham et al. 2020) argued that working capital can be considered as

a financial source for a company to pay its current or short-term obligations. Moreover, working capital is not only a good ratio of the current financial position of the company but also a measure of its overall performance. (Samiloglu and Akgün 2016) also added that the main objective of working capital is to ensure that companies have sufficient cash flow to continue normal operations in a way that reduces the risk of not being able to pay short-term obligations. Furthermore, managers should try to avoid the necessary investment in working capital. (Arunkumar and Ramanan 2013) stated that managing working capital is an important financial decision for a company because it directly affects the company's liquidity and profitability.

It is really important to manage working capital through its various components in order to secure the financial soundness of companies in various industries. In addition, the working capital elements in this study include (average collection period, average storage period, average receivable payment period).

## 6 Review of Literature

ALShubiri (2011) conducted a study that aimed to examine the impact of working capital on the profitability and risks of Jordanian industrial companies listed on the stock exchange for the period from 2004–2008. The sample of the study consisted of 59 companies. The working capital was measured through the impact of aggressive policies and policies of investment and financing portfolios of working capital on the profitability and risks of the company. The study results indicated that there is a negative relationship to the impact of aggressive and financing policies and investment portfolios for working capital on the profitability of companies. In addition, the study showed that there is no relationship between the levels of current assets and liabilities and corporate risks.

Al-Masry (2015) carried out a study that aimed to clarify the relationship between working capital management and the profitability of 12 industrial companies listed on the Palestine Stock Exchange during the period 2010–2014. The study independent variables were the average inventory transfer period, the average payment period, the average collection period, and the dependent variable was represented in the operational rate of return on assets. Simple and multiple regression were used to examine the relationship were represented by the operating rate of return on assets, simple and multiple regression was used to examine the relationship. The study concluded that there is an inverse relationship between the operational rate of return and each of the average collection period and the cash transformation cycle. As for the relationship with the average period of inventory transfer and the average payment period, it is not statistically significant; besides, there is a direct relationship between the volume of investment in working capital and low liquidity risk, on the one hand, and the rate of return on assets, on the other hand.

Amponsah-Kwatiah and Asiamah (2020) meant to examine the impact of working capital management on the profitability of 20 industrial companies listed on the Ghana Stock Exchange during the period (2015–2019). The independent variables

consisted of inventory management, payable repayment period, receivable collection period, and cash transfer period, while the dependent variable represented the total return on assets and return on equity. The study findings concluded that all independent variables have a positive impact on the profitability of companies. The study recommended that industrial companies should follow an effective working capital management policy in order to help improve corporate profits.

Another study conducted by (Ahmad et al. 2014) sought to know the impact of working capital on the performance of cement, chemical, and engineering sector companies in Pakistan in the period (2007–2011). Data were collected from the published annual reports of these companies, and simple regression analysis was used to determine the relationship between the variables. The study results showed that there is a positive relationship between the average collection period, the operational cycle, and the cash transition period with the return on equity. While the repayment period has a negative impact with the return on equity, and, therefore working capital management has an impact on the profitability of companies. The study recommended giving more time to manage the cash transformation cycle and developing strategies to enhance the efficiency of working capital, in addition to using financial experts to develop plans that contribute to the effective management of working capital in order to improve profitability for companies.

Jakpar et al. (2017) did a study to identify the relationship between working capital management and the profitability of 164 industrial companies listed on the Malaysian Stock Exchange in the period from 2007 to 2011. The independent variables included the cash transfer cycle, the average collection period, the inventory transformation period, the debt ratio, while the dependent variable was only the return on assets. Correlation analysis was used to find the relationship between the variables. The study found a positive and important relationship between the average collection period and the period of inventory transformation on the profitability of companies. While there was an inverse relationship between the ratio of indebtedness and corporate profitability. As for the cash transition cycle, it had no effect on the profitability of companies.

Sensini and Vazquez (2021) sought to know the impact of working capital management policies on the profitability of the 326 small and medium-sized Argentine agricultural and industrial companies. The independent variables were represented by the monetary transition period, the collection period cycle, and the repayment period, while the dependent variable represented in profits before taxes, interest, depreciation and amortization divided by the total Assets. Data were collected using a questionnaire. The study found an inverse relationship between the independent variables and the dependent variable. The study recommended that investing in inventory needs a greater extension from suppliers, and this leads to an additional cost that cannot be compensated with additional benefits.

Yusuf (2019) carried out a study which aimed to examine the impact of working capital on the profitability of 20 industrial companies listed on the Istanbul Stock Exchange and working in the petroleum, chemical, and plastic sectors during the period from 2012 to 2016. The independent variables were collection period, inventory transformation, receivable payment period and monetary transformation. The



dependent variable was the rate of return on assets and the rate of return on equity. The study found a positive relationship between the period of collection of receivables and profitability. There was a negative relationship between the inventory transformation period and profitability; if companies keep excess stock because, this leads to inefficient profits, while if the inventory retention period is shortened, this leads to enhanced profits. The researcher recommended shortening the variables of the cash transition cycle and the creditors' repayment period, in addition to building a strong connection between purchasing, production and marketing departments to strengthen entire business operations and overcome scarcity or surplus inventory.

Moussa (2018) conducted a study that aimed to know the impact of working capital on the profitability of 68 industrial companies listed on the Egyptian Stock Exchange during the period from 2000 to 2010. Two models were used. In the first model, the relationship between the monetary transformation cycle and the rate of return on assets was examined. To measure the independent variable, the cash transition cycle was used. For the dependent variable, the rate of return on assets was used. While the second model examined the relationship between the cash transformation cycle and company's value Tobin's Q. The cash transition cycle was used to measure the independent variable, while Tobin's Q was used to measure the company's value. The study found a positive relationship between the company's performance and the length of the cash transition cycle. The study recommended the need for policy makers in Egypt to improve the awareness of managers and shareholders of the benefits of working capital management.

Högerle et al. (2020) sought to examine the impact of working capital management on the profitability of the company and the value of shareholders in the 115 listed companies in Germany during the period from 2011 to 2017. The researcher meant to measure the independent variables including the cash transition cycle, the repayment period, the inventory transformation cycle, and the refining cycle. While the dependent variable was measured by the rate of return on capital employed. The study concluded that the short cash conversion cycle had a positive impact on the profitability of the company and the value of shareholders. The study also recommended the need to give managers a higher priority to improve working capital, even if it is in a low-interest environment.

Another study carried out by (Maswada et al. 2020) aimed to know the impact of working capital management on the profitability of industrial companies listed on the Amman Stock Exchange from the period 2008 to 2013. The study was applied to a random sample consisting of 25 industrial companies to measure the variables of the study: the independent variables were by represented the average storage period, average collection period, average payment period, and the cash transition cycle. While the dependent variables included rate on assets, the rate of return on equity, and the operating profit margin were used. The study concluded that there was a positive relationship between the study variables. The researchers recommended the necessity of increasing the interest of industrial companies in managing working capital in all its components when carrying out the various operational transactions of the company.

Another study conducted by (Alhashiem and Raheem 2021) sought to identify the impact of working capital on the profitability of Saudi Stock Exchange companies that work in the food production sector from the period 2015 to 2019; the chosen companies were (Al-Asmak Company and Wafra Company). The independent variable was measured through the trading ratio. While the dependent variable was studied through return on equity and earnings per share. Multiple regression analysis was used to measure the variables. The study found a positive relationship between working capital and the rate of return on equity. While there was no relationship between working capital management and earnings per share in addition to the existence of a discrepancy between the companies in the return on equity; this could be attributed to the difference in the management of the working capital components policies in the two companies.

Al-Mousawi (2020) conducted a research that sought to demonstrate the impact of working capital on the profitability of Iraqi telecommunication companies listed in the Iraqi Stock Exchange during the period from 2011 to 2018. The study used to measure working capital the trading ratio, the ratio of total working capital, and the ratio of net working capital to measure working capital. While profitability was measured by the rate of return on assets, the rate of return on equity, and the rate of return on sales. To measure the study variables, regression analysis was used. The study concluded that there was no correlation between the study variables.

A similar study conducted by (Oladimeji and Aladejebi 2020) aimed at clarifying the impact of working capital on the profitability of small and medium-sized companies in Nigeria. To achieve the objectives of the study, the independent variables were measured through the inventory transformation period, the average repayment period, the cash transition cycle, the indebtedness ratio, the trading ratio, and the quick liquidity ratio. While the dependent variable was measured by the rate of return on assets. The quantitative data of the selected companies were analyzed during the period from 2014 to 2018. The results showed that there was no relationship between working capital and corporate profitability. The study recommended the need to review the payment and collection policy in institutions, in addition to those companies getting a longer period in paying for goods and services to improve financial performance.

Twerish and ewad (2018) did a study that aimed at examining the relationship between working capital and the profitability of Jordanian industrial companies listed on the Amman Stock Exchange during the period from 2003 to 2012. Working capital was measured through the following variables: the cash transfer cycle, the average collection period, the average storage period, and the average payment period. The dependent variable was represented by the rate of return on assets and the rate of return on equity. The researcher used correlation analysis and multiple regression analysis to measure the variables. The results showed an inverse relationship between the variables of the study. The study recommended the importance of shortening the period of monetary transformation, promoting the principle of balance between liquidity and profitability, as well as using the most efficient methods of managing working capital.

## **7 What Distinguishes the Study from Previous Studies?**

Previous studies showed the existence of a relationship between working capital management and the financial performance of companies with a difference in the methods of measuring financial performance between studies around the world. This confirms and proves that efficiency in managing working capital enhances the financial performance of companies. It is worth noting that efficiency in managing working capital lies in reducing the average inventory period and the average collection period, which positively affects the financial performance of companies. This study came as a supplement to the literature on this subject. It is also a matter of adding a new guide on the relationship between working capital management and the financial performance of industrial companies listed on the Palestine Stock Exchange which is located in an unstable, fluctuating economic and political environment that is different from, the environment of other Stock Exchange markets that were investigated in previous studies, in terms of economic and political developments and the nature of the financial market in which Palestinian companies operate.

## **8 Study Population and Sample**

The study population consists of the 13 industrial companies listed on the Palestine Stock Exchange during the period from 2012 to 2018. The financial statements were obtained from the financial statements of the industrial companies published on the website of the Palestine Stock Exchange. The analysis is based on annual data, as the number of views reached (91).

## **9 Study limitations**

One of the most important determinants of the study was the inability of researchers to use the data of other sectors due to there is no inventory in the service and financial sectors, which was necessary to calculate one of the variables, which is the average storage period.

## **10 Supported Statistical Methods**

Simple regression analysis was used to test the hypotheses of the study, and descriptive analysis was used to clarify some descriptive measures of the study variables.

## 11 Study Variables and How to Measure Them

The study aimed to examine the impact of working capital on the profitability of companies, and the study variables were selected based on a review of previous literature.

### 1. Dependent variable:

Financial performance: Ichsan et al. (2021) defined financial performance as a measuring tool to know the process of implementing the financial resources owned by the company. The financial performance was measured through Tobin's q, using the following equation.

$$\text{Financial performance} = \text{market value of the company} \div \text{book value of the company}$$

### 2. Independent variables:

#### 1-Average collection period

Previous studies such as (Al-Armouti 2017) and (Tawerish 2018) indicated that investment in receivables is one of the vital basic elements that constitute working capital in business companies. The objective of accounts receivable management is to determine the terms of credit, to avoid the accumulation of receivables by setting an appropriate policy for collection, and to ensure flexibility with caution in granting credit or collection to achieve the maximum possible sales and attracting customer affiliation (Tawerish 2018). Accordingly, criteria must be developed to classify customers in terms of reputation and financial ability to meet obligations based on the analysis of customers' financial statements.

Samiloglu and Akgün (2016) stated that managers must create shareholder value by reducing the collection period for receivables. Others, such as (Manzoor 2013) and (Hoang, 2015), added that there is a negative relationship between the length of the collection period and the profit margin. However, other studies (Nimalathan and others 2010) and (Vural et al. 2012) found that there is a positive relationship between the period of collection of receivables and profitability that is calculated by the following equation:

$$\text{Average Collection Period} = (\text{Average Accounts Receivable} \div \text{Net Sales}) * 365$$

#### 2- Average storage period

Inventory is one of the main components of current assets, and because of its importance, companies' management seeks to control it; the decrease in the average storage period is very likely to lead to a delay in production, while any possible increase in it may cause the value of the surplus stock not to be invested (Towerish and abdallah 2018). There are many factors that affect the determination of the amount of inventory that must be kept, including the company's sales volume, the length of the storage period, in addition to the useful life of the goods (Maswada et al. 2020).

The main objective of inventory management lies in the extent of the company's ability to reduce the risk of stock running out, and thus help the company to facilitate the stages of production, sale and distribution; this why the management of various companies has sought the need to maintain an appropriate level of inventory, which, by its turn, leads the company to reduce the costs of keeping inventory to the lowest possible level (Al-Nuaimi and Al-Kharsha 2015). Arnaldi et al. (2021) indicated that maintaining a higher stock level protects the company from the fluctuation of purchase prices for inputs in the production process. It indicates that investing in inventory and getting more time from suppliers leads to additional costs that negatively affect profitability. Maswada and Khashan (2016) showed that inventory management has a positive impact on the operating profit margin. To calculate this variable, the following equation was used:

$$\text{Average Storage Period} = (\text{Average Inventory} \div \text{Cost of Goods Sold}) * 365$$

### 3- Average repayment period.

The average repayment period is the average time period between the purchase of goods on account from suppliers and the payment of the resulting obligations (Rahaman et al. 2018). Previous studies such as Egbide, Enyi and Uremadu (2012), Şamiloğlu (2016) have shown that there is a negative relationship between the payable period and the profitability, which means that with the increase in the payable period the profitability decreases. In light of this, most companies seek to harmonize between delaying the payment of creditors to the maximum extent possible without harming the company's credit reputation. The following equation was used to calculate this variable:

$$\text{Average Repayment Period} = (\text{Average Payables} \div \text{Net Purchases}) * 365$$

## 12 Study Results

This part of the research aims to review the results of the statistical analysis of the data for the study and test its hypotheses using a set of necessary tests to verify the validity of the study data, in addition to using multiple regression analysis to test the hypotheses.

After collecting the study data, and depending on the appropriate statistical methods, the data collected was analyzed in order to reach the results. This part consists of two sections. The first reviews the descriptive analysis of the study variables through the use of descriptive statistical measures such as mean, standard deviation, highest and lowest value in order to describe the study sample in a way that illustrates the reality of its data. As for the second section, the hypotheses of the study were tested by calculating the coefficients of the linear regression model and discussing the results, using Stata which is a statistical program.

Table 1 Above presents the results of the descriptive analysis of the study variables (the average collection period, the average storage period, the average payment period, in addition to the measure of financial performance Tobin’s-q). The highest value of the average collection period was (87), while the lowest value was 29, and this indicates the presence of dispersion in the study sample, making the standard deviation to be (15,547). Table 1 above also shows that the standard deviation increased, reaching (104.452), which indicates the presence of relative dispersion in the data of the study sample. It can be noticed that the highest value of the average storage period reached (365), while the lowest value reached (29). It is also clear, in view of the above table, that the average repayment period amounted to (67) and its standard deviation reached 11.411, which indicates the existence of relative dispersion in this average in the study data, where the highest value for the average repayment period appeared (88), while the lowest value was (47), as for the tobin’s-q financial performance scale.; the mean is (67), while the highest value is (2.33) and the lowest value of (0.535).This indicates the presence of dispersion in the study data and led to the standard deviation to be (11).

The researchers used the Pearson correlation matrix to assess the correlation between the independent variables in addition to the correlation between those variables and the dependent variable; the results of this analysis are shown in Table 2 below:

TQ refers to the dependent variable, which is the financial performance as measured by Tobin’s-q, ACP refers to the average collection period as an independent variable, ITO refers to the average storage period as an independent variable, and APP refers to the average repayment period as an independent variable. When looking at the statistical data shown in Table 2, it is possible to note the following:

**Table 1** Results of the descriptive analysis of the study variables

	Mean	Median	Min	Max	Std. Dev	Skewness	Kurtosis
ACP	52.044	49	28.732	86.689	15.547	0.74	2.653
ITO <sup>2</sup>	172.232	145.871	29.21	365	104.452	0.358	1.987
APP	67.242	67	47	88	11.411	0.263	2.178
TQ	1.195	1.147	0.535	2.33	0.406	1.378	4.936

Section one: the results of the descriptive analysis.

**Table 2** Pearson Correlation Matrix

Variables	(1)	(2)	(3)	(4)
(1) TQ	1.000			
(2) ACP	0.217	1.000		
(3) ITO	-0.122	0.488	1.000	
(4) APP	0.291	0.581	0.264	1.000

1. There is a statistically significant relationship among the three independent variables represented by the elements of the efficiency of working capital management, while there is a discrepancy in the strength of the correlation between them, as the strongest correlation coefficient (0.581) was between the variable APP, i.e. the average payment period, and the variable ACP, which is the average collection period, while the lowest correlation coefficient between ITO, i.e. the average storage period, and the variable TQ, i.e., financial performance, as measured by Tobin's-q.

2. There is also a statistically significant relationship with varying values of the correlation coefficient between the dependent variable represented in financial performance, and each of the independent variables represented in the elements of working capital management.

Test hypotheses of the study:

This section presents the results of testing the hypotheses of the study; the results are shown in Table 3 Below.

First: The results of the first hypothesis test, which states that “there is no effect of working capital management represented by the average collection period on the financial performance of industrial companies listed on the Palestine Stock Exchange.”

Since the p-value was 0.086, and this value is greater than the significant level of the test, which is 0.05, then the first null hypothesis,  $H_01$ , must be accepted. This means that there is no impact of working capital management represented by the average collection period on the financial performance of industrial companies listed on the Palestine Stock Exchange. The result of this hypothesis is inconsistent with the results of previous studies, and the reason for this conflict may be due to the different nature of the study community and the different time period in which the study was conducted.

Second: The results of the second hypothesis test, which states that “there is no effect of working capital management represented by the average storage period

**Table 3** Results of test hypothesis

TQ	Coef	St.Err	t-value	p-value	[95% Conf	Interval]	Sig.
ACP	0.006	0.003	1.74	0.086	-0.001	0.012	*
ITO	-0.001	0	-2.64	0.01	-0.002	0	***
APP	0.009	0.004	2.27	0.026	0.001	0.016	**
Constant	0.516	0.306	1.69	0.095	-0.091	1.124	*
Mean dependent var	1.195	SD dependent var				0.406	
R-squared	0.154	Number of obs				91.000	
F-test	5.010	Prob>F				0.003	
Akaike crit. (AIC)	85.827	Bayesian crit. (BIC)				95.871	

\*\*\* p<0.01, \*\* p <0.05, \* p <0.1

on the financial performance of industrial companies listed on the Palestine Stock Exchange.”

Looking at Table 3, the p-value related to the second hypothesis appears to be 0.01, which is less than the significant level of the test, which is 0.05; this indicates the rejection of the null hypothesis and the acceptance of the alternative hypothesis, meaning that there is a relationship between the working capital management represented in the average storage period and the financial performance of companies. The results of the current hypothesis are in agreement with the results of previous studies.

Third: The results of the third hypothesis test, which states that “there is no effect of working capital management represented in the average repayment period on the financial performance of industrial companies listed on the Palestine Exchange.”

Looking at the results table of hypotheses test No. (3), it can be observed that the p-value of the third hypothesis amounted to 0.026, i.e. less than the moral level (0.05), and this indicates the rejection of the null hypothesis and acceptance of the alternative hypothesis, meaning that there is a relationship between working capital management represented in the average repayment period and the financial performance of the industrial companies listed on the Palestine Stock Exchange. Such a result is consistent with the results of previous studies.

#### Recommendations:

Based on the results of hypothesis testing and data analysis, the researchers of the current study recommend the following:

1. The industrial companies are supposed to review the collection policies by following credit policies that depend on the financial ability of customers to repay. Because this has an impact on the financial performance of companies. The results of the study showed that there was no effect of the collection period on the financial performance of companies.
2. The industrial companies must study of controlling variables such as the size of the company and the type of ownership to show the impact on the relationship between working capital management and the financial performance of companies.
3. Researchers are supposed to conduct more studies to include other economic sectors, including other economic sectors such as the financial and service sectors.
4. Researchers are supposed to carry out more studies using other measures of financial performance, such as return on assets and return on equity.
5. Researchers should do more studies using other measures to manage working capital, such as the trading ratio.
6. The researchers recommend that more studies should be conducted on the issue of working capital management using other variables to find out the largest possible number of variables that affect working capital management. In addition to applying the current study to other sectors and other societies.

**Acknowledgements** The author would like to thank the Palestine Technical University-Kadoorie for their financial support to conduct this research.



## References

- Al-Nuaimi, A., Al-Kharsha, Y.: *Fundamentals of Financial Management*, 2nd edn. Dar Al Masirah for Publishing, Distribution and Printing, Amman, Jordan (2015)
- Ahmad, N., Nadeem, M., Hamad, N.: Impact of working capital on corporate performance a case study from cement, chemical and engineering sectors of Pakistan. *Arab. J. Bus. Manage. Rev. (OMAN Chapter)* **3**(7), 12 (2014)
- Al -Dalayeen, B.: Working capital management and profitability of real estate industry in Jordan: an empirical study. *J. Appl. Finan. Bank.* **7**(2), 49 (2017)
- Al-Masry, M.Z.: *The Relationship Between Working Capital Management and Corporate Profitability: an Analytical Study*, Unpublished Master's Thesis. Islamic University, Gaza-Palestine (2015)
- AL-Shubiri, F.N.: The effect of working capital practices on risk management: evidence from Jordan. *Glob. J. Bus. Res.* **5**(1), 39–54 (2011)
- Arnaldi, A., Novak, B., Roscigno, R., Zhang, W.: Working capital management and profitability: empirical evidence. *Int. J. Bus. Manage. Econ. Res.* **12**(2), 1911–1917 (2021)
- Arunkumar, O.N., Ramanan, T.R.: Working capital management and profitability: a sensitivity analysis. *Int. J. Res. Develop.* **2**(1), 52–58 (2013)
- Egbide, B.C., Enyi, P.E., Uremadu, S.O.: Working capital management. Liquidity and corporate profitability among quoted in Nigeria: evidence from the productive sector. *Int. J. Acad. Res. Account. Financ. Manage. Sci.* **2**(1), 80–88 (2012)
- Hoang, T.V.: Impact of working capital management on firm profitability: the case of listed manufacturing firms on Ho Chi Minh stock exchange. *Asian Econ. Finan. Rev.* **5**(5), 779 (2015)
- Högerle, B., Charifzadeh, M., Ferencz, M., Kostin, K.B.: The development of working capital management and its impact on profitability and shareholder value: evidence from Germany. *Strateg. Manage.* **25**(2), 27–39 (2020)
- Jana, D.: Impact of working capital management on profitability of the selected listed FMCG companies in India. *Int. Res. J. Bus. Stud.* **11**(1), 21–30 (2018)
- Jakpar, S., Tinggi, M., Siang, T.K., Johari, A., Myint, K.T., Sadique, M.: Working capital management and profitability: evidence from manufacturing sector in Malaysia. *J. Bus. Finan. Aff.* **6**(2), 1–9 (2017)
- Manzoor, H.: Working capital management and profitability: evidence from cement sector of Pakistan, listed on Karachi stock exchange. *J. Bus. Adm. Manage. Sci. Res.* **2**(10), 215–223 (2013)
- Moussa, A.A.: The impact of working capital management on firms' performance and value: evidence from Egypt. *J. Asset Manag.* **19**(4), 259–273 (2018)
- Nimalathasan, B.: Working capital management and its impact on profitability: a study of selected listed manufacturing companies in Sri Lanka. *Manager* **12**, 76–82 (2010)
- Oladimeji, J.A., Aladejebi, O.: The impact of working capital management on profitability: evidence from selected small businesses in Nigeria. *J. Small Bus. Entrep.* **8**(1), 27–40 (2020)
- Pham, K.X., Nguyen, Q.N., Nguyen, C.V.: Effect of working capital management on the profitability of steel companies on Vietnam stock exchanges. *J. Asian Finan. Econ. Bus.* **7**(10), 741–750 (2020)
- Radi, H.: The relationship between working capital management and profitability in companies, an analytical study in a sample of Iraqi industrial companies. *Al-Qadisiyah J. Adm. Econ. Sci.* **11**(4) (2009)
- Samiloglu, F., Akgün, A.İ.: The relationship between working capital management and profitability: evidence from Turkey. *Bus. Econ. Res. J.* **7**(2), 1 (2016)
- Sensini, L., Vazquez, M.: Effects of working capital management on sme profitability: evidence from an emergent economy. *Int. J. Bus. Manage.* **16**(4), 85–95 (2021)
- Towerish, A.: Working capital and its impact on profitability: an applied study on Jordanian industrial companies. *Arab J. Manage.* (2018)

Vural, G., Sökmen, A.G., Çetenak, E.H.: Affects of working capital management on firm's performance: evidence from Turkey (2012)

Yusuf, M.B.: The impact of working capital management practice on firm profitability: an evidence from manufacturing firms in Istanbul stock exchange. *J. Int. Soc. Res.* **12**(62), 1645–1655 (2019)

# The Impact of Ownership Concentration on Stock Performance in the Palestinian Firms Listed in the Stock Exchange



Suhair I. Shumali  and Mohammad K. Abuamsha 

**Abstract** This study aimed to investigate the impact of corporate governance specifically, ownership concentration on stock performance of all firms listed in the Palestinian Stock exchange, 220 observations from a total of 44 firms between the years 2016–2020, was taken, panel data method was used and the pooled Ordinary least squares (OLS) method was used, the results show that there was a positive and significant relationship between managerial ownership, large ownership and foreign ownership and stock performance, there is a negative significant relationship between foreign ownership and stock performance (MV/BV) in the Palestinian Stock Market.

**Keywords** EPS · P/E · MV/BV · Large ownership · Foreign ownership · Managerial ownership

## 1 Introduction

Some researchers chronicle the need for corporate governance with the financial problems of major companies, this led to the urgent need for certain customs and controls and principles in order to achieve credibility and confidence in the information contained in the financial statements (Bhagat and Bolton 2019). However, corporate governance measures are far from being a response to financial crises. Abuamsha (2021) corporate governance procedures have only emerged since public shareholding companies and agency theory emerged (Urbanek 2020). Nor did the corporate Law in Palestine give a clear definition of the duties of the members of the Board of Directors (Karsh and Dua'a 2019; Aluchna and Kaminski 2017). This situation is likely to cause apparent confusion when holding the administration accountable for its actions (Abdeljawad and Masri 2020). Therefore, we note that the

---

S. I. Shumali

Industrial Administration Department, Palestine Technical University-Kadoorie, Tulkarm, Palestine

M. K. Abuamsha (✉)

Computerized Banking & Financial Science Department, Palestine Technical University-Kadoorie, Tulkarm, Palestine

e-mail: [m.abuamsha@ptuk.edu.ps](mailto:m.abuamsha@ptuk.edu.ps)

corporate law in Palestine has given the so-called basic rights of shareholders, which made the concentration of ownership and control in the hands of major shareholders, and thus this control process will lead to the acquisition of major shareholders gains at the expense of the minority (Shaheen and Jaradat 2019; Carney et al. 2019), it is for this reason that shareholders are advised to seek ways to provide them with legal remedies and protections from major shareholders from undermining their rights. These means, legal rights as necessary procedures are not available in the Jordanian corporate law adopted in Palestine as required (Kamal Abu Amsha 2017), even though they must be available to shareholders and subject to certain conditions to avoid excessive litigation. The researchers believe that there is a controversial relationship between corporate governance and performance (Driffield et al. 2018), which resulted in three types of performance, namely financial performance, (Lin and Fu 2017) operational performance, and stock performance in the market, and as a result of this study will contribute in measuring the impact of corporate governance (concentration of ownership) on stock performance in the Palestinian firms listed in the stock exchange.

The structure of this study contain: First literature review about the ownership concentration, second the methodology and the hypotheses of the study, third the statistical analysis and finally the results and conclusion.

## 2 Literature Review

Corporate governance procedures and structures defer from one country to another. It can be categorized based on the degree of ownership, into two main categories; widely dispersed ownership and concentrated ownership or control, corporate ownership is an important form corporate governance (Danoshana and Ravivathani 2019). When ownership is dispersed, the control that the shareholders have is weak, due to the high costs of monitoring compared to the low benefits they will get, this type of ownership does not encourage shareholders to address the managerial problems in the company (Matinez-Garcia et al. 2020). On the other hand, with concentrated ownership, shareholders that have a large stake in the firm monitor the management more effectively and play a crucial role in the process. Concentrated ownership is the most common form of ownership in Palestine, where the majority of firms are largely owned by either families or corporate groups, concentrated ownership was found to be dominant in firms in developing countries, (Dah et al. 2016) found that 67.2% of companies listed in the Malaysian stock exchange are family owned, were (Shleifer et al. 1999) found that 64% of firms in 27 countries have concentrated ownership. Controlling ownership may reduce the conflicts between shareholders and managers, because managers are effectively monitored by large shareholders (Ho et al. 2020; Akben-Selcuk 2019). On the other hand, large ownership might increase the conflicts between minority shareholders and large shareholders where large shareholders tend to steer the company depending on their interests (Hegde et al. 2020). An efficient system of corporate governance will reduce conflicts between controlling and minority shareholders. It also protects investors from managers who

act according to their self-interest, and from corruption and theft (Haghighi and Gerayli 2019; Huang 2020). Effective corporate governance is an important driver for sustainable growth and long-term competitive advantage (Mwatata et al. 2019). Foreign ownership is “the percentage of shares that are owned by foreign investors in local companies” (Pasali and Chaudhary 2020; Hamdan 2018), the role of foreign investors has been debated for a long time in the domestic securities market for emerging economies (Nofal 2020). Both regulators and researchers have researched the benefits and downsides of foreign investors in the local securities market because in general they are believed to have more accurate information than local investors (Lindemanis et al. 2019). This leads to lower market liquidity because of the local investor’s hesitation to trade in the presence of more informed traders. However, if foreign investors do not have this advantage, the local investors could benefit from the lower trading costs (Al-Gamrh et al. 2020). Additionally and according to (Shan et al. 2019), conflicts arise between managers and shareholders due to managers holding less than 100 percent of the residual claim. This cause’s the managers bearing the entire cost of their profit enhancement activities with less gain, for this reason, the managers will give less effort managing resources and attempt to transfer them for their own benefits. This inefficiency can be reduced when managers own a large percentage of the firm’s equity. Thus, increases in managerial ownership can align manager’s interests of with shareholders’ interests (bin Hidhiir et al. 2019). “For instance, (Awuor et al. 2017) found that the value of the firm increases when managerial ownership increases and (Berke-Berga et al. 2017) study also found that there is a positive effect on the firm value from the managerial ownership, however, (Fabisik et al. 2018) found that this is not the case and that the firm value decreases when the managerial ownership increases. This study will investigate the relationship and effect that ownership concentration has on stock performance in the Palestinian stock exchange, in an effort to shed light on the corporate governance practices used in Palestinian firms and ownership types in those firms and to recommend the best ownership type and structure for achieving optimal performance.

### 3 Research Hypotheses

Based on the above arguments, the following hypotheses are proposed: Main hypotheses: There is a positive and significant relationship between Ownership concentration and Stock performance in the Palestinian Stock Market.

**H1:** There is a positive and significant relationship between foreign ownership and Stock performance in the Palestinian Stock Market.

**H2:** There is a positive and significant relationship between Managerial ownership and Stock performance in the Palestinian Stock Market.

**H3:** There is a positive and significant relationship between large ownership and Stock performance in the Palestinian Stock Market.

### **3.1 Data and Methodology**

#### **3.1.1 Data**

The aim of this paper is to testing whether ownership concentration effects corporate governance of Palestinian firms. Relevant Data to ownership concentration were taken from the annual reports of firms listed on the Palestine Stock Exchange (PSE) Palestine Territories during 2016–2020. Every listed firm is bound to organize its financial statements in accordance with company's laws in Palestine Territories. Relevant data from PSE where taken according to performance of profit from the annual reports. There is 48 companies listed in PEX, we element 4 companies because data is incomplete, consists of 220 observations for 44 firms over a period of four years. Firms included in the sample belong to five sectors such as industrial, banks, insurance, investment, and services.

#### **3.1.2 Variables**

On this study the basis of research aims, variables (independent and dependent) used in this study and their definitions are adopted from literature. Remarkably, market-based measures of performance such as Earning per share (EPS), Market Value to Earning (P/E), and market-to book value ratio (MV/BV) were used as dependent variables. Key independent variables include concentration of ownership (Foreign ownership (FO), Managerial ownership (MO) and large ownership (LO)). Moreover, we use two control variables, financial leverage (LEV) and firm size (SIZE) were also included in the estimation model in order to control the firm-specific characteristics that may affect shares performance in market. Definitions of these variables are listed in Table 1. Methodology. This examination means to look at the impact of ownership concentration components on stock performance in the market. ownership concentration information was gathered from the yearly reports of the Palestinian organizations recorded in the PEX covering the period from 2016 to 2020, the analysts utilized a board information for four years a medium time since ownership concentration information give more enlightening information, greater inconstancy, less collinearity among the factors, more levels of opportunity and more productivity. And furthermore ownership concentration information are better ready to recognize and quantify impacts that are basically not perceivable in unadulterated cross-area or then again unadulterated time-series information (Jager 2008). The free factors in this investigation are the ownership concentration instruments identified with the Palestinian organizations recorded in the PEX. Predictable with earlier examinations, we utilize a few factors as displayed in Table 1. The table outlines the factors utilized and their estimations. It likewise alludes to concentrates in which these estimations are utilized.

**Table 1** Variables

Dependent variable	Stock performance
Earnings per share (EPS)	Ratio of profit before taxes to outstanding common shares
Market to Book Value (MV/BV)	Ratio of average of the high and low market price per share for the year to book value per share
Market to Earning (P/E)	Ratio of average of the high and low market price per share for the year to ration per share
<b>Independent variable</b>	<b>Ownership concentration (OC)</b>
Foreign ownership (FO)	The ratio % of shares owned by Foreign investors (non-Palestinian investors)
Managerial ownership (MO)	The ratio % of shares owned by Management
Large Ownership (LO)	The ratio % of shares owned by big shareholders
	<b>Control variables</b>
Leverage (LEV)	The ratio of total liabilities to total assets.
Size (SIZE)	Log of total assets.

### 3.1.3 Limitation

The data was collected from annual reports concentrate on the ownership concentration on stocks performance in market for 44 firms listed in PEX form the 2016–2020.

## 4 Methodology

This examination means to look at the impact of ownership concentration components on stock performance in the market. ownership concentration information was gathered from the yearly reports of the Palestinian organizations recorded in the PEX covering the period from 2016 to 2020, the analysts utilized a board information for four years a medium time since ownership concentration information give more enlightening information, greater inconstancy, less collinearity among the factors, more levels of opportunity and more productivity. And furthermore ownership concentration information are better ready to recognize and quantify.

Impacts that are basically not perceivable in unadulterated cross-area or then again unadulterated time-series information (Jager 2008). The free factors in this investigation are the ownership concentration instruments identified with the Palestinian organizations recorded in the PEX. Predictable with earlier examinations, we utilize a few factors as displayed in Table 1. The table outlines the factors utilized and their estimations. It likewise alludes to concentrates in which these estimations are utilized.

The reliant variable of this investigation is the stock performance in the market (SPM) (FPM). By and large, the stock performance in the market (SPM) can be estimated by the accessibility of subjective qualities of the bookkeeping data (dependability and importance). Because of the inconceivability of tracking down a direct quantitative scale for these attributes, and following different examinations (Din et al. 2021), the monetary presentation in Market is estimated by how much organizations practice income the board. We recommend that higher monetary presentation in Market is related with lower profit the board rehearses. Since stock performance in the market (FPM) is gotten from the nature of income unveiled in the monetary reports, profit the board is estimated by the segregation gatherings. This is in accordance with Buertey, S. (2021) and Chen et al. (2021). In light of this view, the higher the degree of Aspects of Concentration of Ownership, the higher is the distance between monetary execution and the outcomes displayed in the report monetary execution. Accordingly, the higher the Concentration of Ownership, the lower is the monetary presentation in business sectors introduced by the organization (Laktionova and Rudenok 2021).



## 4.1 Research Model

Literature Consistent (Ali 2006; Bao and Lewellyn 2017; Zhang and Cang, 2021), we developed the following model to examine the effect of ownership concentration on stock performance in markets.

$$\begin{aligned} \text{EPS} &= \alpha + \beta_1 \text{FO} + \beta_2 \text{MO} + \beta_3 \text{OC} + \beta_4 \text{LEV} + \beta_5 \text{SZ} + \varepsilon \\ \text{MV/BV} &= \alpha + \beta_1 \text{FO} + \beta_2 \text{MO} + \beta_3 \text{OC} + \beta_4 \text{LEV} + \beta_5 \text{SZ} + \varepsilon \\ \text{P/E} &= \alpha + \beta_1 \text{FO} + \beta_2 \text{MO} + \beta_3 \text{OC} + \beta_4 \text{LEV} + \beta_5 \text{SZ} + \varepsilon \end{aligned}$$

The information got should be investigated and disclosed to be valuable to meet exploration goals and answer its inquiries. The analysts utilized spellbinding measurements to depict the essential attributes and sum up a given arrangement of information as following. To begin with, the analysts depict the mean, standard deviation, middle, least worth, greatest worth, skewness, kurtosis and Jarque–Bera for every factor of the investigation. Secondly, The Pearson relationship lattice used to check if there is a multicollinearity issue between the autonomous factors and to gauge the force and the heading of connection among's free and ward factors. Thirdly, to test the soundness of the information, the Unit Root Test has been utilized. This test interfaces the time series data and cross-area information data to one another. At last, because of non-fixed framed information Generalized Method of Moment (GMM) was utilized to test the speculations of the examination. Results and discussion Descriptive statistical test aims to provide a general overview of research objects. The calculation of descriptive statistics in this study includes the mean, minimum, maximum, and standard deviation of each variable. The distribution of each variable based is as follows (Table 2):

## 4.2 Multicollinearity

In the second piece of this segment, the analysts examine multicollinearity issues between independent factors and the estimation of the force and bearing of the connection among independent and dependent factors. Table 3 shows the correlation between every one of the independent factors and the dependent variable. The correlation between the independent factors (ownership concentration) is under 80%, the most elevated relationship was between Managerial Owner (MO) and P/E which add up to 40.20%. As needs be, there is no multicollinearity issue between the independent factors (Shrivastav and Kalsie 2017). The outcomes show that the correlation between Foreign Owner (FO) and Earning per Share (EPS) is negative and inconsequential. This implies that when the Percent of Foreign owner enlarges, the EPS. This outcome affirms the aftereffects of a few earlier examinations, like Alhababsah (2019), Al-Janadi et al. (2016), and Briozzo and Albanese (2020). A similar outcome

**Table 2.** Results of descriptive statistics of variables study (observations 220)

	EPS	MV/BV	P/E	Leverage	Size	MO	LO	FO
<b>Mean</b>	3.13	0.12	9	0.58	143,040	0.66	6.21	2.25
<b>Median</b>	3	0.10	9	0.56	68,000	1	6	0.769
<b>Max</b>	6	1	13	0.97	1,167,800	1	13	2.477
<b>Min</b>	1	-	5	0.05	2000	-	3	4.36
<b>Std. Dev.</b>	0.535	0.325	2.115	0.198	1.818	0.476	1.478	8.556
<b>Skewness</b>	2.30	2.299	2.99	0.040	(0.19)	(0.70)	2.20	(2.1)
<b>Kurtosis</b>	12.99	7.4	13.21	1.99	3.00	0.99	11.01	10.95
<b>Jarque-Bera</b>	1501.37	397.81	1330.48	7.02	8.00	51.95	841	1140.01
<b>Probability</b>	0.001	0.002	0.001	0.041	0.022	0.003	0.001	0.003

**Table 3** Pearson correlation matrix between corporate governance and stock performance in markets

	EPS	MV/BV	P/E	Leverage	Size	MO	LO	FO
EPS	1							
Sig (2tailed)								
MV/BV	-0.79	1						
Sig (2tailed)	0.084							
P/E	0.090	-0.235**	1					
Sig (2tailed)	0.76	0.000						
Leverage	0.007	0.182**	-0.169**	1				
Sig (2tailed)	0.874	0.000	0.001					
Size	-0.032	-0.243**	0.224**	0.122**	1			
Sig (2tailed)	0.489	0.000	0.000	0.008				
MO	0.149**	-0.126*	0.402**	-0.151**	0.168**	1		
Sig (2tailed)	0.006	0.020	0.000	0.005	0.002			
LO	-0.123**	-0.337**	-0.224**	-0.14	0.164**	-0.105	1	
Sig (2tailed)	0.007	0.000	0.000	0.757	0.000	0.053		
FO	-0.070	-0.043	0.004	0.122**	0.157**	0.116*	0.147**	1
Sig (2tailed)	0.127	0.351	0.939	0.008	0.001	0.032	0.001	

\*, \*\*, significant at 5% and 1% respectively

is found concerning the connection between Market Value to Book Value (MV/BV) and Foreign Owner (FO). The relationship is negative and unimportant. This implies that when the quantity of offers claimed by the Foreign Owner enlarges, the MV/BV will diminish. This finding is predictable with the investigation by Chen and Yu (2012) for the organizations recorded in Tehran Stock Exchange (TSE). Regardless, a positive irrelevant connection between Price to Earning (P/E) and Foreign Owner (FO) is found. At the point when the Foreign Owner increases, the P/E will likewise increment, and the other way around. This outcome is conflicting with Alhababsah (2019) and Laktionova and Rudenok (2021) who tracked down a positive relationship between Foreign Owner and P/E. The correlation between Leverage (LEV) and Large Owner (LO) which approaches 0.122 shows that a positive and critical connection between the two factors exists. This recommends that, when the Company relies upon monetary by Loan and the increment in advances, the exhibition stock in business sectors will increment. This outcome is viable with Laktionova and Rudenok (2021) and Zhang et al. (2021) in the Brazilian and the Nigerian settings, separately. This outcome proposes to Companies rely upon accounts by Loan the exhibition of the stock in business sectors is improved. A similar positive and critical connection between (Size), managerial owners (MO), and Large Owner (LO) from one side, and stock markets performance (SMP) from the opposite side is reached. This implies that when the (MO) increases, the securities exchanges execution will likewise increment, and the other way around. This outcome is affirmed by the consequences of Laktionova and Rudenok (2021) for French recorded organizations and empower for increment the financial by advances. Besides, when the large owner and managerial owner boost the stocks financial markets sectors will likewise increment, and the other way around. This outcome stands apart the significance of the large owner and size in further developing the securities exchange's exhibition. It is reliable with Din, et al. (2021) in her examination for the organizations recorded on the Indonesian Stock Exchange. At last, our outcomes show that if the foreign and large owners are one of the large 10 owners firms, the financial exchanges execution will increment. This outcome endorses the significance of Owners type in further developing the stocks market's exhibition. Our finding is steady with the outcome by Buerthey (2021) for Malaysian recorded companies.

### **The Unit Root Test**

The immovable of the examination factors (dependents and independents) was tried utilizing the Augmented Dickey-Fuller (ADF) test. Consequences of the ADF test, at the level, show that all factors are not fixed which prompts the way that the unit root invalid theory can't be dismissed. The factors were then tried at the first difference. The outcomes show the strength of the information for all factors aside from the independent factor large owner (LO), which was fixed at the second difference. Table 4 shows the aftereffects of P-value of ADF for all factors at the level, first and second difference.

**Table 4** Result of augmented Dickey-Fuller test for unit root

Variable	Level		First Difference		Second Difference	
	ADF Statistic	P-Value	ADF Statistic	P-Value	ADF Statistic	P-Value
EPS	42.01	0.970	99.1	0.0011		
MV/BV	73.120	0.701	135.01	0.0001		
P/E	64.08	0.501	101.04	0.0002		
Leverage	18.99	0.501	51.07	0.0001		
Size	54.11	0.201	98.10	0.0002		
MO	23.04	0.221	38.11	0.0042		
LO	6.13	0.970	18.02	0.227	22.98	0.0612
FO	82.08	0.395	186.10	0.0003		

### The Impact of Ownership Construction on Stock Performance in the Market

The Generalized Momentum Method (GMM) is used to test the three study hypotheses by first difference with three late dependent variables EPS, MV/BV, P/E, which allows modeling the partial tuning mechanism. Table 4 shows the results of testing the relationship between corporate governance mechanisms (ownership concentration) and EPS stock market performance by the generalized moment method (GMM).

The test are performed at the first difference by entering the EPS of the performance of the dependent variable stock markets as the effective variable. According to the statistic of (23.68) and the probability value of (0.5939), the model is suitable and appropriate for the test. The test was also conducted at the first teams by entering the MV/BV of the performance of shares in the market as an effective dependent variable. With a statistical value of 15.40 and a probability value of 0.5261, the model is suitable for testing. As for the third test, the test was conducted at the first difference by entering the P/E performance of the stock in the market as an effective dependent variable. The statistical values of it amounted to 16.58 and the probabilistic value amounted to 0.556 and the model is suitable for the test.

Table 5, which examines the effect of corporate governance (concentration of ownership) on the performance of the stock in the market (EPS). The results of the statistical analysis in Table 5 showed that the value of the managerial ownership coefficient (MO) 6154.64 at the significant level of P 0.0026, and the large owners coefficient (LO) 26,450,198 with a significant level of 0.0000 and with respect to the value of the foreign ownership coefficient (FO) is  $-2.88563$  at a significant level of 0.0000, and this means that the relationship between the variables (MO), (LO) and (FO) is positive, that is, the more (MO), (LO) and (FO) increases company profitability (EPS), and vice versa, and this is consistent with the following studies (Al Farooque et al. 2007) and (Din et al. 2021). As noted in Table 5, the value of the leverage coefficient (LEV) and the size coefficient (SIZE) is negative and substantial ( $-2,038,783.5$ ) and ( $-142,676.3$ ) and it is significant at the level of 0.0000, and explains The researchers value the negative financial leverage in the

inverse relationship that the more financing by borrowing, the more its impact on profitability is negative and vice versa, and this contradicts the study of Holtz and Neto (2014) and Fodio et al. (2013) With regard to size, researchers explain the relationship that the greater the size, the less profitable the company, and this is in contradiction with previous studies Pasali (2020) Gois (2008) and Yong and Krishnan (2005) (Shahab et al. 2020).

Table 6, which examines the impact of corporate governance (concentration of ownership) on the performance of the stock in the market (MV/BV). The results of the statistical analysis in Table 6 showed that the value of the managerial ownership coefficient (MO) 4000.516 at the significant level of P 0.0016, and the large owners coefficient (LO) 17,192,628.7 with a significant level of 0.0000 and with respect to the value of the foreign ownership coefficient (FO) is  $-1.8756595$  at a significant level of 0.0000, and this means that the relationship between the variables (MO) and (LO) is positive, that is, the more (MO) and (LO) the company's profitability increases (EPS), and vice versa, and this is consistent with the following studies (Al Farooque et al. 2007) and Buertery (2021) Chen et al. (2021), as for foreign ownership, it turns out that there is an inverse relationship between foreign ownership and the stock's performance in the market (MV/BV), whereby the higher the foreign ownership, the lower the market value to the book value and vice versa. As noted in Table 6, the value of the leverage coefficient (LEV) and the size coefficient (SIZE) are negative and substantial ( $-2,038,783.5$ ) and ( $-142,676.3$ ) and it is significant at the level of 0.0000. On profitability is negative and vice versa and this contradicts the study of Dias et al. (2021) and Laktionova and Rudenok (2021) and agrees with the study of Laktionova and Rudenok (2021) With regard to size, researchers explain the relationship that the greater the size, the lower the profitability of the company, which is in contradiction with previous studies Zhang and Cang (2021) and Bao and Lewellyn 2017 and Alhababsah (2019).

It is evident from the results of testing the impact of corporate governance (concentration of ownership) on the performance of shares in the market (P/E) Table 7, which tests this relationship. Where the results of the statistical analysis in Table 7 showed that the value of the managerial ownership coefficient (MO) 4308.248 at a significant level of P 0.0001, and the coefficient of large owners (LO) 18,515,138.6 with a significant level of 0.0000. To the value of the foreign ownership coefficient (FO) is 2.019941 at a significant level of 0.0000, this means that the relationship between the variables (MO), (LO) and (FO) is positive, that is, the greater (MO), (LO) and (FO), the greater the profitability Company (EPS), and vice versa, and this is consistent with the following studies: Al-Janadi et al. (2016) Bao and Lewellyn (2017), Beisland et al. (2015). As mentioned in Table 6, the value of the leverage coefficient (LEV) and the coefficient of volume (SIZE) are negative and significant ( $-2,195,613$ ) and ( $-153,651.4$ ) and are significant at the 0.0000 level. And it has an impact on the earnings per share in the market (P/E), that is, the higher the leverage and the volume, the lower the earnings per share in the market and vice versa. This contradicts the study of Briozzo and Albanian (2020, FM, JESUKA, Chen and Yu (2012) and Bao and Lewellyn (2017) and agrees with the study of Chen et al. (2021). Regarding size, the authors clarify the relationship That the higher the size, the lower

**Table 5** Results of relationship between ownership concentrations on stock performance in market (EPS)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EPS	0.177411	0.001134	156.4568**	0.0000
MO	6154.64	20195.3	3.047375**	0.0026
LO	26450198	264294.5	100.0785**	0.0000
FO	2.88563	0.237435	12.1534**	0.0000
Leverage	-3136590	48281.39	-64.9648**	0.0000
Size	-219502	24249.37	-9.05188**	0.0000
Effects Specification	Gross-section fixed (first differences)			
Mean dependent var	67910.47	S.D. dependent var	3798898	
S.E. of regression	4948377	Sum squared resid	5.58E+15	
J-statistic	23.68617			
Prob (J-statistic)	0.593905	Instrument rank	34	

\*\* Significant at 1%

**Table 6** Results of relationship between ownership concentrations on stock performance in market (MV/BV)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MV/BV	0.11531715	0.0006804	169.485 **	0.0000
MO	4000.516	12117.18	3.302**	0.0016
LO	17192628.7	158576.7	108.42 **	0.0000
FO	-1.8756595	0.142461	-13.166**	0.0000
Leverage	-2038783.5	28968.834	-70.379**	0.0000
Size	-142676.3	14549.622	-9.806**	0.0000
Effects Specification	Gross-section fixed (first differences)			
Mean dependent var	44141.8055	S.D. dependent var	2469283.7	
S.E. of regression	3216445.05	Sum squared resid	4.958E+12	
J-statistic	15.40			
Prob (J-statistic)	0.5261	Instrument rank	35	



**Table 7** Results of relationship between ownership concentrations on stock performance in market (P/E)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
P/E	0.1241877	0.0006804	182.5216049	0.0000
MO	4308.248	12117.18	0.355548733	0.0001
LO	18515138.6	158576.7	116.7582539	0.0000
FO	2.019941	0.142461	-14.1789051	0.0000
Leverage	-2195613	28968.834	-75.79224625	0.0000
Size	-153651.4	14549.622	-10.56050803	0.0000
Effects Specification			Gross-section fixed (first differences)	
Mean dependent var	47537.329		S.D. dependent var	2659228.6
S.E. of regression	3463863.9		Sum squared resid	6.04E+11
J-statistic	16.58			
Prob (J-statistic)	0.556		Instrument rank	36

the company's profitability, (P/E), which contradicts previous studies. Obembe et al. (2016), Laktionova and Rudenok (2021) and Din et al. (2021) and Buertey, S. (2021).

## 5 Conclusion

The results shows that managerial ownership has a positive relationship with stock performance and that is because managers who have a percentage in the company tend to apply measures more efficient and effective to enhance performance in order to raise the stock value which in turn will reflect profitably on their personal stakes. The other finding is that foreign ownership also has a positive relationship with stock performance, and that's as we mentioned earlier due to better understanding and information that foreign investors have in comparison with local investors, and due to the Palestinian stock exchange is a relatively new market and most of the traders in this market are less experienced than foreign investors.

The last result is that large ownership has a negative effect on stock performance, and according to the researchers that's due to the majority of large investors are either families or large corporations, and this concentrates the decision making process in either an un experienced or biased group of people, and that reflects negatively on firm and stock performance.

### Future Studies

We recommend the following future studies as concentration ownership in financial performance, ownership concentration on operation performance, ownership concentration on stock return.

**Acknowledgements** We are indebted to Palatine Technical University Kadoorie, for their support in completing this paper.

## References

- Abdeljawad, I., Masri, R.M.: Board characteristics and corporate performance: evidence from Palestine. *An-Najah Univ. J. Res.-B (Humanit.)*, **34**(4) (2020)
- Abuamsha, M.K.: The impact of corporate governance mechanism on financial performance in the Palestinian firms listed in the stock exchange. *Acad. Acc. Financ. Stud. J.* **25**(3S) (2021). <https://www.abacademies.org/articles/the-impact-of-corporate-governance-mechanism-on-financial-performance-in-the-palestinian-firms-listed-in-the-stock-exchange-12606.html>.
- Akben-Selcuk, E.: Corporate social responsibility and financial performance: the moderating role of ownership concentration in Turkey. *Sustainability*, **11**(13) (2019)
- Al-Gamrh, B., Al-Dhamari, R., Jalan, A., Jahanshahi, A.A.: The impact of board independence and foreign ownership on financial and social performance of firms: evidence from the UAE. *J. Appl. Account. Res.* (2020)
- Aluchna, M., Kaminski, B.: Ownership structure and company performance: a panel study from Poland. *Baltic J. Manage.* (2017)

- Awuor, O.B., Onsomu, Z., Ooko, J.: The effect of managerial ownership on stock performance of firms listed at the Nairobi securities exchange. *Scholars J. Econ. Bus. Manage.* **4**(4), 279–290 (2017)
- Berke-Berga, A., Dovladbekova, I., Abula, M.: Managerial ownership and firm performance: evidence of listed companies in the Baltics. *Pol. J. Manage. Stud.* **15** (2017)
- Bhagat, S., Bolton, B.: Corporate governance and firm performance: the sequel. *J. Corp. Finan.* **58**, 142–168 (2019)
- Bin Hidthiir, M.H., Basheer, M.F., Hassan, S.G.: The simultaneity of corporate financial decisions under different levels of managerial ownership: a case of Pakistani listed firms. *Res. World Econ.* **10**(2), 147–159 (2019)
- Carney, M., Estrin, S., Liang, Z., Shapiro, D.: National institutional systems, foreign ownership and firm performance: the case of understudied countries. *J. World Bus.* **54**(4), 244–257 (2019)
- Dah, M.F.M., Zainon, S., Zakaria, N.B., Omar, N.: Ethical values and competitiveness within concentrated ownership structure in Malaysia. *Manage. Account. Rev. (MAR)* **15**(2), 57–75 (2016)
- Danoshana, S., Ravivathani, T.: The impact of the corporate governance on firm performance: a study on financial institutions in Sri Lanka. *SAARJ J. Bank. Insur. Res.* **8**(1), 62–67 (2019)
- Driffield, N., Sun, K., Temouri, Y.: Investigating the link between foreign ownership and firm performance—an endogenous threshold approach. *Multinational Bus. Rev.* (2018)
- Fabisik, K., Fahlenbrach, R., Stulz, R.M., Taillard, J.P.: Why are firms with more managerial ownership worth less? *Natl. Bur. Econ. Res.* (2018)
- Gois, C.C.: Financial reporting quality and corporate Governance: the portuguese companies evidence. *J. Acc. Econ.* **79**, 1–25 (2008)
- Haghighi, A., Gerayli, M.S.: Managerial ownership and stock price crash risk: a case of Iranian firms. *Int. J. Islamic Middle East. Finan. Manage.* (2019)
- Hamdan, A.: Board interlocking and firm performance: the role of foreign ownership in Saudi Arabia. *Int. J. Manage. Finan.* (2018)
- Hegde, S., Seth, R., Vishwanatha, S.: Ownership concentration and stock returns evidence from family firms in India. *Pac.-Basin Finan. J.* **61**, 101330 (2020)
- Ho, J., Huang, C.J., Karuna, C.: Large shareholder ownership types and board governance. *J. Corp. Finan.* **65**, 101715 (2020)
- Huang, Q.: Ownership concentration and bank profitability in China. *Econ. Lett.* **196**, 109525 (2020)
- Jager, P.D.: Panel data techniques and accounting research. *Mediat. Acc. Res.* **16**, 53–68 (2008)
- Kađsh, S.M.A., Dua'a, A.-D.: Corporate Social Responsibility and Its Relation to Profitability: Evidence from Banks Operating in Palestine (2019)
- Lin, Y.R., Fu, X.M.: Does institutional ownership influence firm performance? Evidence from China. *Int. Rev. Econ. Financ.* **49**, 17–57 (2017)
- Kamal Abu Amsha, M.: Evaluation and predictability of performance sector portfolio's and Al-Quds Index / Evidence from Palestine Exchange. *Palestine Tech. Univ. Res. J.* **5**(1), 16–34 (2017). <https://doi.org/10.53671/pturj.v5i1.49>
- Lindemanis, M., Loze, A., Pajuste, A.: The effect of domestic to foreign ownership change on firm performance in Europe. *Int. Rev. Finan. Anal.* (2019)
- Matinez-Garcia, I., Basco, R., Gomez-Anson, S., Boubakri, N.: Ownership concentration in the gulf cooperation council. *Int. J. Emerg. Markets* (2020)
- Mwatata, J., Muhoho, J., Macharia, S.: Effect of corporate governance on growth of government-owned agricultural lending institutions: A case study of agricultural finance corporation, Kenya. *Int. Acad. J. Hum. Resour. Bus. Adm.* **3**(6), 375–393 (2019)
- Nofal, M.: The effect of foreign ownership on firm performance: evidences from Indonesia. Paper presented at the 3rd Asia Pacific International Conference of Management and Business Science (AICMBS 2019) (2020)
- Obembe, O.B., Olaniyi, C.O., Soetan, R.O.: Managerial ownership and performance of listed non-financial firms in Nigeria. *Int. J. Bus. Emerg. Markets* **8**(4), 446–461 (2016)

- Pasali, S.S., Chaudhary, A.: Assessing the impact of foreign ownership on firm performance by size: evidence from firms in developed and developing countries. *Transnational Corporations J.* **27**(2) (2020)
- Shaheen, Y., Jaradat, N.: Corporate governance impact on insurance firm's performance. The case of Palestine. *Int. J. Acad. Res. Account. Finan. Manage. Sci.* **9**(3), 201–210 (2019)
- Shan, Y.G., Troshani, I., Tarca, A.: Managerial ownership, audit firm size, and audit fees: Australian evidence. *J. Int. Account. Audit. Tax.* **35**, 18–36 (2019)
- Shleifer, A., La Porta, R., Lopez-De-Silanes, F.: Corporate ownership around the world. *J. Finan.* **54**(2), 471–517 (1999)
- Shrivastav, S.M., Kalsie, A.: The relationship between foreign ownership and firm performance in India: an empirical analysis. *Artha Vijnana* **59**(2), 152–162 (2017)
- Urbanek, P.: Reform of the higher education system in Poland from the perspective of agency theory. *Eur. J. High. Educ.* **10**(2), 130–146 (2020)
- Din, S.U., Khan, A., M., Khan, M.J. Khan, M.Y.: Ownership structure and corporate financial performance in an emerging market: a dynamic panel data analysis. *Int. J. Emerg. Markets*, Ahead-of-print No. ahead-of-print (2021). <https://doi.org/10.1108/IJOEM-03-2019-0220>
- Buertey, S.: Board gender diversity and corporate social responsibility assurance: the moderating effect of ownership concentration. *Corp. Soc. Responsib. Environ. Manage.* (2021)
- Chen, S., Wang, Y., Albitar, K., Huang, Z.: Does ownership concentration affect corporate environmental responsibility engagement? The mediating role of corporate leverage. *Borsa Istanbul Rev.* (2021)
- Dias, V.F., Cunha, M.A., Peixoto, F.M., Jesuka, D.: Do Ownership Concentration and The Board of Directors Affect Exports? 1 (2021)
- Laktionova, O., Rudenok, O.: Descriptive model of influence of ownership concentration on the corporate capital management. *Econ. Ecol. Socium* **5**(1), 46–55 (2021)
- Zhang, D., Cang, Y.: Ownership concentration, foreign ownership and auditing: evidence from SMEs in Latin America. *Pac. Account. Rev.* (2021)
- Bao, S.R., Lewellyn, K.B.: Ownership structure and earnings management in emerging markets – an institutionalized agency perspective. *Int. Bus. Rev.* **26**(5), 828–838 (2017)
- Alhababsah, S.: Ownership structure and audit quality: an empirical analysis considering ownership types in Jordan. *J. Int. Account. Audit. Tax.* **35**, 71–84 (2019)
- Al-Janadi, Y., Abdul Rahman, R., Alazzani, A.: Does government ownership affect corporate governance and corporate disclosure? Evidence from Saudi Arabia. *Manag. Audit. J.* **31**(8/9), 871–890 (2016)
- Briozzo, A., Albanese, D.: Voluntary audit, investment, and financing decisions in Latin American small and medium enterprises. *J. Int. Account. Audit. Tax.* **38**, 100302 (2020)
- Chen, C.J., Yu, C.M.J.: Managerial ownership, diversification, and firm performance: evidence from an emerging market. *Int. Bus. Rev.* **21**(3), 518–534 (2012)

# The Importance of Compliance Management in SMEs Ambidexterity Towards Innovation Performance Aside of Corporate Openness: Theoretical Framework



Ari Pranaditya, M. Trihudyatmanto, Heri Purwanto,  
and Alfian Yuda Prasetyo

**Abstract** Ambidexterity is still a concern of many researchers, especially in the field of SMEs because of its influence on innovation performance. Many of the previous studies have explored various factors, but not many put together corporate openness and compliance management in perspective. As such, this paper offers the concept as a foundation for improving innovation performance through openness and compliance management. Corporate openness is a key factor in the relationship of ambidexterity and innovation performance. Openness helps SMEs to gain access to external knowledge at minimal cost, and also understands competitor activity in the market thus helping SMEs to bridge the innovation gap between them, competitors and markets, with less time and cost. Compliance Management is a process to ensure companies and employees complies to all laws, regulations, ethical standards and practices applicable to organizations and industries. We argue that the absence of compliance with the laws, regulations, standards and ethical practices conducted by SMEs into the performance of innovation will be hampered. This is due to SMEs need to concentrate on resolving things that are obstacles to operationalization, then innovate after the problems are resolved. Therefore, compliance is needed in addition to corporate openness to improve the performance of SME innovation.

**Keywords** Compliance management · Corporate openness · Ambidexterity · Innovation performance

## 1 Introduction

Small and medium enterprises (SMEs) are very important in the economic development of a country, both for developed and developing countries. For developing countries, SMEs contribute about 45% of total employment, and 33% to GDP (O. for E. C. and D. 2017). SMEs contribute to more than 50% of job creation and GDP (I. F. C.

---

A. Pranaditya (✉) · M. Trihudyatmanto · H. Purwanto · A. Y. Prasetyo  
Faculty of Economics, Sultan Agung Islamic University, Semarang, Indonesia  
e-mail: [apranaditya\\_pdim5@std.unissula.ac.id](mailto:apranaditya_pdim5@std.unissula.ac.id)

2010). Similarly, in Europe, SMEs make up 99% of all businesses, and provide 85% of new jobs (Commission 2019). Therefore the macro and microeconomic dominance of SME success is highly regarded. Academics have also contributed their share, by conducting research into various areas of determining the success of SME businesses. The current study also expands science, by assessing how various interactions of organizational learning ambidexterity and openness affect the performance of SME innovation.

We focus on enterprise-level innovation, such as the success of SMEs in their products and process innovations. Emphasised on SMEs the quickness of developing new products or services, launch new products or services on time, quick response to competitors' actions, and the ability to turn business processes into new learning (Abdallah et al. 2019; Cherrafi et al. 2018). Innovation remains the focus of many companies and the success of corporate innovation has been attributed to organizational learning, namely the organization's ability to new learning competencies (March 1991).

On the other hand, the ambidexterity of organizational learning represents the company's ability to simultaneously engage in exploitative and exploratory learning (Reilly and Tushman 2008; Chang et al. 2011) There are two schools of thought regarding the application of exploitative and explorative learning strategies. The first school that (March 1991) suggested that these two learning strategies were contradictory or competitive. It is based on the background of a limited resource company that is contested either by exploitation of existing knowledge or competence, or exploration of new knowledge and competencies, which is based on the routines of different organizations (Kyriakopoulos K. and Moorman, C. 2004; Benner and Tushman 2003). According to March (1991) the activities involved in both learning strategies are strengthening, creating "success traps" through exploitation, or "failure traps" through the exploration of new competencies. On the other side, the second school of thought suggests these two learning strategies are complementary, making room for simultaneous adoption by the company (Y. Li and Huang 2013; Chang et al. 2011, Gilson et al. 2005; Beckman et al. 2004; Gibson and Birkinshaw 2004).

According to the study, exploitation activities provide the cash flow needed for exploration activities, while exploration also provides the capabilities needed for the long-term survival of the company. The simultaneous adoption of both learning strategies (ambidexterity) provides options for companies with short-term and long-term success. From the first stream of thought, companies have limited or scarce resources, making it difficult to adopt both learning strategies simultaneously. This will be more profound for SMEs, who will be more challenged in terms of innovation resources. Due to resource limitations, studies on ambidexterity mostly focus on large companies, as they focus more on ambidexterity (Jansen et al. 2006; Raisch and Birkinshaw 2008; Raisch 2009). Some studies on ambidexterity in the context of SMEs focus on the antecedent ambidexterity of SME innovation (Soto-Acosta et al. 2008; Chang et al. 2011; Chang and Hughes 2012) and ambidexterity products and markets (Voss and Voss 2013). SMEs and large companies differ in response and vulnerability to external environmental pressures, thus focusing on the ambidexterity of organizational learning on the performance of SME innovation is very important

(Chang et al. 2011). Despite the limited resources in SMEs, achieving organizational learning ambidexterity is still feasible if the SMEs are open.

The company's external search strategy, in terms of breadth and depth representing the openness of innovation (Laursen and Salter 2006). These may include customers, competitors, research institutions, regulatory bodies, higher education institutions, government agencies, etc. (Stanko and Henard 2017). In the production of shortened product life cycles as a result of rapid change and the world of intensive knowledge, openness helps increase the operational flexibility of SMEs and companies in general (Ham et al. 2017). From the perspective of Resource Dependency Theory (RDT), the essential resources needed for organizational performance are in external environments (Pfeffer and Salancik 1978). RDT proposes that companies cannot internally generate all the resources needed for their sustainability (Peng and Beamish 2014), and therefore rely on outside supplier organizations for their survival (Zhang and Li 2001). Openness of external organizations and institutions, helping SMEs to overcome resource challenges that hinder the adoption of exploration and exploitative learning strategies simultaneously (Hernandez-Espallardo et al. 2011).

Therefore, open SMEs can do so effectively engaged in organizational learning ambidexterity, as they have access to external resources used to augment their limited internal resources (Chang and Hughes 2012). However, the openness of the organization is not enough to improve the performance of innovation. We believe organizational compliance with existing regulations is also key in improving innovation performance. Compliance Management is the process that ensures that the company has followed the applicable rules or regulations. Compliance Management can be realized in various forms. Among other things, it can be a combination of policies, procedures, documentation, internal audits, third-party audits, security controls, and technology enforcement. Heightened and rapid uncertainty led to the issuance of more and more complex new rules and regulations, impacting compliance functions in the organization. Therefore, we support the ambidexterity of organizational learning in SMEs by implementing compliance management. Organizational openness is only one of the contributing factors to ambidexterity towards innovation, but compliance management will make ambidexterity effective.

This study expands knowledge about Resource Dependence Theory (*RDT*) by demonstrating that SMEs can maximize the influence of organizational learning skills on performance innovation, through openness supported by compliance management. Studies also contribute to discussions about open innovation and compliance, especially among SMEs.

## 2 Literature Review

### 2.1 SME's Innovation Performance

Innovation is defined as an idea, product, process, system or device that is considered new to an individual, group of people or companies, industrial sector or society and serves as the company's ability to develop innovative products, speed of development process, and ability to introduce products to the market on time (Rogers 1995); (Abdallah et al. 2019). Innovation is often the foundation of established entrepreneurial businesses because it provides a competitive advantage. On the other hand, entrepreneurial action is one way of bringing innovation to market. Innovation performance is key to competitive advantage in highly volatile environments.

Innovation performance as the main driver for a country's economic growth. The ability to innovate has direct consequences for the ability to compete at the individual, corporate, regional and national levels. The values created by innovation are often manifested in new ways of doing something or new products and processes that contribute to wealth. (Pan and Li 2016) showcase product innovation performance as the company's efforts to make products better, such as improving their quality, while (Li and Ni 2016) define the innovation process as an effort aimed at reducing production costs and changing production functions, to achieve competitive prices. Since the start of the industrial revolution, innovation has been recognized as providing a competitive advantage for the company (Heffner 2006). (Abdallah et al. 2019) define innovation performance as the company's ability to develop innovative products, the speed of the development process, and the ability to introduce products to the market on time. (March 1991) presents two forms of innovation activities; exploitative and exploratory, meaning innovation can be realized through exploitation of existing knowledge and processes, or exploration of new knowledge and processes. Exploitation or learning grants exploration of intangible resource companies needed to successfully engage in innovation, and thus, this study refers to the views of Resource Based View (RBV) and Knowledge Based View (KBV) in explaining the interrelationship between organizational learning, openness, and innovation performance.

From RBV's perspective, the implementation of the company's unique capabilities and resources leads to better performance of SME innovation (Barney 2001). Therefore, innovation performance must have tangible and intangible assets that are difficult for competitors to replicate. Organizational learning skills can equip SMEs with resources that are difficult for competitors in the industry to replicate. KBV also provides SMEs with strategies to leverage their knowledge base for innovation performance. Organizational learning and open innovation present companies with business knowledge that can be utilized by SMEs for innovation performance (Grant 1991). With a focus on SME openness, RDT also becomes relevant to the study. From RDT perspectives, the essential resources needed for organizational performance are in external environments (Pfeffer and Salancik 1978). For better innovation performance, therefore, SMEs engage in open innovation to utilize rich external



resources where companies are lacking. Business sustainability is critical, and business viability depends on resource availability, which SME is difficult to achieve internally (Hillman et al. 2009). Resource needs are overlapping across multiple domains, giving rise to this “Multiplexity” dependency (Lomi and Pattison 2006). Therefore, companies need to interact with external bodies to utilize resources they cannot produce internally (Pfeffer 1987; Yin and Shanley 2008). The Company does this in the form of joint ventures, strategic alliances, and industrial networks (Xia et al. 2018). Therefore, RDT has been widely used in domain research, to explain the interdependence of the corporate environment (Dong et al. 2018).

## 2.2 *Learning Organization Ambidexterity*

Learning can be at the organizational, group or individual level. The current study, however, centers on organizational-level learning, with two main directions. First the direction is whether new learning emerges from the old knowledge path or an entirely new path of knowledge (He and Wong 2004). The second direction is also focused on the use of old or new knowledge itself, and not the path in generating knowledge (Simsek 2009; Gupta 2006; Vassolo, Anand and Folta 2004). Since all organizational activities have an element of learning (Gupta et al. 2006), this study adopts a second position, which focuses on the type of organizational learning, not the path.

Concluded from March (1991) work on organizational learning, it is clear that exploitative and explorative learning strategies are equally exclusive, that is, unsuitable. Such studies con (Greco et al. 2019) and (Kyriakopoulos and Moorman 2004) have also presented similar arguments about the reciprocal exclusivity of this learning approach. Yet other studies, defying incompatible logic, and considered exploitative and explorative learning strategies as complementary (Posch 2019, Li and Huang 2013; Gilson et al. 2005; Beckman 2004; Gibson and Birkinshaw 2004). (Garcia et al. 2003) explained that, knowledge exploitation provides the cash flow needed for the investment in learning or exploration activities, while exploration learning also provides the necessary technological capabilities or support to further exploit existing knowledge. This makes others also notice exploitation and exploration learning as a cycle (Greco et al. 2019). The subsequent use of explored knowledge leads to knowledge exploitation, and exploitation also provides the basis for exploration that is. The strategic allocation of limited corporate resources for this type of learning, however, has become complex and difficult (Sidhu 2007; Tushman and O’Reilly 1996). The strategic choice between these two learning approaches leads to the concept of ambidexterity, in which the company pursues short-term growth through exploitation and long-term viability through exploration (Lee et al. 2018). (Turner et al. 2013) indicate that the word “ambidexterity” does not reflect managerial “activity”, but rather “ability” (p. 319). We therefore focus on the managerial capabilities of SMEs to simultaneously adopt exploratory and exploitative learning strategies.

### 2.3 *Corporate Openness*

Innovation is a management practice related to inflows and exits of knowledge aimed at improving innovation performance. In particular, openness in innovation considers the company's external search strategy and in terms of its breadth and within. The breadth of openness relates to how widespread the search is for companies (the number of external search sources), while the depth of openness also focuses on how deep the company searches (frequency of interaction per each search source). External search sources may include customers, competitors, research institutes, regulatory bodies, higher education institutions, government agencies, etc. (Chesbrough and Bogers 2014; Dahlander and Gann 2010; Chesbrough 2003; Laursen and Salter 2006; Stanko and Henard 2017).

### 2.4 *Compliance Management*

The definition of compliance is “commanding action”, or “rule-abiding or standardized state”. In the corporate world, this is defined as a process to ensure companies and employees follow all laws, regulations, standards, and ethical practices applicable to organizations and industries. Corporate compliance includes internal policies and procedures, as well as federal and state laws. Enforcing compliance helps companies prevent and detect rule violations, which protect organizations from fines and lawsuits. The compliance process must continue. Many organizations create programs to consistently and accurately set their compliance policies over time.

Compliance Management is the process that ensures that the company has followed the applicable rules or regulations. These regulations become compliance standards or compliance benchmarks. Meanwhile, the process is to manage to keep the company's system running in accordance with the regulations.

Compliance Management can be brought to earth in various forms. Among other things, it can be a combination of policies, procedures, documentation, internal audits, third-party audits, security controls, and technology enforcement. Managing credit history, a record of one's compliance towards financing agreement can be seen as a form of compliance management. (Adeosun and Shittu 2021) states credit history has a positive effect on formal financing options and Financing Resources will benefit further development of entrepreneurial ecosystems (Munira Aminova and Mareef 2020).

Heightened and rapid uncertainty led to the issuance of more and more complex new rules and regulations, impacting compliance functions in the organization. Because of the increasing number of compliance activities, the greater the cost of managing compliance and ultimately calculated as the cost of running a business.

On the other side of the coin, when compliance functions are ignored, no one has a view of what is happening throughout the organization that leads to an

unidentified lack of internal control, resulting in opportunities for the emergence of non-compliance problems and even legal problems for the company.

### 3 Theoretical Framework

#### 3.1 *Ambidexterity's Relationship to Innovation Performance*

Organizational learning ambidexterity may be simultaneous (Simsek 2009), or interspersed also known as sequential equilibrium (Anil Gupta and Smith 2006). From an equilibrium punctuated perspective, ambidexterity is achieved through the adoption of exploitative cycles and exploration learning strategies over different periods. That is, the company has the ability to adopt exploitative and explorative learning strategies, but at different time periods. Rather than spatially or periodically alternating between exploitation and exploration, we consider ambidexterity as a simultaneous adoption of exploitative learning and explorative strategies. That is, balancing the high level of exploitative learning and explorative strategy in a certain period of time (Simsek 2009). (Wang and Xu 2018) showed it was impossible to develop all technological and market competencies through exploitation. Thus, the simultaneous adoption of two learning strategies helps companies to acquire external competencies to complement internal competencies for successful innovation.

SMEs needs a balance between exploitation and exploration learning strategies to achieve ambidexterity, as much of the focus on exploitation leads to short-sighted organizations due to the pitfalls of success, and excessive focus on exploration can also lead to companies getting caught up in the cycle of failure (Hill and Birkinshaw 2014); (Ganzaroli et al. 2016; Gupta 2006; Levinthal and March 1993). Excessive exploration can lead to underdeveloped innovation, which is a cost to the company. Therefore, there are important implications in balancing exploitation and exploratory activities within the organization, due to the complementary effects of these two strategies. While exploits support static optimization, exploration promotes dynamic optimization. In a stable short-term business environment, the exploitation of corporate consolidation competencies becomes very important, while in a long-term dynamic business environment, exploration of new business competencies also becomes very important.

The combination of these two strategies is critical to the company's successful (Charles A. O'Reilly 2013; Eisenhardt and Martin 2000). (Chang, Hughes and Hotho 2011) likened exploration to the "research" aspect of the R&D process, while exploitatively focused on the "development" aspect. Therefore, ambidexterity makes R&D complete. Similarly, (Simsek 2009) points out that "upstream units, such as production, are responsible for exploitation, whereas downstream units, such as marketing and sales, are responsible for exploration." This, (Simsek 2009) is referred to as structural ambidexterity. (Voss and Voss 2013) also show that large companies

have the necessary resources and capabilities to benefit from the market's ambidexterity strategy, however, developing and maintaining the ambidexterity market is necessary to drive the long-term growth of all companies. (Chang and Y., Hughes, M., Hotho, 2011) points out that in a highly dynamic and competitive environment, SMEs achieve organizational ambidexterity through high centralization and connectedness, supported by Andriopoulos and Lewis (2009).

Internal organizational structure and leadership style also shaped the adoption of ambidexterity by SMEs (Chang 2011; Jansen 2006). (Turner et al. 2013) also present organizational capital, social capital, and human resources as drivers of organizational proficiency. (Soto-Acosta et al. 2018) asserts that achieving innovation ambidexterity among SMEs is possible when the appropriate organizational context is developed to promptly respond to changes in the business environment. Organizational ambidexterity improves SME performance by reducing the risk of "success traps" through exploitation, or "failure traps" (Cao et al. 2009).

### ***3.2 The Moderation Role of Corporate Openness***

Innovation is open as a management practice with regard to knowledge aimed at inflows and outflows for improved innovation performance (Chesbrough and Bogers 2014, Dahlander and Gann 2010; Chesbrough 2003). Open innovation gives companies the ability to "utilize creativity together" (Bessant and Moslein 2011). Recently, research has shifted from open innovation in large companies to SMEs (Santoro et al. 2018; Usman et al. 2018; Vanhaverbeke 2017; Brunswicker and Vrande 2014). In particular, openness in innovation (or openness of innovation) considers the company's external search strategy, in relation to the broad and deep (Laursen and Salter 2006). Openness relates to how broad the search company is (in term of the number of external search sources), while the depth of openness also focuses on how firm the search is (frequency of interaction per each search source) (Laursen and Salter 2014). External search sources may include customers, competitors, research institutes, regulatory bodies, higher education institutions, government agencies, etc. (Stanko and Henard 2017).

Furthermore, our previous discussions have shown that the ambidexterity of organizational learning influences the performance of innovation. That is, the company's innovation performance through exploitative learning can be further encouraged by using exploration learning as a complementary tool. The interactive effect of exploitation and exploration learning was thus found to have a positive effect on the company's innovation performance (Posch and Garaus 2019). Since openness and exploration learning have a positive relationship (Popa et al. 2017) it is expected that the complementary effect of exploratory learning and exploitative learning on innovation performance, will be further enhanced with more open companies. Openness has been established to positively influence innovation performance (Roper et al. 2013; Laursen and Salter 2006; Gassmann et al. 2010), however, it is a company engaged in learning exploration that is able to fully capture the potential of openness

(Cheng and Shiu 2015; Gassmann 2010). Openness helps SMEs to gain access to external knowledge at minimal cost, and also understands competitor activities in the market (Tiwana and Bush 2007). Openness helps SMEs to bridge the innovation gap between them and their competitors, with less time and cost. Therefore, openness gives SMEs flexibility and also improves their knowledge base (Zahra and Nielsen 2002).

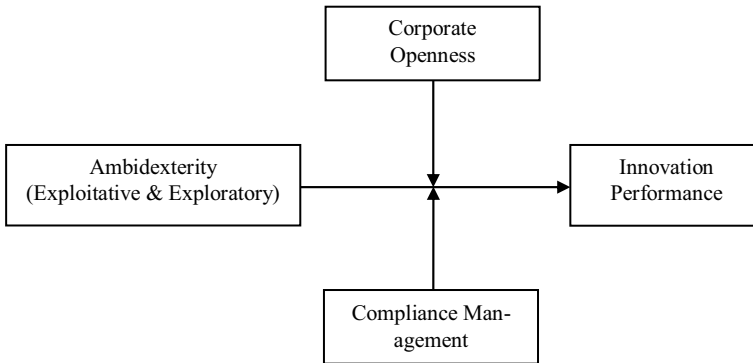
### ***3.3 Moderation Role of Compliance Management***

Corporate compliance includes internal policies and procedures, as well as applicable laws in a country. Enforcing compliance helps companies prevent and detect rule violations, which protect organizations from fines and lawsuits. The compliance process must continue. Many organizations create programs to consistently and accurately set their compliance policies over time. Compliance Management is the process that ensures that the company has followed the applicable rules or regulations. These regulations become compliance standards or compliance benchmarks. Meanwhile, the process is to manage to keep the company's system running in accordance with the regulations.

Compliance Management can be realized in various forms. Among other things, it can be a combination of policies, procedures, documentation, internal audits, third-party audits, security controls, and technology enforcement. Heightened and rapid uncertainty led to the issuance of more and more complex new rules and regulations, impacting compliance functions in the organization. Because of the increasing number of compliance activities, the greater the cost of managing compliance and ultimately calculated as the cost of running a business.

### ***3.4 Research Model***

From the relationship of ambidexterity concept and innovation performance, which is strengthened by moderation of corporate openness and compliance management, the following research models are formed (Fig. 1):



**Fig. 1** Basic theoretical model

## 4 Conclusion

The concept of ambidexterity has been widely studied in the business domain, and SMEs also have quite a lot of research on ambidexterity. Previous studies on ambidexterity have largely focused on skills innovation. (Chang et al. 2011) focused on internal and external antecedents resulting from the ambidexterity of SME innovation. (Popa et al. 2017) provide insight into the combined role of information technology, management knowledge and environmental dynamism as the drivers of SME innovation ambidexterity. (Chang and Hughes 2012) also presented the ambidexterity of SME innovation. (Voss and Voss 2013) presented strategic ambidexterity in SMEs, where focus was placed on product and market ambidexterity. (Hongyun et al. 2020) contributes to the ambidexterity of SME literature by focusing specifically on organizational learning abilities.

Innovation is defined as “an idea, product, or process, system or device that is considered new to an individual, group of people or company, industrial sector or society as a whole” (Rogers 1995) organizational learning is defined as a constant and dominant interpretation of the business environment by the company, leading to the acceptance of new knowledge either complementing or replacing old knowledge (Spence 1973). Although the (Lubatkin and Veiga 2006) focused on ambidexterity knowledge in SMEs, the study focused on its orientation. That is, the tendency or willingness of SMEs to exploit or explore internal knowledge of external knowledge. (He and Tian 2020) research focuses on actual knowledge of exploitation and exploration for organizational learning. That is, the ability of SMEs to exploit or explore knowledge. Furthermore, organizational learning leads to the acquisition of knowledge, which is considered as a strategic asset that increases the competitive advantage of the company. Thus, this further study contributes to RBV and KBV. From RBV’s perspective, the implementation of the company’s unique capabilities and resources leads to better performance of SME innovation (Barney 1991). This study presents knowledge as a strategic asset, which makes the difference between the performance of SME innovation. This strategic asset (knowledge) is achieved through the learning

activities of SME organizations. Organizational learning provides companies with business knowledge that can be utilized by SMEs for innovation performance (Grant 1991).

(He and Tian 2020) argues that SMEs able to increase their internal resources for innovation, by opening up to external knowledge search. But we believe that is inadequate, the performance of innovation will be formed in accordance with expectations if there is compliance from all parties, including leaders and employees. When compliance functions are ignored, no one has a view of what is happening throughout the organization that leads to an unidentified lack of internal control, resulting in opportunities for the emergence of non-compliance problems and even legal problems for the company in which will drag down organizations in performing innovation. Therefore, we believe that compliance management in SMEs which are engaged in exploration and exploitation in order to perform innovation with resources both outside an inside the business is as important as its corporate openness.

## References

- O. for E. C. and D. – OECD: Meeting of the OECD council at ministerial level: enhancing the contributions of SMEs in a global and digitalised economy (2017)
- I.F.C. – IFC: Scaling-Up SME Access to Financial Services in the Developing World. International Finance Corporation. World Bank Group, Washington DC (2010)
- Commission, E.: Entrepreneurship and small and medium-sized enterprises (SMEs) (2019)
- Abdallah, A.B., Dahiyat, S.E., Matsui, Y.: Lean management and innovation performance: evidence from international manufacturing companies. *Manage. Res. Rev.* **42**(2), 239–262 (2019)
- Cherrafi, A., Garza-Reyes, J.A., Kumar, V., Mishra, N., Ghobadian, A., Elfezazi, S.: Lean, green practices and process innovation: a model for green supply chain performance. *Int. J. Prod. Econ.* **206**, 79–92 (2018)
- March, J.G.: Exploration and exploitation in organizational learning. *Organ. Sci.* **2**(1), 71–87 (1991)
- Reilly, C.A.O., Tushman, M.L.: Ambidexterity as a dynamic capability : Resolving the innovator’s dilemma, **28**, 185–206 (2008)
- Chang, Y.Y., Hughes, M., Hotho, S.: Internal and external antecedents of SMEs’ innovation ambidexterity outcomes. *Manage. Decis.* **49**(10), 1658–1676 (2011)
- Kyriakopoulos, K., Moorman, C.: Tradeoffs in marketing exploitation and exploration strategies: the overlooked role of market orientation. *Int. J. Res. Mark.* **21**(3), 219–240 (2004)
- Benner, M.J., Tushman, M.L.: Exploitation, exploration, and process management: the productivity dilemma revisited. *Acad. Manage. Rev.* **28**(2), 238–256 (2003)
- Li, Y.H., Huang, J.W.: Exploitative and exploratory learning in transactive memory systems and project performance. *Inf. Manage.* **50**(6), 304–313 (2013)
- Gilson, L.L., Mathieu, J.E., Shalley, C.E., Ruddy, T.M.: Creativity and standardization: complementary or conflicting drivers of team effectiveness??. *Acad. Manage. J.* **48**(3), 521–531 (2005)
- Beckman, C.M., Haunschild, P.R., Phillips, D.J.: Friends or strangers? Firm-specific uncertainty, market uncertainty and network partner selection. *Organ. Sci.* **15**(3), 259–275 (2004)
- Gibson, C., Birkinshaw, J.: The antecedents, consequences, and mediating role of organizational ambidexterity. *Acad. Manage. J.* **47**(2), 209–226 (2004)
- Jansen, J.J., Van Den Bosch, F.A., Volberda, H.W.: Exploratory innovation, exploitative innovation, and performance: effects of organizational antecedents and environmental moderators. *Manage. Sci.* **52**(11), 1661–1674 (2006)

- Raisch, S., Birkinshaw, J.: Organizational ambidexterity: antecedents, outcomes, and moderators. *J. Manage.* **34**(3), 375–409 (2008)
- Raisch, S., Birkinshaw, J., Probst, G., Tushman, M.L.: Organizational ambidexterity: balancing exploitation and exploration for sustained performance. *Organ. Sci.* **20**(4), 685–695 (2009)
- Soto-Acosta, P., Popa, S., Martinez-Conesa, I.: Information technology, knowledge management and environmental dynamism as drivers of innovation ambidexterity: a study in SMEs. *J. Knowl. Manage.* **22**(4), 824–849 (2018)
- Chang, Y.Y., Hughes, M.: Drivers of innovation ambidexterity in small-to medium-sized firms. *Eur. Manag. J.* **30**(1), 1–17 (2012)
- Voss, G.B., Voss, Z.G.: Strategic ambidexterity in small and medium-sized enterprises: implementing exploration and exploitation in product and market domains. *Organ. Sci.* **24**(5), 1459–1477 (2013)
- Laursen, K., Salter, A.: Open for innovation: the role of openness in explaining innovation performance among UK manufacturing firms. *Strateg. Manage. J.* **27**(2), 131–150 (2006)
- Stanko, M.A., Henard, D.H.: Toward a better understanding of crowdfunding, openness and the consequences for innovation. *Res. Policy* **46**(4), 784–798 (2017)
- Ham, J., Choi, B., Lee, J.N.: Open and closed knowledge sourcing: their effect on innovation performance in small and medium enterprises. *Ind. Manage. Data Syst.* **117**(6), 1166–1184 (2017)
- Pfeffer, J., Salancik, G.R.: *The External Control of Organizations: A Resource Dependence Perspective*. Harper and Row, New York (1978)
- Peng, G.Z., Beamish, P.W.: MNC subsidiary size and expatriate control: resourcedependence and learning perspectives. *J. World Bus.* **49**(1), 51–62 (2014)
- Zhang, Y., Li, H.: The control design and performance in international joint ventures: a dynamic evolution perspective. *Int. Bus. Rev.* **10**(3), 341–362 (2001)
- Hernandez-Espallardo, M., Sanchez-Perez, M., Segovia-Lopez, C.: Exploitation-and exploration-based innovations: the role of knowledge in inter-firm relationships with distributors. *Technovation* **31**(5–6), 203–215 (2011)
- Rogers, E.M.: *Diffusion of Innovations: Modifications of a Model for Telecommunications*, *Die Diffusion von Innovationen in der Telekommunikation*. Springer, Berlin, Heidelberg (1995)
- Pan, X., Li, S.: Dynamic optimal control of process–product innovation with learning by doing. *Eur. J. Oper. Res.* **248**(1), 136–145 (2016)
- Li, S., Ni, J.: A dynamic analysis of investment in process and product innovation with learning-by-doing. *Econ. Lett.* **145**, 104–108 (2016)
- Heffner, M.C.: *Knowledge Management for Technological Innovation in Organizations: The Fusion Process for Creating Intellectual Capital*. University of Maryland University College, Maryland (2006)
- Barney, J.B.: Resource-based theories of competitive advantage: a ten-year retrospective on the resource-based view. *J. Manage.* **27**(6), 643–650 (2001)
- Grant, R.M.: The resource-based theory of competitive advantage: implications for strategy formulation. *Calif. Manage. Rev.* **33**(3), 114–135 (1991)
- Hillman, A.J., Withers, M.C., Collins, B.J.: Resource dependence theory: a review. *J. Manage.* **35**(6), 1404–1427 (2009)
- Lomi, A., Pattison, P.: Manufacturing relations: an empirical study of the organization of production across multiple networks. *Organ. Sci.* **17**(3), 313–332 (2006)
- Pfeffer, J.: A resource dependence perspective on intercorporate relations. *Intercorporate Relat. Struct. Anal. Bus.* **1**(1), 25–55 (1987)
- Yin, X., Shanley, M.: Industry determinants of the ‘merger versus alliance’ decision. *Acad. Manage. Rev.* **33**(2), 473–491 (2008)
- Xia, J., Wang, Y., Lin, Y., Yang, H., Li, S.: Alliance formation in the midst of market and network: insights from resource dependence and network perspectives. *J. Manage.* **44**(5), 1899–1925 (2018)



- Dong, D., Gao, X., Sun, X., Liu, X.: Factors affecting the formation of copper international trade community: based on resource dependence and network theory. *Resour. Policy* **57**, 167–185 (2018)
- He, Z.L., Wong, P.K.: Exploration vs. exploitation: an empirical test of the ambidexterity hypothesis. *Organ. Sci.* **15**(4), 481–494 (2004)
- Simsek, Z.: Organizational ambidexterity: towards a multilevel understanding. *J. Manage. Stud.* **46**(4), 597–624 (2009)
- Gupta, A.K., Smith, K.G., Shalley, C.E.: The interplay between exploration and exploitation. *Acad. Manage. J.* **49**(4), 693–706 (2006)
- Vassolo, R.S., Anand, J., Folta, T.B.: Non-additivity in portfolios of exploration activities: a real options-based analysis of equity alliances in biotechnology. *Strateg. Manage. J.* **25**(11), 1045–1061 (2004)
- Greco, L.M., Charlier, S.D., Brown, K.G.: Trading off learning and performance: exploration and exploitation at work. *Hum. Resour. Manage. Rev.* **29**(2), 179–195 (2019)
- Posch, A., Garaus, C.: Boon or curse? a contingent view on the relationship between strategic planning and organizational ambidexterity. *Long Range Plann.* 101878 (2019)
- Garcia, R., Calantone, R., Levine, R.: The role of knowledge in resource allocation to exploration versus exploitation in technologically oriented organizations. *Decis. Sci.* **34**(2), 323–349 (2003)
- Sidhu, J.S., Commandeur, H.R., Volberda, H.W.: The multifaceted nature of exploration and exploitation: value of supply, demand, and spatial search for innovation. *Organ. Sci.* **18**(1), 20–38 (2007)
- Tushman, M.L., O'Reilly, C.A., III.: Ambidextrous organizations: managing evolutionary and revolutionary change. *Calif. Manage. Rev.* **38**(4), 8–29 (1996)
- Lee, S.U., Park, G., Kang, J.: The double-edged effects of the corporate venture capital unit's structural autonomy on corporate investors' explorative and exploitative innovation. *J. Bus. Res.* **88**, 141–149 (2018)
- Turner, N., Swart, J., Maylor, H.: Mechanisms for managing ambidexterity: a review and research agenda. *Int. J. Manage. Rev.* **15**(3), 317–332 (2013)
- Chesbrough, H., Bogers, M.: Explicating open innovation: clarifying an emerging paradigm for understanding innovation. In: Chesbrough, H., Vanhaverbeke, W., West, J. (Eds.) *New Frontiers in Open Innovation*. Oxford University Press, Oxford (2014)
- Dahlander, L., Gann, D.M.: How open is innovation? *Res. Policy* **39**(6), 699–709 (2010)
- Chesbrough, H.: The logic of open innovation: managing intellectual property. *Calif. Manage. Rev.* **45**(3), 33–58 (2003)
- Adeosun, O.T., Shittu, A.I.: Disruptive financial innovations : the case of Nigerian. *J. Bus. Socioecon. Dev. Emerald Publ. Ltd.* 2635–1374 (2021)
- Aminova, C.M.M., Mareef, S.: Entrepreneurship ecosystem in Arab world : the status quo, impediments and the ways forward. *Int. J. Bus. Ethics Gov.* (2020)
- Wang, X., Xu, M.: Examining the linkage among open innovation, customer knowledge management and radical innovation: the multiple mediating effects of organizational learning ability. *Balt. J. Manag.* **13**(3), 368–389 (2018)
- Hill, S.A., Birkinshaw, J.: Ambidexterity and survival in corporate venture units. *J. Manage.* **40**(7), 1899–1931 (2014)
- Ganzaroli, A., De Noni, I., Orsi, L., Belussi, F.: The combined effect of technological relatedness and knowledge utilization on explorative and exploitative invention performance post-M and A. *Eur. J. Innov. Manag.* **19**(2), 167–188 (2016)
- Levinthal, D.A., March, J.G.: The myopia of learning. *Strateg. Manag. J.* **14**(S2), 95–112 (1993)
- O'Reilly III, C.A., Tushman, M.L.: Organizational Ambidexterity: Past, Present and Future 142 (2013)
- Eisenhardt, K., Martin, J.: Dynamic capabilities: what are they? *Strateg. Manage. J.* **21**, 1105–1121 (2000)
- Andriopoulos, C., Lewis, M.W.: Exploitation-exploration tensions and organizational ambidexterity: managing paradoxes of innovation. *Organ. Sci.* **20**(4), 696–717 (2009)

- Cao, Q., Gedajlovic, E., Zhang, H.: Unpacking organizational ambidexterity: dimensions, contingencies, and synergistic effects. *Organ. Sci.* **20**(4), 781–796 (2009)
- Bessant, J., Moslein, K.: *Open Collective Innovation, the Power of the Many over the Few*. Advanced Institute of Management Research, London (2011)
- Santoro, G., Ferraris, A., Giacosa, E., Giovando, G.: How SMEs engage in open innovation: a survey. *J. Knowl. Econ.* **9**(2), 561–574 (2018)
- Usman, M., Roijakkers, N., Vanhaverbeke, W., Frattini, F.: *A systematic review of the literature on open innovation in SMEs. Researching Open Innovation in SMEs* (2018)
- Vanhaverbeke, W.: *Managing Open Innovation in SMEs*. Cambridge University Press, New York (2017)
- Brunswick, S., Vrande, V.: Exploring open innovation in small and medium-sized enterprises. *New Front. Open Innov.* **1**, 135–156 (2014)
- Laursen, K., Salter, A.J.: The paradox of openness: appropriability, external search and collaboration. *Res. Policy* **43**(5), 867–878 (2014)
- Popa, S., Soto-Acosta, P., Martinez-Conesa, I.: Antecedents, moderators, and outcomes of innovation climate and open innovation: an empirical study in SMEs. *Technol. Forecast. Soc. Change* **118**, 134–142 (2017)
- Roper, S., Vahter, P., Love, J.H.: Externalities of openness in innovation. *Res. Policy* **42**(9), 1544–1554 (2013)
- Cheng, C.C., Shiu, E.C.: The inconvenient truth of the relationship between open innovation activities and innovation performance. *Manage. Decis.* **53**(3), 625–647 (2015)
- Gassmann, O., Enkel, E., Chesbrough, H.: The future of open innovation. *R&D Manag.* **40**(3), 213–221 (2010)
- Tiwana, A., Bush, A.A.: A comparison of transaction cost, agency, and knowledge-based predictors of IT outsourcing decisions: a US-Japan cross-cultural field study. *J. Manag. Inf. Syst.* **24**(1), 259–300 (2007)
- Zahra, S.A., Nielsen, A.P.: Sources of capabilities, integration and technology commercialization. *Strateg. Manage. J.* **23**(5), 377–398 (2002)
- Hongyun, T., Dogbe, C., Pomegbe, W., Sarsah, S., Acheampong, C.O.: Organizational learning ambidexterity and openness, as determinants of SMEs' innovation performance. *Eur. J. Innov. Manage.* (2020)
- Spence, M.: Job market signaling. *Q. J. Econ.* **87**(3), 355–374 (1973)
- Lubatkin, M.H., Veiga, J.F.: *Ambidexterity and Performance in Small-to Medium-Sized Firms: The Pivotal Role of Top Management Team Behavioral Integration*, April 2006
- He, J., Tian, X.: *Institutions and innovation: a review of recent literature*. ERN Institutions (2020)
- Barney, J.: Firm resources and sustained competitive advantage. *J. Manage.* **17**(1), 99–120 (1991)

# World Experience of Investing and Human Capital Development



Antonina Bazyliuk , Viktoriya Khomenko , and Victoria Ilchenko 

**Abstract** In modern business conditions, an important factor in financial and economic activities is employees, their competence, and professionalism. Globalization processes in the economic environment motivate the use of new information resources and technologies, the development of the economy's new areas. At the same time, there is a growing need for a high level of human capital development. Therefore, today it is necessary to develop and implement measures aimed at investing in human capital. In the context of the COVID-19 pandemic, investing in human capital is more vital than ever, as it can lay the foundation for sustainable, comprehensive recovery and growth in the future.

It is investments in technology, education, science that guarantee the formation of highly qualified competitive human capital at all levels of the economy. Hence, one of the main tasks of the company is to support and constantly improve the skills of its employees, the formation of such skills and abilities that would allow them to quickly adapt to innovative technologies and complex realities of the modern economy.

The purpose of the article is to review the foreign experience of developed countries in solving social problems that affect the human capital index. Studying the world experience of human capital formation and borrowing it for Ukraine can be an effective tool of state social policy. After all, investments in physical capital and infrastructure without sufficient investments in human capital may not give Ukraine the expected dividends.

**Keywords** Investment · Human capital · Intangible assets · Innovative development · Competitiveness · Human development index

---

A. Bazyliuk (✉) · V. Khomenko · V. Ilchenko  
National Transport University, Kyiv, Ukraine

V. Khomenko  
e-mail: [viktoriya\\_khomenko@ukr.net](mailto:viktoriya_khomenko@ukr.net)

V. Ilchenko  
e-mail: [nika-ivg@ukr.net](mailto:nika-ivg@ukr.net)

## 1 Introduction

The relevance of the chosen topic is due to the growing importance of human capital in the modern world and its huge potential for the development of Ukraine's economy. Without a clear understanding of the essence of the term "human capital", lack of quantitative and qualitative assessments, unclear terminology, outdated perception of the impact of human capital on the economy is the reason for its absence in public policy priorities.

The article presents statistics and materials that give a clear idea of the development of human capital in Ukraine and the world. The Human Capital Index, Knowledge-Economy Index, and KOF Index of Globalization, the budget of Ukraine for 2014 - 2020, and the results of the global study of the knowledge economy, which was conducted by the European Bank for Reconstruction and Development in 2020, are analyzed. The peculiarities of human capital formation and its role in the country's economy as a whole are also studied. The most effective tools, directions, and methods of social policy are determined, using which the effective and rational functioning of human capital as a productive factor of development will be carried out. Emphasis is placed on accelerating the development of intellectual and innovative services worldwide.

The analysis of the global index of human capital and its components is carried out. Ukraine's position in the ranking of the global human capital index and ways to improve it is determined. This analysis makes it possible to identify weaknesses and identify ways to strengthen them to eliminate economic backwardness compared to economically developed countries.

## 2 Literature Review

After studying the theoretical material on the topic of human capital, it was found that foreign and domestic researchers understand this issue differently and their views do not coincide. According to the American economist T. Schultz, one of the founders of the theory of human capital, investment in human capital, the growth of the value of human labor is becoming an important factor in economic restructuring, modernization of economic and legal institutions. Under this approach, development is seen not simply as an increase in economic growth, but as an investment in human capital and the eradication of poverty (Schultz 1961). According to the scientist, future incomes can be significantly increased by investing in their training, education, health, culture, thereby increasing their human capital.

D. Bohynia, V. Kutsenko, L. Shevchuk, O. Grishnova, and L. Turov made a significant contribution to the development of this theory. The relevance of the chosen topic today is only growing because in a market economy a person is an important factor in increasing the level of competitiveness of the state. Also, the topic of investing

in human capital was studied by certain Ukrainian scientists, such as O. Gizelo, V. Antonyuk, L. Tertychna, L. Kurylo, T. Matsybora, and others.

The main component of competitive human capital is an investment. Investment in human capital is the expenditure of money, energy, and time to create or increase human productivity - practice, health, skills, motivation - to increase efficiency and increase profits from economic activity (Kolot 2009). According to K. McConnell and S. Brew, investment in human capital is any action aimed at improving skills and qualifications and thus - productivity. Expenditures aimed at increasing productivity can be considered as investments because the specific costs are carried out with the expectation that they will be repeatedly offset by the increasing flow of profits in future periods (McConel and Brue 1992).

Simon Kuznets, the winner of the Nobel Prize in Economics, wrote in the last century that to move to a new technological way of life and scientific and technological breakthrough in the country must human capital be accumulated (Kuznets 1985). The main reasons for the selectivity of the world's leading post-industrial advanced economies are the low cost of national human capital and the lack of motivation and financial feasibility of widespread introduction of high-tech, productive production, mismatch of costs, and expected material rewards. which should form the necessary conditions for the transition to new technological systems. For these reasons, many developing countries cannot enter the developed world. According to experts of the Organization for Economic Cooperation and Development (OECD), only about 5% of developing countries in the future will be among the developed countries of the world (Johansson et al. 2060). All the others will remain in the "reception" of the technologically progressive world, or will not get there at all.

To accelerate the current level of human capital development in Ukraine, it is necessary to borrow high standards of social policy of developed countries and methods of ensuring them. Analysis of their achievements in solving social problems, prevention, and elimination of social threats and possible risks will contribute to the improvement of the social policy of Ukraine. In modern conditions, it has great importance, because Ukraine has embarked on the path of European integration. The half-century development of the European Union shows that the consistent formation of a socially-oriented and socially responsible model of social development, aimed at achieving a high level of human capital development, has allowed ensuring high rates of economic growth. The main directions of social policy and the model of the European social model are set out in the 1989 Charter of Social Rights of Workers, supplemented by the EU Charter of Fundamental Rights in 2000, and in the text of the Constitution signed in Rome in 2004 by EU heads of government and state. Recognition of the importance of the Charter of Fundamental Rights is that it is included as a special part in the Constitution of the European Union, which in the section "social policy" sets out the EU's obligations to ensure adequate social protection for its citizens (Braitte etablissaut un Constitution pourl'Europe 2005).

### 3 Research Methodology

To achieve the goal of the study and solve the relevant problems, the following general scientific methods were used: a comparative analysis - comparing the human development index of Ukraine and Poland to study the characteristics of the impact on sustainable economic development; statistical analysis - used to establish patterns and development of Ukraine in comparison with other economically developed countries; grouping method - used to analyze economic information, based on which the experience of investing in the human capital of foreign countries was studied. The information base consisted of reporting materials of the State Statistics Service of Ukraine, the results of research by the European Bank for Reconstruction and Development, data from the state budget of Ukraine 2020–2021.

### 4 Results

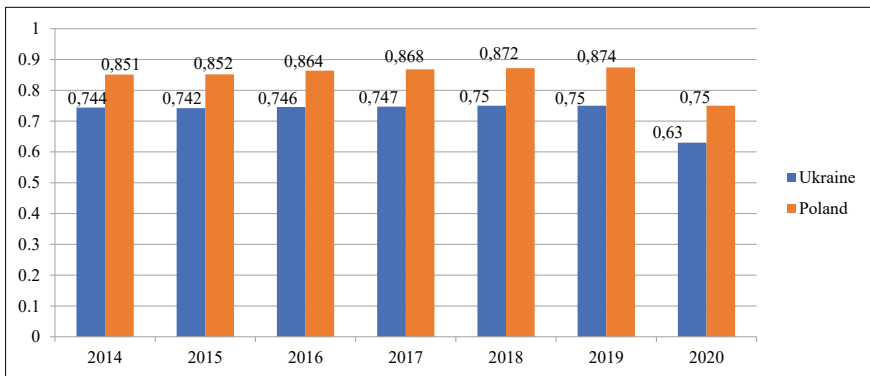
In modern economic conditions, the key role in the development of the country's economy is played by man as a carrier of wealth, which determines the comprehensive and maximum use of human resources. The formation of human capital is based on the proposition that innate human capital develops as a result of the conscious investment. Such investments are education, health promotion, on-the-job training.

Migration is an important factor influencing the development and formation of human capital. Ukraine has a huge human potential, but the country has for a long time a stable outflow of highly qualified specialists, usually with their innovative developments (brain drain). Today, the migration of young professionals is becoming a potential challenge for Ukraine. Unfortunately, the data of the State Statistics Service of Ukraine do not show the actual scale of migrants. In recent years, moving to study abroad, mainly in EU countries, especially Poland, has become widespread. It is estimated that the number of Ukrainian students in the EU is between 60,000 and 70,000, and in Poland alone more than 30,000. According to the results of surveys conducted in 2020 by the State Statistics Service of Ukraine, only one in ten intends to return to Ukraine, a third plan to stay in Poland, another third of them plan to move to another EU country (Statistical Yearbook of Ukraine 2019; <https://news.finance.ua/ua/news//393803/emigratsijni-tragediyi-dosvid-polshhi-latviyi-ta-rumuniyi>). But in Poland, the directions of student migration are completely different - the United States, Germany, Australia, Great Britain. Expenditures on research and development in Ukraine account for 0.43% of GDP, while the average for the EU-28 is 2.12% of GDP (Pisarenko and Kuranda 2019). In the Global Innovation Rating 2020, Ukraine ranks 45th out of 129 countries and 30th out of 39 European countries. The European Innovation Scoreboard classifies Ukraine as a “slow innovator,” but to move to a “moderate innovator” group, Ukraine needs to improve its overall index from 36 to 50 (Global Innovation Index 2020).

In Eastern Europe, government campaigns have been launched to persuade young people to return from Western Europe. Thus, in Poland, the state program Powroty was launched, under the terms of which compatriots are provided with logistical assistance in finding housing, work, and obtaining health insurance; in Romania, an association of businesses and universities has been set up to offer returnees free education and employment benefits; in Latvia, jobs are provided in the public sector. An interesting experience exists in India, the country with the world’s largest diaspora. To encourage people to return, the government strongly supports the development and research centers, especially in technology, healthcare, and pharmaceuticals.

It is interesting to compare the human development indices of Ukraine and Poland (see Fig. 1). The calculation of this index includes 33 indicators, grouped into six blocks according to the main aspects of human development: social status, population reproduction, welfare, comfortable life, decent work, and education (Regional human development 2018). The choice of countries for comparison is based not only on the neighborhood, but also on the dynamics of economic development of Poland, which 30 years ago lagged far behind Ukraine, and today far exceeds it. Therefore, the experience of Poland, as well as other countries, is extremely relevant for us.

The data in Fig. 1 show that the human development index of Ukraine during 2014 - 2020 consistently maintains the level of lag behind Poland. Structurally, this indicator depends on the country’s activities in such areas as improving health care, education, increasing incomes, optimizing migration policy, improving economic and social infrastructure, developing social partnerships and entrepreneurial initiatives. Ukraine lags behind Poland, first of all, in such indicators as average life expectancy, level of education, and quality of life. The significant decline in the overall index in both countries, which occurred in 2020, as in other countries, was due to the total spread of the COVID-19 pandemic and the reduction of business activity due to the use of lockdown by most countries (Kastrulina 2021).



**Fig. 1** Index of human development of Ukraine and Poland for 2014 – 2020 World Economic Forum 2021 Source: developed by the authors based on ()

At the same time, in the period from 2014 to 2019, the human development index in Ukraine had, albeit small, tendency to increase. This indicates that Ukraine retains the potential for human capital development and the ability to compete with other leading countries.

At the global level, the wealth of human capital per capita is closely correlated with the value of the gross domestic product (GDP) per capita. Given that the structural component of GDP is the wage bill, there is a close correlation between the size of the average wage in the country, the share of the wage bill in GDP, and the value of GDP per capita. In poor countries with low per capita GDP, the share of the payroll in GDP and the average wage are also low. Currently, their low parameters are a powerful brake force hindering the economic development of the country. This is due to the low level of total solvency, which makes further development economically impractical. In addition, cheap labor displaces scientific and technological progress, which stimulates innovation. For this reason, the vast majority of countries with low GDP per capita are also technically backward. However, this is not typical for Ukraine, which has significant economic potential: a highly educated workforce, production capacity, the availability of advanced technologies. Ukraine currently lacks its efficient use and fair distribution of the gross value of the gross product.

It should be noted that in Ukraine, in contrast to other countries, with a low share of the wage bill in GDP (40–45%), the share of final consumption in GDP is about 90%. A significant excess of expenditures over revenues indicates a high level of the shadow economy. Their presence is indicated by the significant scale of population stratification, deepening and expanding poverty, low rates of renewal of production. To overcome Ukraine's lag behind economically developed countries, it is necessary to increase the weight of human capital, using it as a motivator for the legalization of shadow activities. To increase the cost of labor is not the cause of another surge in inflation, it is necessary to coordinate the implementation of these measures with changes in tax and antitrust laws, to reduce tax pressures for businesses that increase wages without increasing costs, i.e. through legalization income. At the same time, it is necessary to strengthen control over the abuse of monopoly position, to consider the validity of each increase in prices and tariffs by monopolists, to introduce a tax on costs. In this context, increasing the importance of human capital, supported by measures to restructure the cost structure of social production, will give Ukraine an impetus for further development by restructuring production and increasing its efficiency, expanding domestic consumption, and most importantly motivating investment activity to increase productivity.

The scale of integration of different countries into the world space reveals the KOF Index of Globalization, developed by the Swiss Institute of Economics. All indicators of this index are grouped into three groups: social, economic, and political globalization. Ireland, Austria, Belgium, the Netherlands, and Switzerland are the most integrated into the world economy, with index values ranging from 92.8 to 88.79. The countries of the former USSR occupy the following positions in the ranking: Estonia - 28th place with an index of 79.2; Latvia - 41st place with an index of 71.4; Ukraine - 45th place with an index of 70.2; Russia - 48th place with an index of 68.2; Belarus - 75th place with an index of 60.7. All these countries, except Belarus,



belong to countries with an average level of integration into the world economy (Top 2020).

To assess the development of human capital, many indices are used, the most famous of which is the Human Capital Index (see Table 1), which is systematically calculated by the World Bank (Index 2020).

The Human Capital Index is a project of the World Bank, part of the Human Capital Project. This index measures the human capital that a person can count on, from birth to 18 years of age, given the country's risks in education and health systems. The score varies from 0 to 1.

According to the results of a global study of the knowledge economy conducted by the European Bank for Reconstruction and Development in 2020 (Introducing the EBRD Knowledge Economy Index 2019), human capital forms 70% of the national wealth of developed countries and only 30% of the national wealth of Ukraine. According to the Knowledge Economy Index, Ukraine has - 4.33 points, this group includes countries with the early development of the knowledge economy. Human Capital Index of Ukraine - 0.63 points, as in Montenegro, Brunei, Albania, or Costa Rica (Report on the state of human development for 2019). According to the State Statistics Service of Ukraine, the number of employed people aged 15–70 years for 9 months of 2020, compared to 9 months of 2019, decreased by 627 thousand people and amounted to 16.0 million people. The employment rate of the population aged 15–70 decreased from 58.3% to 56.5%, which is one of the factors of labor migration (The situation on the labor market 2020).

The Global Human Capital Index is used as a tool to assess progress and opportunities for exchange and learning between countries (Human capital development: on the way to quality reforms 2018). It is calculated by 130 countries to assess the development of human capital on a scale from 0 (worst) to 100 (best) for the four main components in the five age groups 0–14 years; 15–24 years; 25–54 years; 55–64 years; 65 and older (see Fig. 2).

Research conducted by the European Bank for Reconstruction and Development in 2020 showed that on average the world uses only 62% of its human capital, the rest - 38% of the countries do not realize or neglect their talents. Only 25 countries have sold 70% of human capital, 50 countries use human capital from 60 to 70%. Another 41 countries are estimated at 50% to 60%. The other 14 countries are below 50%, which means that these countries use less than half of their human capital (see Fig. 3) (Human capital development: on the way to quality reforms 2018).

Ukraine's high overall index was achieved solely due to the high potential and relatively low unemployment. However, in terms of the introduction of the latest developments, Ukraine lags far behind other countries except Turkey. Each year, the World Economic Forum ranks countries in terms of global competitiveness, including education, health, and efficiency in the labor market. In 2020, Ukraine ranks 85th out of 138 countries in this ranking (World Economic Forum 2019).

Therefore, Ukraine should work to improve staff skills, invest in human capital and improve the conditions for the functioning of quality education, which will be the key to sustainable development. In this context, increasing the cost of labor will help increase the efficiency of human capital. These measures will contribute to

**Table 1** Human capital (Index 2020)

Country	HCI	Country	HCI	Country	HCI
Antigua and Barbuda	0,6	Albania	0,63	Egypt, Arab Rep	0,49
Australia	0,77	Argentina	0,6	El Salvador	0,55
Austria	0,75	Armenia	0,58	Eswatini	0,37
Bahrain	0,65	Azerbaijan	0,58	Ghana	0,45
Belgium	0,76	Belarus	0,7	Honduras	0,48
Brunei Darussalam	0,63	Bosnia and Herzegovina	0,58	India	0,49
Canada	0,8	Botswana	0,41	Kenya	0,55
Chile	0,65	Brazil	0,55	Kiribati	0,49
Croatia	0,71	Bulgaria	0,61	Kyrgyz Republic	0,6
Cyprus	0,76	China	0,65	Lao PDR	0,46
Czech Republic	0,75	Colombia	0,6	Lesotho	0,4
Denmark	0,76	Costa Rica	0,63	Mauritania	0,38
Estonia	0,78	Dominica	0,54	Micronesia, Fed. Sts	0,51
Finland	0,8	Dominican Republic	0,5	Moldova	0,58
France	0,76	Ecuador	0,59	Mongolia	0,61
Germany	0,75	Fiji	0,51	Morocco	0,5
Greece	0,69	Gabon	0,46	Myanmar	0,48
Hong Kong SAR, China	0,81	Georgia	0,57	Nepal	0,5
Hungary	0,68	Grenada	0,57	Nicaragua	0,51
Iceland	0,75	Guatemala	0,46	Nigeria	0,36
Ireland	0,79	Guyana	0,5	Pakistan	0,41
Israel	0,73	Indonesia	0,54	Papua New Guinea	0,43
Italy	0,73	Iran, Islamic Rep	0,59	Philippines	0,52
Japan	0,8	Iraq	0,41	Senegal	0,42
Korea, Rep	0,8	Jamaica	0,53	Solomon Islands	0,42
Kuwait	0,56	Jordan	0,55	Sri Lanka	0,6
Latvia	0,71	Kazakhstan	0,63	Tanzania	0,39
Lithuania	0,71	Kosovo	0,57	Timor-Leste	0,45
Luxembourg	0,69	Lebanon	0,52	Tunisia	0,52
Macao SAR, China	0,8	Malaysia	0,61	<b>Ukraine</b>	<b>0,63</b>
Malta	0,71	Marshall Islands, Rep	0,42	Uzbekistan	0,62
Mauritius	0,62	Mexico	0,61	Vanuatu	0,45
Nauru	0,51	Montenegro	0,63	Vietnam	0,69
Netherlands	0,79	Namibia	0,45	West Bank and Gaza	0,58

(continued)

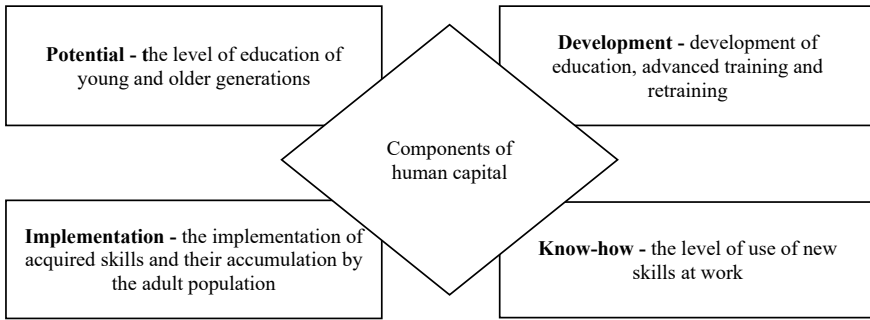
**Table 1** (continued)

Country	HCI	Country	HCI	Country	HCI
New Zealand	0,78	North Macedonia	0,56	Zambia	0,4
Norway	0,77	Paraguay	0,53	Zimbabwe	0,47
Oman	0,61	Peru	0,61	Afghanistan	0,4
Palau	0,59	Russian Federation	0,68	Burkina Faso	0,38
Panama	0,5	Samoa	0,55	Burundi	0,39
Poland	0,75	Serbia	0,68	The Central African Republic	0,29
Portugal	0,77	South Africa	0,43	Chad	0,3
Qatar	0,64	St. Lucia	0,6	Congo, Dem. Rep	0,37
Romania	0,58	St. Vincent and the Grenadines	0,53	Ethiopia	0,38
Saudi Arabia	0,58	Thailand	0,61	The Gambia	0,42
Seychelles	0,63	Tonga	0,53	Guinea	0,37
Singapore	0,88	Turkey	0,65	Haiti	0,45
Slovak Republic	0,66	Tuvalu	0,45	Liberia	0,32
Slovenia	0,77	Algeria	0,53	Madagascar	0,39
Spain	0,73	Angola	0,36	Malawi	0,41
St. Kitts and Nevis	0,59	Bangladesh	0,46	Mali	0,32
Sweden	0,8	Benin	0,4	Mozambique	0,36
Switzerland	0,76	Bhutan	0,48	Niger	0,32
Trinidad and Tobago	0,6	Cambodia	0,49	Rwanda	0,38
United Arab Emirates	0,67	Cameroon	0,4	Sierra Leone	0,36
United Kingdom	0,78	Comoros	0,4	South Sudan	0,31
United States	0,7	Congo, Rep	0,42	Sudan	0,38
Uruguay	0,6	Côte d'Ivoire	0,38	Tajikistan	0,5

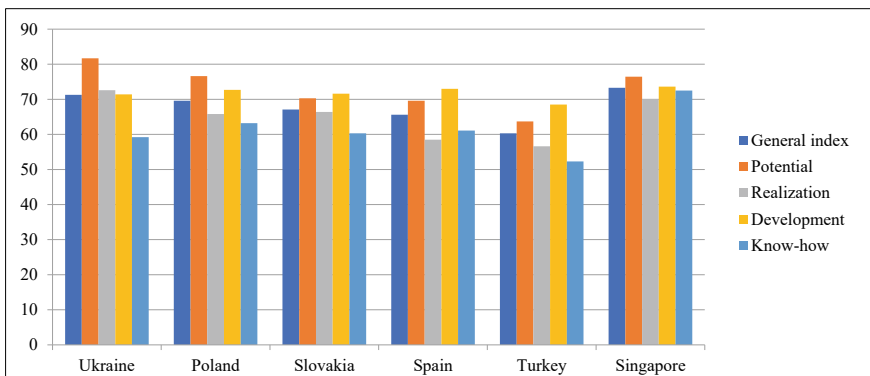
Source: developed by the authors based on (Index 2020)

the redistribution of the GDP and increase its level, which will lead to an increase in the budget, which is currently extremely insufficient to finance human capital development.

The reduction of state budget expenditures of Ukraine on social security and protection from UAH 322 billion in 2020 to UAH 313 billion in 2021 on the social sphere indicates an insufficient amount of investment in the human capital of Ukraine (Ukraine 2021). Currently, the effectiveness of investment in human capital is determined by the extent to which the individual's acquired knowledge is used in economic activities. The values of the calculated correlation coefficients between the number



**Fig. 2** Components of the global human capital index Human capital development: on the way to quality reforms 2018 Source: developed by the authors based on ()



**Fig. 3** Global human capital index Human capital development: on the way to quality reforms 2018 Source: developed by the authors based on ()

of graduates of educational institutions and labor productivity in Ukraine indicate their close relationship (Ukrainy et al. 2018).

The development and formation of the human capital of the country depend not only on public funding but also on the participation in this process of organizations, enterprises, institutions that are the users of this capital. The experience of economically developed countries in investing in vocational training is given in the Table. 2 (Zakharova 2009).

Thus, having analyzed the above, we see that Ukraine has the potential that still needs to be developed, to be competitive in the international market. The COVID-19 pandemic has hurt the economic development of many countries, which has led to the decline in the human development index, an indicator that considers the average population (see Table 3) and is currently declining in all countries.

Even in the optimistic scenario, which now seems almost fantastic, the Table 3 indicate a reduction in the working population in Ukraine. That is, in the labor market of Ukraine in 2030 in any case there will be a shortage of labor, and the burden on the

**Table 2** Experience of countries in the field of professional development investment

Country	State support for investment in professional development	Tax and financial policy in the field of professional development	The number of contributions to the formation of vocational training funds
Netherlands	Financing of primary vocational education at public expense	Tax rebates for training companies	The amount of the contribution is specified in the collective agreement
Japan	Budget benefits for companies that provide professional staff training	The Employment Insurance Fund has opened a special account, the funds of which are transferred to the development of employees	Mandatory contributions to the fund - 0.1% to the payroll
Great Britain	The government allocates funds for programs aimed at awarding professional qualifications	Enterprises transfer funds to vocational training funds	At least 1% of the salary fund
Sweden	The state reimburses 80% of the company's costs for vocational training	Financing of employment promotion funds at the expense of the enterprise	It is determined annually in the process of signing the contract
Denmark	State guarantees for training	Training is provided by the organization of the national labor market, and funding is provided by the state	Employees and enterprises pay 8% of the gross wage bill
The USA	Subsidize each state to provide training for the unemployed	Enterprises that are investors in the professional development of young people are completely exempt from the tax	It is determined annually at the time of signing the contract

Source: developed by the authors based on (Zakharova 2009)

working population will be 10% higher than in 2020 (World Population Prospects 2020).

The UN forecast is less optimistic, according to which by 2030 the birth rate in Ukraine may fall to 250 thousand per year, and mortality will increase significantly (up to 388 thousand in 2030) life expectancy for both women and men in the next ten years will not change. It is noteworthy that according to the UN forecast and the expectations of Ukrainian sociologists in a negative scenario, the average life expectancy of men in Ukraine will not increase at all, but will decrease to 65–67 years, which is extremely low for countries with our incomes (World Population Prospects 2020).

**Table 3** Forecast of human capital development in Ukraine until 2030

	The 2020 year	Forecast of the National Academy of Sciences of Ukraine (2030 year)			UN forecast (2030 year)		
		constant	low	high	constant	low	high
Birth rate per year, persons	293,457	331,300	313,800	430,170	336,800	249,000	435,800
Natural increase (decrease) in population per year, persons	-323,378	-374,100	-373,958	-109,600	-344,200	-388,000	-202,400
Life expectancy from birth, years							
women	76,9	78	74,9	81,2	77,9	77,2	78,5
men	68,3	70,2	65,5	74,4	68,3	67,5	69,1
Working population (15–64 years), thousand people	28,199	26,700,7	26,452,1	27,899,3	26,941	27,047	27,048

Source: developed by the authors based on (World Population Prospects 2020)

If the demographic situation in Ukraine remains at the current level, over the next ten years the working population will decrease by 4.5 - 5.5%, and if it deteriorates, the losses will be about 6%. According to the IMF forecast, such a loss of the working population will not allow Ukraine's GDP to grow faster than 2.5% per year. At the same time, the natural reduction of the population, even with a 30% increase in the birth rate in the optimistic scenario, will still amount to more than 100 thousand Ukrainians per year (National Economic Strategy 2030).

Thus, the level of social orientation of Ukraine is not high, however, in terms of investment in human capital and poverty, Ukraine can be described as a country with an average level of economic orientation to the social sphere.

## 5 Conclusion

The study found that competitive human capital has a significant impact on the social and economic development of the state. Compared to foreign countries, to eliminate Ukraine's economic backwardness, it is necessary to increase the level of qualification of people, because, in the absence of proper development of the human factor, the desired level of progress cannot be achieved. The state must understand that investing in employee education is much cheaper in the long run than paying for low health, unemployment and social exclusion, low incomes, which are closely linked to low skills in today's world.

The process of analysis of indicators of investment in human capital in Ukraine revealed a reduction in spending on its development by the state. To solve this problem it is necessary to use the positive experience of foreign countries in the field of state support for the development and formation of human capital.

To ensure the quality of human capital and increase investment in its development in Ukraine, it is necessary to: regulate the labor supply in the labor market, provide training and improve the quality of labor by the structural changes taking place in the economy; to stimulate innovative development in educational institutions; to provide training that will meet the modern requirements of employers for mobility, the ability to generate new ideas and readiness to implement innovations within the strategic goals of the enterprise; to introduce incentives for individual investments in human capital by excluding from the tax base personal expenses for health promotion and education measures, education for oneself and family members, payments to health and pension insurance funds.

There is a strong link between human capital and economic growth, and the development of human capital can certainly stimulate the economy. Workers with a high level of knowledge, more work experience are in high demand in the labor market and are capable of high social mobility. Not only do they show better productivity in the economy and create more high value-added products, but they also have higher incomes and therefore spend more, which is an additional stimulus for growth, both in the domestic market and the economy as a whole. Investing in human capital is an effective and correct way of economic recovery and maintaining sustainable growth in Ukraine.

Ukraine's future is directly linked to the development of the nation's intelligence, the country's most expensive capital. Increasing investment in human capital, creating appropriate conditions for its development should be the main task of public policy. It is these measures that will help Ukraine's economy emerge from the recession and overcome its negative consequences.

## References

- Braite etablissaut un Constitution pour l'Europe. Luxembourg (2005)
- Global Innovation Index 2020, [https://www.wipo.int/edocs/pubdocs/en/wipo\\_pub\\_gii\\_2020.pdf](https://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2020.pdf), last accessed 2021/09/26.
- Human capital development: on the way to quality reforms (2018). [https://razumkov.org.ua/upl/oads/article/2018\\_LUD\\_KAPITAL.pdf](https://razumkov.org.ua/upl/oads/article/2018_LUD_KAPITAL.pdf). Accessed 25 Sept 2021
- The Human Capital Index 2020. <https://www.worldbank.org/en/publication/human-capital>. Accessed 25 Sept 2021
- Introducing the EBRD Knowledge Economy Index (2019). <https://www.ebrd.com/documents/policy/download-the-ebrds-knowledge-economy-index.pdf>. Accessed 26 Sept 2021
- Johansson, A., et al.: Group of Twenty - global a mechanism for coordinating and managing growth? Long-term global growth scenario until 2060. *Bullet. Int. Organ.* 4(8) (2013)
- Kastrylina, Y.M.: Development of human capital as a strategic goal of creating an innovative economy. <http://economics.open-mechanics.com/articles/610.pdf>. Accessed 26 Sept 2021
- Kolot, A.M.: Labor economics and social-labor relations. KNEU, Kyiv (2009)

- Kuznets, S.S.: Biographical Memoirs: Volume 79 (1985). <https://www.nap.edu/read/10169/chapter/13>. Accessed 26 Sept 2021
- McConel, C.R., Brue, S.L.: Economics: Principles, Problems and Policies. Respublika, Moscow (1992)
- National Economic Strategy 2030. <https://nes2030.org.ua/docs/doc-vector.pdf>. Accessed 26 Sept 2021
- Pisarenko, T.V., Kuranda, T.K.: Scientific and scientific-technical activity in Ukraine in 2019: scientific-analytical report. UkrINTEI, Kyiv (2020)
- Regional human development. Statistical collection (2018). [http://www.ukrstat.gov.ua/druk/publicat/kat\\_u/2018/zb/09/zb\\_rlr2017\\_pdf.pdf](http://www.ukrstat.gov.ua/druk/publicat/kat_u/2018/zb/09/zb_rlr2017_pdf.pdf). Accessed 26 Sept 2021
- Report on the state of human development for 2019. [https://www.undp.org/content/dam/ukraine/docs/HDR/hdr\\_2019\\_overview\\_-\\_ukrainian.pdf](https://www.undp.org/content/dam/ukraine/docs/HDR/hdr_2019_overview_-_ukrainian.pdf). Accessed 26 Sept 2021
- Schultz, T.: Investment in human capital. *Am. Econ. Rev.* **51**, 1–17 (1961)
- Statistical Yearbook of Ukraine (2019). [http://ukrstat.gov.ua/druk/publicat/kat\\_u/2020/zb/11/zb\\_yearbook\\_2019.pdf](http://ukrstat.gov.ua/druk/publicat/kat_u/2020/zb/11/zb_yearbook_2019.pdf). Accessed 26 Sept 2021
- The situation on the labor market and the activities of the state employment service in 2020. [https://www.dcz.gov.ua/sites/default/files/infofiles/sytuaciya\\_na\\_rp\\_ta\\_diyalnist\\_dsz\\_0.pdf](https://www.dcz.gov.ua/sites/default/files/infofiles/sytuaciya_na_rp_ta_diyalnist_dsz_0.pdf). Accessed 25 Sept 2021
- Top 50 countries in the Globalization Index 2020. <https://www.statista.com/statistics/268168/globalization-index-by-country/>. Accessed 26 Sept 2021
- Ukraine: 2021 State Budget. <https://mof.gov.ua/storage/files/Ukraine%20-%202021%20Budget%20-%20Dec%202020%20.pdf>. Accessed 26 Sept 2021
- Verkhovna Rada Ukrainy. The Law of Ukraine «On the State Budget of Ukraine for 2018. *Vidomosti Verkhovnoi Rady Ukrainy*, 3–4 (2018). <https://zakon.rada.gov.ua/laws/show/2246-19#Text>. Accessed 25 Sept 2021
- World Economic Forum (2019). [http://www3.weforum.org/docs/WEF\\_TheGlobalCompetitivenessReport2020.pdf](http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2020.pdf). Accessed 26 Sept 2021
- World Economic Forum. <https://www.weforum.org/>. Accessed 25 Sept 2021
- World Population Prospects 2020. <https://population.un.org/wpp/Publications/Files/WPP2019-Walchart.pdf>. Accessed 25 Sept 2021
- Zakharova, O.V.: Struktura ta dzherela finansuvannia investytsii u personal v umovakh promysloвого pidpriemstva. *Visnyk Skhidnoukrajinskoho universytetu im. Volodymyra Dalia*, **10**(140), Ch. 2, 49–53 (2009)



# Application of the Balanced Scorecard and Costing System Relying on Activities to Reduce Costs of Bank Services



Marwan Rushdi Yousef and Asaad Ali Karam

**Abstract** The study aims to show an analytical merging into the balanced scorecard and costing system in bank services. In order to accomplish the requirements of the research, the study relied on the field method and used the questionnaire as a means to collect data; the sample size of this study was (97), the Statistical Package for Social Sciences (SPSS) as statistical tools and techniques were used to analyse the data. The study reached a set of results, including The increasing use of modern technology in providing banking services made the bank seek to adopt the activity-based costing system. The bank's management realised that the financial and non-financial information provided by the balanced scorecard and activity-based costing systems enables senior management to make rational strategic decisions towards reducing costs. The study recommends managers of banks to establish a sub-management for costs and benefit from its cadres of cost accountants who occupy other jobs to apply the costing system based on activities and use of information which is provided to ensure more accurate control of the cost banking services.

**Keywords** Balanced scorecard · Costing system · Cost reduction · Banking services

## 1 Introduction

The traditional accounting performance systems and measurements are no longer able to give an integrated picture of the organizational performance to modern enterprises. That is due to their inability and provide indicators to performance measures that enable those establishments to measure and evaluate their internal and external performance, therefore, necessitating a trend towards modern methods of accounting

---

M. R. Yousef  
City University College of Ajman, Ajman, UAE

A. A. Karam (✉)  
University of Duhok, Duhok Kurdistan Region, Iraq and City University College of Ajman,  
Ajman, UAE  
e-mail: [Asaad.ali@uod.ac](mailto:Asaad.ali@uod.ac)

management, and creating a competitive advantage. It mainly depends on the relationship between the various capabilities and skills of the facility more than the individual performance of each of them. Therefore the facility must find appropriate means to maintain its effective administrative structure to implement advanced strategies.

The banking sector is one of the critical sectors that support the economy. It is considered one of the essential means upon which economic development was based in terms of its impact on society. Hence, it is necessary to pay attention to modern management accounting methods in this sector. The banks also need to apply modern management accounting methods to provide departments with the information required and achieve the goals and feasibility of this decision. However, the most significant measure that allows achieving effective competition for the bank within the banking market is to reduce the costs of banking services and to achieve the goal of lowering banking services costs, moreover, the cost system must be effective in the bank, that allows accurate measurement of the cost of banking services and provides the data and information necessary for decision-making (Carenys and Sales 2008).

Cost systems have witnessed several developments that resulted in a reconsideration of traditional cost accounting systems, which was subjected to many criticisms as a result of the information provided that lacks accuracy and appropriateness in the light of the modern environment. Moreover, have also been subjected to many criticisms, especially about the high costs of comprehensive surveys and interviews with workers necessary to collect the data and information required to complete the activity-based costing system and the presence of personal judgment and judgment to allocate time to the facility's activities, and the difficulty of maintaining and maintaining the system as a result of changes that occur in operational processes as well as change in the volume of expenditure on resources, such as adding new activities and increasing the diversity of products, distribution channels and customers (Öker and Özyapici 2013; Sleimi et al. 2018).

According to probability theory, it is concerned with the analysis of random phenomena. Therefore, the researcher relied on the current research on the study of the balanced scorecard and the activity-based costing system to reduce the costs of banking services. Thus, according to the theory, one of the many possible outcomes of the study may be by chance reached the actual result (Acree 2021).

This study contributes to determining the cost of unused resources for service activities and providing cost information that helps in understanding the relationship between the available resources cost and the demand for them in a way that leads to a reduced rate of energy cost and thus reducing the final cost of the service provided to the customer.

Therefore the problem of the research was the inability of traditional accounting systems to provide managers with more accurate financial and non-financial information that would help them to reach the goal of reducing the cost of banking services without compromising their quality. Accordingly, the research problem can be raised through the following question: What is the role of the balanced scorecard integration and activity-based costing system in reducing banking service costs? The following questions arise from it: Does the Agricultural Cooperative Bank of Iraq apply the

balanced scorecard perspectives to reduce the costs of banking services? Does the Agricultural Cooperative Bank of Iraq have the ingredients for a successful application of the activity-based costing system to reduce the costs of banking services? Does the integration of the Balanced Scorecard and activity-based costing systems lead to a reduction in the cost of banking services?

The current study aims to achieve the following objectives: Identify the balanced scorecard perspectives and evaluate its effectiveness on the services provided by the Agricultural Cooperative Bank of Iraq. Presentation and analysis of the activity-based costing system and its role in reducing the costs of banking services in the Agricultural Cooperative Bank of Iraq. Explanation of integrating the balanced scorecard and the activity-based costing system in reducing the costs of banking services in the Agricultural Cooperative Bank of Iraq.

This study has structured as the following axis: The subject was dealt with through three main axes, where the first axis deals: the introduction and literature review, and the second axis: the theoretical framework and contains the balanced scorecard system, the activity-based costing system, in reducing banking costs. The third axis deals with the field study and the conclusion: including data analysis and interpretation of results and recommendations.

## **2 Literature Review and Hypothesis Development**

In this part, the researcher deals with the most important previous studies related to the dimensions of the problem the subject of the study, to identify the most critical findings of those studies, the research gap and an attempt to fill it in the body of this study. Those studies are reviewed in the framework of the evolution that occurred in the role played by the costing system based on directed activity in time.

### ***2.1 Balanced Scorecard***

The concept of the Balanced Scorecard: Benková et al. (2020) introduced a system of measurement they called the Balanced Scorecard for performance, and this was an attempt by them to address the long-known deficits in the management of the organization using only traditional financial measures (such as the rate of return on shares, and the rate of return on invested assets) although financial measures had a good role in the industrial era, they are considered insufficient, with companies trying to find skills and competencies in the current competitive environment facing companies now (Firk et al. 2020). The Balanced Scorecard can be define as: “A management system that aims to help owners and managers translate the vision and strategies of their companies into a set of interrelated goals, measurements, and procedures.

Therefore, relying on the balanced scorecard, as the financial report, is no longer the only way companies can evaluate their activities and chart their future movements (Fatima and Elbanna 2020). It is also known as: “a comprehensive approach to performance measurement and evaluation through the perspective of Strategic, through which the enterprise’s strategy translated into strategic objectives, standards, target values , and procedural steps to achieve the purposes of the enterprise. The researcher believes that the balanced scorecard is one of the strategic management tools that help business organizations to translate their goals and vision of the strategy into a tangible reality through a set of perspectives.

The importance of the balanced scorecard to evaluating the performance of the enterprise by clarifying, interpreting, and developing the enterprise’s strategy:

- They are identifying and diagnosing strategic initiatives and their importance in the facility.
- Communicate the strategy to all management levels in the facility.
- Communicate the strategy to all administrative levels in the facility.
- Achieving and defining the objectives of business units and individuals within the general strategy of the facility.
- Linking the results of periodic performance monitoring to growth and targeted learning of the skills of individuals in the organization to improve and develop the organization’s strategy.

### **Balanced Scorecard Perspectives**

**Internal Operations Perspective:** This perspective focuses on internal operations and the customer perspective as it tries to create value for customers and focuses on the financial outlook in attempting to increase shareholder value (Turshan et al. 2020).

**Financial Perspective:** The financial perspective measures are one of the important components of the Balanced Scorecard, especially in the profit-oriented units, because they summarize the financial results of implementing their strategy (Bura and Anggraeni 2020).

**Learning and Growth Perspective:** It represents the capabilities of the workers and the skills available in any economic unit. It tries to excel in reaching the best internal processes to create value for both customers and owners. This perspective works on the economic unit’s infrastructure to develop long-term development and growth (Mikula et al. 2020; Karam and Kitana 2018).

**Customer perspective:** The essence of the strategy of economic units lies in the value provided to the customer, which can be described through the distinctive assortment (quality, products, prices, services, and relations with the customer), where the perspective diagnoses how the economic unit can be distinguished from its competitors from other teams by attracting and retaining customers (TUAN 2020).

**Societal Environment Perspective:** Economic units constitute an important part of the society in which they operate, which requires them to contribute to the welfare of that society in order to maintain its continued success (Mamabolo and Myres 2020).

The researcher believes that the organization may have considered the societal environment when developing its strategy by studying customers’ behaviour, tastes,

and needs in the environment in which it operates. Since it later has added the fifth perspective that it called the societal environment, which has exited from the narrow concept of social performance to a broader concept and view by thinking about protecting the safety of that environment and preserving it from pollution, congestion, and noise that may be due to its daily activities. Therefore, taking into account the society's view and measuring the degree of satisfaction with it without harming the interests of other parties, including shareholders, old customers, and decision-makers.

Abernethy et al. (2001) discussed addressing the problems and difficulties facing the activity-based costing system as a result of the high costs of establishing this system and confronting it with resistance from the workers for its reliance on the comprehensive survey of the employees of the facility to prepare the estimates on which it based. The use of time drivers in cost allocation and management, the concepts of this framework, and its applied steps were defined as a costing system based on time-oriented activity.

The study argued the general framework proposed in the cost accounting of the time-oriented activity-based cost approach that addresses the defects of the cost system based on traditional activity and simplifies it by excluding the need to conduct interviews to track resource costs on activities before allocating them to cost objectives (orders, products, and clients). The new system gives resource costs directly to cost targets using a framework that requires only two sets of estimates: Determining the cost of providing resource energy - using the resource energy cost average. Research experiment and application to ensure its safety and validity, and reliance on path analysis for secondary data obtained from a survey list distributed to a sample of managers and heads of company departments (Abora et al. 2014).

#### *Activity-Based Costing Concept*

There are many concepts, the activity-based costing system as a modern way to meet the increasing and changing needs of information in the contemporary business environment to provide better accuracy in calculating costs of activities analysis and cost causes within it (Quesado and Silva 2021). It is also defined as: "the approach that can bridge the gap or reduce the gap between theory and practice in the field of measuring production costs" (Duran & Afonso 2020). Further, has been defined as: "a method or approach to improve cost values on activities as primary cost purposes so that the cost of these activities used as a basis for determining the costs of other purposes such as goods, services, and customers (Nota et al. 2020).

The components of the activity-based costing system: The work of this system requires the availability of three main components, which are the following: Activities are a set of processes or procedures that form the core of the work performed within the facility, where the success of the activity-based costing method (ABC) depends. On the accuracy of determining the facility's activities, inhomogeneous groups by making a list of all types of work within the facility, such as handling, packaging, packaging, and others (Safeiee et al., 2020). It also defined "the processes of doing something in a certain way, consuming a volume of resources and that means behind every activity there are actions that consume resources, which is the reason for the

existence of costs” (Al-Dhubaibi 2021). The researchers see that activities are every work done by the facility that consumes resources (cost elements) to produce a specific product or provide a particular service is also the main reason for consuming the facility’s resources.

Cost Drivers: is defined as: “A quantitative measure that reflects the fundamental reason for the formation of the cost component within each cost container Zamrud and Abu (2020), activity or cost base (Zaini et al., 2020). Variable quantitative measures explain the reason for the occurrence of cost by consuming the facility’s resources (cost elements), and these causes are the causes, events, procedures, and processes.

#### *The Balanced Scorecard and Activity-Based Costing System*

Some studies have indicated that integrated systems whose components cooperate perform better than the performance of each design individually and that the successful implementation of modern manufacturing technology requires the application of management accounting systems (Jourdaine et al., 2021). The emergence and development of the balanced performance measure as an administrative system and not as a tool for measuring performance only was linked to the application of the activity-based costing system. The activity-based costing system provides focal information that helps determine the profitability of customers and products and thus helps increase values for shareholders through the role of this information in rationalizing the operational and strategic decisions of business establishments and directing investments to activities that add value, and that through the information provided by the system, financial and non-financial measures are prepared (Amin and Nengzih 2021).

#### *Cost Reduction Concept*

Cost reduction is defined as obtaining benefits (outputs) more significant than the same resources (inputs) or obtaining the same results by less than inputs. Further, has been described as the transition from the current level of costs to a lower level of costs. That requires taking measures that lead to a change in operating conditions so that the facility can produce the same product at a lower cost (Qesado and Silva 2021). However, achieving cost reduction objectives the optimal economic use of the resources available to the facility reduces the areas of waste and misused. Therefore, the cost is directed to those necessary activities that achieve value for the product and then reduce the cost, which leads to achieving customer satisfaction by providing the product with quality and distinctive specifications at the lowest possible price compared to competitors prices (Niñerola et al. 2021).

#### *The Concept of Service*

The service is the activities or benefits are offered for sales provided in connection with the sold goods (Nandru et al. 2021). The service is also defined as the performance of an activity directed to satisfy the needs of the beneficiaries. However, the banking service does not depart from the concept of service in general. Moreover, banking service is defined as: “anything that can be presented to the market to meet the need for consumption and use or to benefit from it, and this includes material things (tangible products or goods), services and ideas. Furthermore, the banking

service is the financial activities and operations of customers related to the value and providers of banking services (Alhanatleh 2021).

Making (2020) addressed many of the advantages and issues of the time-wave activity-based costing system. However, it suffers from inherent weaknesses in it, regardless of whether the facility uses standard costs or actual costs, the problem of time measurement remains the big dilemma that needs to be solved, and to achieve the goal of the study, it relied on the case study methodology, which it was conducted on a European company between 2004 and 2008, depending on direct observation and conducting personal interviews, and the study reached the following results: Relying on advanced computer-based methods leads to calculating the time of performing various tasks, and allows access to more accurate results and thus access for more accurate cost and profit information.

Quesado and Silva (2021) addressed applying the activity-based costing system to time in one of the outpatient clinics in Belgium then provided evidence of the existing benefits from the application of system. The basis of medical facilities constantly aims to offer distinguished services to my patients at the lowest cost level, and in light of those pressures. Costing the director of medical facilities seeks to understand the causes of reasonable cost. To achieve the study's goal, the researchers conducted a case study showing how to implement the costing system based on time-wave activity in an outpatient clinic. The study reached the following results: Activity-based time-based costing information has helped both health unit managers and department heads in improving organizational processes.

Similarly, the study tried to solve the problems that faced the costing system based on time-oriented activity, which was referred to the study in the difficulty of explaining the unutilized energy due to the uncertainty surrounding the unutilized power. Further, the adoption of this method on the assumption of applying 80% of the theoretical point. In this regard, the study suggested that it is possible to benefit from the statistical approach known as the fuzzy number (optimism - moderation - pessimism) in estimating the energy and the amount of usable energy needed to complete the activity. To address some problems resulting from uncertainty or the uncertainty associated with determining the production rate. The study reached the following results: Conducting a set of the most accurate estimates of the usable energy and the time required to perform each activity, which leads to having good repercussions on the development of administrative decisions and thus avoiding harmful deviations (Flayyih et al. 2020; Larbi 2021).

As per Al-Amaedeh and Odeh (2020) discussed to demonstrate the extent of use the time-oriented activity costing system and the resource consumption accounting system as one of the newly developed systems in the field of management accounting and as a natural extension of the application of the activity-based costing system in measuring and reporting on unused energy, as the report on energy costs helps in particular Unused energy in expressing the extent of consumption of the power.

The study transferred several results of costing system the most important are the following: The time-based activity costing system is an application of the idea separating the costs of available resources and the costs of consumed resources, as it depends on a logical grouping of the resources used to implement the activities

required to produce goods and services. The costing system based on time-wave activity can analyse energy utilisation during the operations of business facilities, where the energy used is calculated through time equations (Mirmohammadi et al. 2020; Karam 2019).

Furthermore, a study dealt with issue integration between the activity-based costing system and value chain analysis as a tool to reduce the costs of the banking sector in support of its competitiveness. Moreover, global crises create these costs, which leads to not accurately calculating the cost of services provided to customers, which results in the bank not helping to reduce the cost. The study reached several results, including The costs of banking services offered to customers. The study recommended the need to take advantage of each of the two cost systems based on activity and value chain to reduce banking costs, primarily as they are described as high in support of competitive advantage (Allawi et al. 2020).

Based on the above discussions and literature, the researcher formulate the investigation hypotheses as follows:

H<sub>1</sub>: There is a statistically significant effectiveness with the application of the dimensions of the balanced scorecard and the reduction of banking services costs in the Agricultural Bank of Iraq.

H<sub>2</sub>: There is a statistically significant effectiveness with the application of the costing system based on activities and the reduction of banking services costs.

H<sub>3</sub>: There is a statistically significant effectiveness in the integration between the balanced scorecard and costs systems in reducing the cost of banking services.

### 3 Research Methods

To achieve the study objectives, the researcher relied on the quantitative approach to track previous studies. The deductive approach to determine the study's axes and formulate hypotheses, the inductive approach to test the validity of hypotheses, and the descriptive analytical approach in the field study and analysis of its results using the case study method. Where the limits of the research were: the time limits are in 2021, and the spatial boundaries were the Republic of Iraq - the Cooperative Agricultural Bank of Iraq. The current research questionnaire was divided into four main axes and consists of demographic factors with (5) questions and perspectives of the balanced scorecard with (14) questions and the ingredients for the success of the cost system with (14) questions and the integration between the balanced scorecard and costs systems (14) questions.

#### 3.1 Study Field

The Agricultural Cooperative Bank of Iraq has become a comprehensive banking institution and one of the most remarkable pillars of the banking sector that actively



contributes to advancing agricultural development and the growth of GDP. The bank is wholly owned by the state and is a member of the bank deposit guarantee fund. Its capital implies a contribution between the Federal Ministry of Finance and the Iraqi Agricultural Cooperative Bank.

The Cooperative Agricultural Bank of Iraq is an Iraqi governmental bank established in Baghdad, concerned with giving loans to farmers to improve the agricultural situation in Iraq. It is the oldest Iraqi governmental bank, based in 1935 AD. In the year 1946, also in view of the growing needs of farmers, peasants and owners of commercial and industrial professions for loans and the increase in the size of the bank's finances and the multiplicity of its objectives, the government decided to establish an independent industrial bank that would undertake the tasks of financing industrial projects, with the Agricultural Bank concerned with financing the requirements of the agricultural sector (Bakr 2019). However, the bank has several branches in Baghdad, and the provinces, which numbered about 42 branches, and the number of offices exceeded about 40 offices.

### **Community and Sample**

The study relied on the Surveysystem.com website to determine the sample size, based on the margin of error (5%) and the confidence rate of (95%), a community of study consisted of 130 employees in the northern cities of Iraq, so the required sample size was (97) samples. In the quantitative approach, 100 samples were distributed according to the random sample method in three governorates, and the researcher has received 97 samples correctly which means 100% of the sample size was achieved. Descriptive statistical methods have been used in general to obtain general decisions about the characteristics and features of the composition and distribution of the research community (Karam 2020). Statistical methods used in the research: The following statistical methods were used in analysing the data of the field study: Mean: The arithmetic mean was used to reflect the average of the answers to the search terms where weight (5) was given for strongly agree, weight (4) for agree, weight (3) for neutral, weight (2) for disagree, and weight (1) for strongly disagree. While the standard deviation: Was used to measure the homogeneity of the answers of the studied units and to measure the relative importance of the questionnaire's axis statements. The T-test is one of the most significant statistical tests used in research and human and social studies. The t-test is usually used to detect the differences between the arithmetic means of two variables or between a variable and a previously calculated hypothesis of the arithmetic mean of the population. One of the most famous examples of using the t-test is to find the difference in the arithmetic averages of a given variable. Therefore, this test was used in the current study to examine the statistical significance of the study's hypotheses at a level of significance less than 5%.

## 4 Data Analysis and Results

Data analysis is one of the most important stages that the researcher goes through during scientific research. The researcher will reach the results nor be positive or negative that the researcher will rely on it. Data analysis defined as organizing and arranging data to be extracted and presented in the form of new information that answers the questions raised by the researcher during his scientific research. The stage of data analysis comes after the researcher has completed the data collection stage (Duan et al. 2021). Many reasons motivate the researcher to analyze the data that are related to and related to his scientific research, and the most prominent of these methods are interpretation and transformation of information into results: It depends on linking the facts identified through data analysis with indicators and the purpose of data analysis. It must be considered that the information obtained and collected turns into evidence to answer the questions posed (Karam and Kitana 2021).

### 4.1 *Reliability and Validity of Measurements*

Validity and reliability are concepts used to evaluate research quality. Validity and reliability refer to how well a method, technique, or test measures something. While reliability is about the consistency of the scale, reliability is about the scale's accuracy in quantitative research. Validity refers to how accurately a method measures what it aims to measure if the research is highly valid. It means that it produces outputs that correspond to actual characteristics, traits, and changes in the physical or social world (Karam and Kitana 2020).

Table 1, shows the study notes that the arithmetic mean of all statements statistics for( balanced scorecard perspective items) with the rate (3.3579), which showed the option of approval with a standard deviation ranging at a rate of (1.0530), and this means the average of all statements is (47.0103), thus, indicates the sample members agree with all the statements that measure the first variable of the study, with a standard deviation of (7.44353), that shows the concentration of values around their arithmetic mean. The Iraqi Agricultural Cooperative uses balanced scorecard perspectives to reduce banking services costs, and accordingly, we conclude that the hypothesis that states "The Agricultural Cooperative Bank of Iraq" applies the balanced scorecard perspectives to reduce banking services costs. It follows from the previous analysis that the stability coefficient (0.758) which enables during which the validity of the coefficient of validity was concluded as shown in Table 1, which shows the results of the analysis of honesty and stability of the variable from the

**Table 1** Balanced scorecard perspectives item statistics

No of Items (14)	Mean	Std. deviation	Cronbach's alpha
1. Management seeks to maximize shareholder wealth by achieving real returns on investment	4.2474	0.66192	0.751
2. Extent of applying the balanced scorecard to reduce banking services costs	3.2474	1.49326	0.752
3. The management seeks to increase sales of banking services by entering into new areas	3.4845	1.33941	0.758
4. The Bank achieves a continuous decrease in the indirect expenses incurred on the bank's activities	4.0412	0.73481	0.760
5. The measure of attracting new customers takes into account the achievement of the appropriate profitability goal	3.8866	0.86454	0.751
6. Providing banking services to customers at a level of quality and specifications that meet the needs of customers	4.2990	0.84366	0.766
7. The customer can determine the quality of the service he gets from the Bank	3.9485	0.91710	0.765
8. Banking services are provided to customers by studying the needs and desires of customers	3.8454	1.02409	0.750
9. The new banking service exceeds customers' expectations	2.6804	1.30341	0.723
10. Continuous improvement processes aim to reduce wastage of time	3.3299	1.01778	0.742
11. The bank studies deviations from the planned objectives to remedy the deficiencies	2.1959	1.09582	0.734
12. The bank is making continuous improvements in providing banking services to customers to ensure excellence in providing services and thus ensuring customer loyalty	2.2577	1.11129	0.721
13. The Agricultural Bank has a major role in the development of the agricultural sector in Iraq	2.3196	1.14151	0.723
14. The Bank contributes to generating job opportunities by reviving the economy	3.2268	1.19465	0.755
Total Sum of Reliability Statistics	47.0103	7.44353	0.758

perspective of the Balanced Scorecard, which was greater than the value of alpha (0.05), as indicated better results respectively in the Table 2 and 3.

### Descriptive Analysis for Study Samples

Table 4 descriptive analysis, it is noted that the percentage of males was higher than the percentage of females, respectively (56.7%–43.3%), and this indicates that there are not many differences between the employees of the Iraqi Agricultural Bank, and it is also noted that the majority of the research sample has ranged in age by 32% For the age group of (28–34 years), and the following is the age group (35–41).

**Table 2** Elements of a successful activity-based costing system Item statistics

No of Items (14)	Mean	Std. deviation	Cronbach's alpha
1. To what extent are the appropriate resources available by applying the activity-based costing system in the bank?	3.7423	1.08280	0.772
2. To what extent do you think the bank applies the incentives and rewards system in the activity-based costing system?	3.5155	1.15572	0.808
3. The bank has sufficient information on the importance of the activity-based costing system	3.4227	1.32943	0.800
4. The bank management believes that the expected benefits and returns from applying the activity-based costing system are greater than the costs of its application	4.3608	0.76629	0.788
5. The inability to direct the indirect costs charged towards their causes accurately, with their large number and percentage, requires the management of the bank to apply the cost system based on activities	4.2680	0.62108	0.800
6. There is a belief in the bank's management that the application of the activity-based costing system enables it to tighten control over the elements of costs	4.0103	1.02566	0.797
7. The mix of indirect costs constitutes a large proportion of the bank's cost structure	4.1031	0.88370	0.784
8. The availability of inaccurate cost data represents an obstacle for management in interpreting the profitability (loss) of its services	4.1959	0.79895	0.785
9. The inability of the cost structure used in traditional accounting activities to address the diversity of support activities	4.1340	0.87356	0.766
10. The bank's management believes that the traditional system distorts the calculation of single service cost charging rates, which calls for the application of the activity-based costing system	3.9691	1.04536	0.770
11. The bank's management has the scientific and practical qualifications that are expert in the accounting systems provided	3.9175	0.98605	0.774
12. The bank management believes that the activity-based costing system enables it to more accurately recalculate the cost of the banking service	3.1443	1.26647	0.772

(continued)

**Table 2** (continued)

No of Items (14)	Mean	Std. deviation	Cronbach's alpha
13. The management of the bank believes that the activity-based costing system enables it to divide the work performed	4.1856	0.90519	0.780
14. The increasing use of modern technology in the provision of banking services requires the application of an activity-based costing system	3.2165	1.31677	0.783
<b>Total Sum of Reliability Statistics</b>	<b>54.1856</b>	<b>7.52126</b>	<b>0.804</b>

The rate of 26.8%, in general, the age groups of the individuals of the research sample are significant. The Study also has found that most of the research sample is bachelor's holders, as their number reached (56) individuals or 57.7%. Then comes the diploma holders with 17.5%. In general, it can be said that the research sample is an educationally qualified sample.

It is noted that the majority of the research sample members who have experienced between (6–10) years got the largest percentage, as their number was (41) and by 42.3%, and they come in second place in terms of the largest percentage, the members of the research sample whose years of experience range between (11 and over) years, as their number reached (41) by 41.2%. It is noted that 45.5% of the study sample members specialize in accounting, 35.1% are financial auditors, and in general, most of the study sample specialized in accounting and financial matters. This is a good standard for the study sample.

*Regression Analysis*

It is clear from the previous table that the values of (R = 0.653) and the value of (R<sup>2</sup> = 0.427) at the level of significance (0.000) and as it is known statistically that the value of (R) is the strength of the correlation relationship between the dependent variable (reducing costs based on activities) and the independent variables (the balanced score and cost system) included in the model, while which measures the percentage of change in the dependent variable (R<sup>2</sup>) (reducing costs based on activities) as a result of the difference in the independent variable (the balanced scorecard and costing system), each with the level of significance it reflects, statistically, the closer the value the level of significance of (0.000) whenever this indicates the morality of the relationship, and based on the previous results, the following effects can be drawn: The relationship between the dependent variable and the independent variable is a direct relationship, as the correlation coefficient is (65.3%) and the percentage of change in the dependent variable because of the change in the independent variable, there is also a direct relationship, amounting to (42.7%), and this means that 42.7% of the differences occurred in reducing costs on the basis of activities by linking the balanced performance card and the cost system, and this percentage is considered Somewhat big. And by relying on the (F-Value) test to test the significance of the model as a whole, if the level of significance was less than (0.05), the model could be accepted and vice versa, based on the results of Table 5, where the value of (F =

**Table 3** Integration of the balanced scorecard system and costing Item statistics

	Mean	Std. deviation	Cronbach's alpha
1. The percentage of employees whose presence in the bank is an added value increase	3.2887	1.25796	0.882
2. The employee retention scale emphasizes the individual efficiency and effectiveness scale	3.9278	0.99213	0.878
3. Each employee submits a number of improvement proposals to the bank annually	3.8660	0.95338	0.880
4. The bank finances graduate training programs with the aim of providing practical training for graduates and qualifying them for the labour market	3.7526	1.22501	0.874
5. The bank avoids damaging the environment in which it operates	3.0103	1.30300	0.874
6. The Bank contributes to supporting orphan sponsorship organizations and charitable organizations that provide aid to poor Advisor	3.0000	1.17260	0.884
7. Detailed financial and non-financial information about activities helps in identifying trends in the development of banking services	3.5361	1.09983	0.876
8. The bank uses the activity-based costing system and the balanced scorecard in building performance measures	4.1134	0.88831	0.885
9. The integration between the two cost systems based on activities and the balanced scorecard shows the ability of modern management accounting methods to provide financial and non-financial information useful in identifying value-adding and non-value-adding activities so that they can be modified or cancelled, with the aim of reducing costs	3.0412	1.42827	0.884
10. Financial and non-financial information enables the bank's management to take key strategic decisions towards cost reduction	3.4330	1.03990	0.880
11. The financial and non-financial performance measures in controlling the costs of activities have positive effects on the cost of the service provided to customers	3.7526	0.85429	0.883

(continued)

**Table 3** (continued)

	Mean	Std. deviation	Cronbach's alpha
12. The financial and non-financial information produced by the cost systems and the balanced scorecard is of a high degree of detail and accuracy, which helps the Bank's management in achieving the goal of reducing the cost that it seeks	3.0825	1.21338	0.873
13. Continuous improvements are made to the bank's operations to reduce the cost of its services, which helps in the cost leadership strategy	2.9175	1.16073	0.873
14. To what extent is the integration of the Balanced Scorecard system and activity-based costs related to each other	4.0206	0.62881	0.895
Total Sum of Reliability Statistics	<b>48.7423</b>	<b>9.87450</b>	<b>0.883</b>

35.023) was at a level of significance ( $\text{Sig} = 0.000$ ). This confirms the significance of the model.

In Table 6, the ANOVA illustrates information about levels of variance within a linear regression model which is utilized for tests of coefficients significance. A one-way method between groups (balanced scorecard and costing system) was used to test two groups to see if there is a difference between them. Hence, indicate that acceptance of Balanced Scorecard and Costing System toward Reducing costs is statistically significant because the value of (F) is significant statistically ( $F = 35.023$ ) with the (P-value) is less than (5%) ( $P = 0.000$ ), which means that at least one of the predictor variables can be used to model balanced scorecard and costing system. The conclusion from the discussion above is that the more significant the discrepancy between the means of the balanced scorecard and the costing system, the greater the probability of the difference reducing costs in the Iraqi Agricultural Bank.

The coefficient of determination test was used to find out the influential independent variable. The (Table 7) shows the estimated linear regression model. As per the coefficients table, the highest coefficient indicated ( $B = 0.500$ ) for the costing system variable with the highest (t-statistic = 4.537), and the p-value is (0.000). In contrast, balanced scorecard has the lowest weight factor of ( $B = 0.284$ ). It shows that increasing the standard deviation in the costing system followed by increasing the standard deviation (50%) in reducing banking costs, provided. Therefore, this model can be used for an estimation objective. Looking at the coefficients of the independent variable, the slope sign of the regression line is positive, which indicates that there is a direct relationship between the dependent variable and the independent variable. Therefore, we conclude from the above table that the application of the balanced scorecard and the cost system has a direct and significant relationship with the dependent variable, reducing costs based on activities. This means applying a balanced scorecard with a costing system that contributes to reducing costs on the basis of banking activities: in reducing the cost of services.

**Table 4** Descriptive analysis

	Frequency	Percent	Valid percent	Cumulative percent
<b>Gender</b>				
Female	42	43.3	43.3	43.3
Male	55	56.7	56.7	100.0
Total	97	100.0	100.0	
<b>Age</b>				
21–27	23	23.7	23.7	23.7
28–34	31	32.0	32.0	55.7
35–41	26	26.8	26.8	82.5
42–48	13	13.4	13.4	95.9
48–54	4	4.1	4.1	100.0
Total	97	100.0	100.0	
<b>Level of education</b>				
Secondary Education	9	9.3	9.3	9.3
Diploma certificate	17	17.5	17.5	26.8
Bachelor degree	56	57.7	57.7	84.5
Master degree	9	9.3	9.3	93.8
Doctorate	6	6.2	6.2	100.0
Total	97	100.0	100.0	
<b>Years of experience</b>				
Up to 5 Years	16	16.5	16.5	16.5
6–10 Years	41	42.3	42.3	58.8
11 Years and Over	40	41.2	41.2	100.0
Total	97	100.0	100.0	
<b>Job title</b>				
Agricultural inspector	9	9.3	9.3	9.3
Financial Controller	10	10.3	10.3	19.6
Accountant	44	45.4	45.4	64.9
Financial auditor	34	35.1	35.1	100.0
Total	97	100.0	100.0	

**Table 5** Merging effectiveness of the balanced scorecard and costing system

Model	R	R square	Adjusted R square	Std. error of the estimate	R Square change	F change	df1	df2	Sig. F change
1	0.653 <sup>a</sup>	0.427	0.415	1.09260	0.427	35.023	2	94	0.000

a. Predictors: (Constant), Balanced Scorecard, Costing System



**Table 6** ANOVA<sup>a</sup>

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	83.619	2	41.810	35.023	0.000 <sup>b</sup>
	Residual	112.216	94	1.194		
	Total	195.835	96			

a. Dependent Variable: Reducing costs based on activities

b. Predictors: (Constant), Balanced scorecard , Costing system

**Table 7** Coefficients<sup>a</sup>

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Std. error	beta		
1	(Constant)	0.623	0.314		1.983	0.050
	balanced scorecard	0.284	0.109	0.262	2.602	0.011
	Costing system	0.500	0.110	0.456	4.537	0.000

a. Dependent variable: reducing costs based on activities

*Hypothesis Testing*

From Table 8, it is clear that the arithmetic mean of all hypothesis statements is equal to (3.09), and this means the value was greater than the hypothetical mean, which is (3). The calculated (t) value is equal to (2.26), which was greater than the tabular value (t), which is equal to (1.98)). At the same time, the significance level was equal to (0.000) for three hypotheses that were less than (0.05). This is sufficient evidence to confirm the validity of this hypothesis, which leads to acceptance.

**Table 8** One-sample test

Test Value = 0	t	df	Sig. (2-tailed)	Hypotheses	Mean difference	95% Confidence interval of the difference	
						Lower	Upper
H <sub>1</sub>	20.971	96	0.000	Accepted	3.04124	2.7534	3.3291
H <sub>2</sub>	22.754	96	0.000	Accepted	3.01031	2.7477	3.2729
H <sub>3</sub>	24.058	96	0.000	Accepted	3.21649	2.9511	3.4819

## 5 Discussion

Depending on the theoretical and field study, the study found the following results. The activity-based costing system reduces banking services costs to allocate and manage indirect costs translates. The form of costs measured energies and expressed in units of time consumed by the final cost purposes directly in the activities of multiple drivers whose role is limited to clarifying how and how much energies are consumed.

Further, the direct allocation is done based on two scales: the cost of energy resources and the rate of consumption of the cost object. Therefore, the balanced scorecard is an appropriate tool for measuring the current financial performance. Also, through financial measures of performance, and future financial performance, which was reflected through the performance results of other axes, whose measures are mainly based on internal operations customers, and development and growth. On the other hand, the operational flow of financial information from the activity-based costing system is an important database. Hence, that can be used in objectives of continuous development and improvement on products, which flow into the balanced scorecard system, whose results are reflected in improving performance results through an optimal investment of the organization's resources.

It is remarkable to apply activity-based costing systems to provide more accurate information, but the management of most banks is concerned about the difficulty of implementing a plan and the lack of experience on the part of employees to implement it. The field study revealed that there is a statistically significant relationship between the integration of customers' dimension, reducing the costs of activities, and evaluating performance, and that relationship helps in reducing costs of banking services without compromising quality by re-engineering operations as a result of analyzing activities and assess their performance, and the optimal and proper use of material and human resources to achieve customer satisfaction. The integration between the balanced scorecard and the activity-based costing helps a strong administrative system that increases the ability to plan and measure costs more accurately. However, this contributes to improving performance through cost management that allows management to improve quality and then customer satisfaction and revitalization of the economic cycle.

In conclusion, it is necessary to devote more research efforts to monitor the reality of practice in Iraqi banks to provide better values on how the bank's environment variables affect the adoption and application of activity-based costing systems due to the comparative advantage presented as one of the strategic management accounting tools for banks operating in developing economies such as the Iraqi economy. The researcher also suggests that some research efforts focus on the effect of different systems costs on operational and financial performance. There is a shred of empirical evidence for banks on the application of modern systems that helps reduce costs and increase benefits.

## Recommendations

Based on the results of the study, the researchers recommend the following: Using activity-based costing to improve agricultural banks' understanding of service costs to classify costs better.

The management of Iraqi agricultural banks should establish a sub-management for costs and take advantage of its cadres of cost accountants who occupy other jobs to implement the costing system based on activity.

The management of banks seeks to implement the balanced scorecard system as an integrated system for strategic management means to rationalise decisions, direct employees' behaviour, and evaluate performance.

It is necessary to work a bridge between the knowledge gap and what is included in scientific, academic research for cost management methods. Also, to what is applied in practice through organisations working to develop and develop the scientific-practical capabilities of the cost accountant by enrolling them in training programs and courses to find out the developments in the methods and tools of managerial accounting and accounting costs. Agricultural banks must prepare specialised training courses on the topic of modern systems, represented in the balanced scorecard system and the activity-based costing system, to train employees on how to apply them effectively, indicating the advantages that the Bank achieves from that.

## References

- Abernethy, M.A., Lillis, A.M., Brownell, P., Carter, P.: Product diversity and costing system design choice: field study evidence. *Manage. Account. Res.* **12**(3), 261–279 (2001)
- Ahora, J.Y., Agbloyor, E.K., Kuipo, R.: Bank finance and export activities of small and medium enterprises. *Rev. Develop. Finan.* **4**(2), 97–103 (2014)
- Acree, M.C.: Bayesian theories of probability and statistical inference. In: *The Myth of Statistical Inference*, pp. 237–280. Springer, Cham (2021). [https://doi.org/10.1007/978-3-030-73257-8\\_8](https://doi.org/10.1007/978-3-030-73257-8_8)
- Al-Amaedeh, D., Odeh, Z.: Availability of TDABC costing system in jordanian public joint stock companies and its role in cost reduction. *Int. J. Manage.* **11**(8), 192–198 (2020)
- Al-Dhubaibi, A.: Optimizing the value of activity based costing system: the role of successful implementation. *Manage. Sci. Lett.* **11**(1), 179–186 (2021)
- Alhanatleh, H.M.: The effect of electronic banking services usage on clients electronic loyalty. *Int. J. Hum. Capital Urban Manage.* **6**(4), 461–476 (2021)
- Allawi, K.M., Mijbil, S.H., Hussein, B.M.: The extent of using managerial accounting innovations in the government sector in Iraq. *Periodicals Eng. Natl. Sci. (PEN)* **8**(4), 2417–2423 (2020)
- Amin, M.N., Nengzih, N.: Proposed application of the use of Activity-Based Budgeting (ABB) method for cost control of daily and casual workers (A case study at PT XYZ). *Saudi J. Econ. Fin.* **5**(9), 411–420 (2021)
- Bakr, Y.T.: Evaluation of the performance of the agricultural bank of Iraq cooperative through the efficiency of the collection of loans (1995–1995). *Tikrit J. Adm. Econ. Sci.* **3**(43), 217 (2019)
- Benková, E., Gallo, P., Balogová, B., Nemeč, J.: Factors affecting the use of balanced scorecard in measuring company performance. *Sustainability* **12**(3), 1178 (2020)
- Bura, M.T., Anggraeni, F.L.: The effect of applying balanced scorecards environmental performance. *Pol. J. Manage. Stud.* **21**, 22–33 (2020)
- Carenys, J., Sales, X.: Costing the banking services: a management accounting approach. *J. Money, Investment Bank.* **6**(1), 8–9 (2008)

- Duan, Y., Ji, T., Lu, Y., Wang, S.: Environmental regulations and international trade: a quantitative economic analysis of world pollution emissions. *J. Public Econ.* **203**, 104521 (2021)
- Duran, O., Afonso, P.S.L.P.: An activity based costing decision model for life cycle economic assessment in spare parts logistic management. *Int. J. Prod. Econ.* **222**, 107499 (2020)
- Fatima, T., Elbanna, S.: Balanced scorecard in the hospitality and tourism industry: past, present and future. *Int. J. Hospitality Manage.* **91**, 102656 (2020)
- Firk, S., Hennig, J.C., Wolff, M.: Can the balanced scorecard help in designing conference calls? The effect of balanced information composition on the cost of capital. *Eur. Acc. Rev.* **29**(1), 115–146 (2020)
- Flayyih, H.H., Mohammed, Y.N., Talab, H.R., Radhi, N.R.: Integration of the system of activity based costing and liability accounting. *Integration* **1**(2), 1–9 (2020)
- Jourdaïne, M., Loubet, P., Sonnemann, G., Trébucq, S.: The ABC-LCA method for the integration of activity-based costing and life cycle assessment. *Bus. Strateg. Environ.* **30**(4), 1735–1750 (2021)
- Karam, A.A.: The impact of training and development on different cultural employees performance through interaction employees motivation in Erbil public and private Banks. *Mediterr. J. Soc. Sci.* **10**(1), 193–206 (2019)
- Karam, A.A.: The brand impact on culture: case of coca cola cultural issues in India. In: *International Conference on Business and Technology*, pp. 551–570. Springer, Cham, November 2020 [https://doi.org/10.1007/978-3-030-69221-6\\_42](https://doi.org/10.1007/978-3-030-69221-6_42)
- Karam, A.A., Kitana, A.F.: The impact of social media on human resource management scope activities in Al-Futtaim and Al-Etihad group UAE. *Int. Bus. Res.* **11**(12), 145–156 (2018)
- Karam, A.A., Kitana, A.F.: An exploratory study to identify the impact of leadership styles on achieving institutional excellence in the public sector: united arab emirates. *Int. J. Bus. Manage.* **15**(6), 16–30 (2020)
- Karam, A.A., Kitana, A.F.: Using PLS-SEM approach to estimate corporate social responsibility and precautionary measures of Covid-19: effects on employees commitment. *Arab J. Adm.* **41** (2021)
- Larbi, G.M.: Activity Based-Costing system through three generation: ABC-TDABC-PFABC. *La Rev. Des Sci. Commerciales* **20**(1), 90–108 (2021)
- Making, I.R.I.D.: Activity based costing system and its role in decision making. A case study of cement companies in kurdistan region of iraq. *Int. J. Psychosoc. Rehabil.* **24**(06), 5915–5929 (2020)
- Mamabolo, A., Myres, K.: Performance measurement in emerging market social enterprises using a balanced scorecard. *J. Soc. Entrepreneurship* **11**(1), 65–87 (2020)
- Mikula, B., Vajdová, I., Koščák, P., Jenčová, E.: Learning and growth perspective in balanced scorecard. In: *2020 New Trends in Aviation Development (NTAD)*, pp. 174–178. IEEE, September 2020
- Mirmohammadi Sadrabadi, M., Bahonar, Z., Shakerian, H.: Time-based costing in healthcare: A systematic review of research. *J. Develop. Evol. Manage.* **1398**, 471–482 (2020)
- Nandru, P., Rentala, S., Suresh, V.: Demographic discriminators in the adoption of banking services: evidence from the primitive tribal households. In: S., A., Singh, D. (eds.) *Financial Inclusion in Emerging Markets*, pp. 3–25. Springer, Singapore (2021). [https://doi.org/10.1007/978-981-16-2652-4\\_1](https://doi.org/10.1007/978-981-16-2652-4_1)
- Niñerola, A., Hernández-Lara, A.B., Sánchez-Rebull, M.V.: Improving healthcare performance through Activity-Based Costing and time-driven activity-based costing. *Int. J. Health Plan. Manage.* **36**(6), 2079–2093 (2021)
- Nota, G., Matonti, G., Bisogno, M., Nastasia, S.: The contribution of cyber-physical production systems to activity-based costing in manufacturing an interventionist research approach. *Int. J. Eng. Bus. Manage.* **12**, 1847979020962301 (2020)
- Öker, F., Özyapici, H.: A new costing model in hospital management: time-driven activity-based costing system. *Health Prog.* **32**(1), 23–36 (2013)
- Quesado, P., Silva, R.: Activity-Based Costing (ABC) and its implication for open innovation. *J. Open Innov. Technol. Mark. Complexity* **7**(1), 41 (2021)

- Safeiee, F.L.M., Saad, S.K.M., Abu, M.Y.: A case study on the application of activity-based costing on the inductor component. *J. Teknik Ind.* **10**(3), 248–254 (2020)
- Sleimi, M.T., Karam, A.A., Qubbaj, I.S.: The impact of e-banking services quality on customers satisfaction moderated by customer trust: survey on Arab Bank in Amman, Jordan (2018)
- Tuan, T.T.: The impact of balanced scorecard on performance: The case of Vietnamese commercial banks. *J. Asian Finan. Econ. Bus.* **7**(1), 71–79 (2020)
- Turshan, M.N., Karim, N.A., Ramallah, P.: The effect of adopting Balanced Scorecard (BSC) as strategic planning tool on financial performance of banks operating in palestine. *Asian Soc. Sci.* **16**(1), 95–108 (2020)
- Zaini, S.N.A.M., Zheng, C.W., Abu, M.Y.: Costing structure improvement using activity based costing in palm oil plantation of Malaysia. *J. Mod. Manuf. Syst. Technol.* **4**(1), 95–109 (2020)
- Zamrud, N.F., Abu, M.Y.: Comparative study: activity based costing and time driven activity based costing in electronic industry. *J. Mod. Manuf. Syst. Technol.* **4**(1), 68–81 (2020)

# Principal-Agent or Patron-Client? The Unspoken Concord of Indonesia's Two-Tier Corporate Governance



Novita Ikasari , Umanto , and Ika Sri Hartantiningsih

**Abstract** Corporate governance (CG) in the banking sector is deemed as one of the most structured and regulated. When it applies to regional development banks, the regional dynamics contribute to the quality of corporate governance. Using Indonesia as a case in point, this paper aims at analyzing corporate governance practices based on dynamics amongst actors in regional development banks. Using agency and patron-client theory, the underlying dynamics amongst different actors representing the two-tier system applied by Indonesia are presented and elaborated. The study applies a qualitative approach. Data are collected using in-depth interviews with representatives from the board of directors and board of commissioners of selected regional development banks as well as regulatory agencies in Indonesia. This study proposes the application of the patron-client approach to understand the interactions amongst controlling shareholders, the board of commissioners, and the board of directors. In conclusion, a model of dynamic interactions amongst the actors is proposed based on two case studies constructed from a series of interviews to elaborate the dynamics.

**Keywords** Corporate governance · Regional development banks · Patron-client

---

N. Ikasari (✉)

Center for Governance, Public Policy and Business Studies, Faculty of Administrative Science, Universitas Indonesia, Depok, Indonesia  
e-mail: [novita.ikasari29@ui.ac.id](mailto:novita.ikasari29@ui.ac.id)

Umanto

Department of Business Administration, Faculty of Administrative Science, Universitas Indonesia, Depok, Indonesia  
e-mail: [umanto@ui.ac.id](mailto:umanto@ui.ac.id)

I. S. Hartantiningsih

Talk Asia, Ciputat Raya 16, Jakarta, Indonesia

# 1 Introduction and Related Works

Agency theory has been the crux of various issues in the business setting, in which it has successfully justified practices, and provided the groundwork to design corporate policy. The theory was coined by Ross (1973) and Mitnick (1973), with the first discussing the theory from an economic perspective and the latter from the institutional perspective that gave social breadth to the theory. The subsequent work of Jensen and Meckling (1976) morphs the agency theory into arguably the most well-known application in fields of finance, management, and accounting. The asymmetrical interests between that of principal (the shareholders) and agent (the management) have not only resulted in business inefficiency but also the latency of moral hazard and opportunistic behavior, which more than often invite ethical issues.

Rooted in the field of business ethics, corporate governance refers to a set of norms, structures, processes, and policies that guide and control business practices. Scholars have provided a more specific construct (Berle and Means 1932; Donaldson 1990; Porta et al. 2000) with references to board of directors, shareholders, managers, ownership, and control. The system is designed to overcome the challenges posed by agency problems through a clear and accountable mechanism for interactions amongst all relevant actors in a business setting. Studies about corporate governance have been well-documented either as a case study (Anginer et al. 2018; Paniagua et al. 2018; Alabdullah et al. 2019; Hamdan et al. 2017) or a literature review (Khan 2011; Milosevic et al. 2015) during the last decade. The development of the concept is matured with corporate governance studies that are primarily focused on the influence of ownership structure and its related norms on corporations' financial performance.

Whilst the mainstream studies are performed on listed companies (Ducassy and Guyot 2017; Alanazi 2019; Ciftci et al. 2019; Pandya and Deventer 2021; Alareeni 2018), corporate governance studies on state-owned enterprises (SOEs) are available in a limited number. Within the last 10 years, the documented studies discussed the conventional ownership-firm performance relationship (Grossi et al. 2015; Sari and Tjia 2017; Herdjiono 2019; Yaacob and Basiuni 2014; Alareeni 2018a) and the issue of control mechanism (Yaacob and Basiuni 2014), with only a handful that offered insights towards a fine-tuned model (Khongmalai et al. 2010; Chen 2016). The distinct feature of SOEs' ownership structure—partly or fully owned by the state—has led to a hybrid purpose of their operations whereby developmental trajectory must be aligned with the business. In other words, SOEs have to perform their public service obligations while maximizing their profit-making capacity at the same time (Hasan Al-Naser 2019). In this context, the question remains whether the hybrid organizational purpose strengthens or dilutes agency problems in SOEs? Thus, this study aims at mapping the dynamics and interactions in the two-tier system between the controlling shareholders and board of directors to provide insights into the previous question. Using regional development banks (RDBs) in Indonesia as a case in point, we propose a patron-client approach to better understand the underlying relationship between these actors by way of two case studies. The remaining of this paper is organized as follows: the corporate governance system applied in Indonesia

is described in Sect. 2, while Sect. 3 contains a succinct description of Indonesian SOEs in general and RBDs in particular. Section 4 provides the research methodology applied in this study, followed by discussions and findings. Section 6 concludes the study and provides future research direction.

## 2 Corporate Governance (CG) System in Indonesia

Corporate governance relates to the management of shared authority and control to achieve the company's goal, which is value creation for all stakeholders (Monks and Minow 2011). In addition, (Shleifer and Vishny 1997) positions corporate governance as a mechanism to ensure the shareholders receive return proportionally to their investments. Both perspectives rightfully placed corporate governance in the context of shared values, responsibility, and shared goals amongst all stakeholders. Consistently, (Lukviarman 2004) emphasizes the "right things" on doing the right things right at the center of corporate governance practices.

The corporate governance system affects the preferred model for a country (Shaw 2003). A scholar (Weimer and Pape 1999) categorizes a governance system into two streams, namely, market-oriented and network-oriented. Another scholar (Schmidt and Tyrell 1997) proposes another categorization, i.e., a market-dominated system and a bank-dominated system. The difference between these two remains on the efficacy of the control mechanism applied by a country (Lukviarman 2005).

Anglo-Saxon countries, for example, have developed a model based on their common law tradition and have implemented a market model. On the other hand, European continental countries have pushed forward a bank-dominated model based on their civil law tradition (Weimer and Pape 1999). On one side, countries such as the United States of America, the United Kingdom, Australia, Canada, and commonwealth countries have applied a one-tier model (executive and non-executive) on their board system governance (Weimer and Pape 1999). In this model, executive and supervisory functions are embodied as one whereby the board is authorized to appoint, dismiss and decide on compensation for top executive management (Fama and Jensen 1983). On the other side, countries such as Japan, follow the civil law tradition and practice a two-tier board in their board governance structure. The two-tier board separate executive and supervisory function into own board, they are board of directors for executive and board of commissioners for supervisory roles. Here exists a clear distinction between the two functions.

In Indonesia, there are three critical elements in firm governance as per Law Number 40 the Year 2007 on Corporations. These elements are the annual general meeting, of shareholders, board of directors, and board of commissioners. Thus, it is clear that Indonesia follows a two-tier governance system.



### 3 Regional Development Banks: Indonesia Case

State-owned enterprises (SOEs), and by extension regional-owned enterprises (ROEs), are a manifestation of state intervention in the market. It is unavoidable, notwithstanding the agreement on what an “intervention” embodies. In Indonesia, the growth of SOEs for 10 years has shown a decrease of 19.86% from 141 in 2010 to 113 SOEs in 2019. The fall in numbers can be attributed to the streamline of subsidiary companies within the holding company of SOEs. On the other hand, ROEs show growth of 15.21% from 710 to 818 within the same period. The increase arises from the growing need for a revenue-generating capability to support their regional development since the central government has transferred more and more authority to regions. Based on Table 1, on average there are 66.59% of the operating ROEs are generating profit, while the other 33.41% are incurring losses. Given the purpose of their establishment, this warrants concern on their governance practices and business efficacy.

Of the ROEs, regional development banks (RDBs) are by far holding the most significant role. RDBs are an integral part of a regional administration with a specific task to finance both profitable and development (i.e., less profitable) projects as outlined in the middle-term regional plan of the respective region. Essentially, RDBs are required to perform financial intermediary and social development agent roles. As such, there are 27 RDBs with different forms of ownership structure, namely 22 RDBs are limited liability companies, three RDBs are publicly listed corporations and two RDBs are Syariah-based publicly listed corporations. The four RDBs that are used in the study are all limited liability companies.

In terms of financial performance, RDBs have shown a unique telling of how their hybrid ownership and functions contributed (Fig. 1). The declining ROE and relatively stagnant ROA of below 5% over time depict the gradual inefficiency of

**Table 1** SOEs and ROEs in Indonesia (2010–2019)

Year	SOEs	ROEs	Profitable ROEs	ROEs	Not Profitable ROEs
2010	141	710	444		266
2011	142	723	468		255
2012	141	708	484		224
2013	142	747	498		249
2014	141	778	508		269
2015	119	791	518		273
2016	118	782	549		233
2017	115	818	556		262
2018	114	825	555		270
2019	113	818	550		268

Source: Annual Report, The Ministry of State-Owned Enterprises

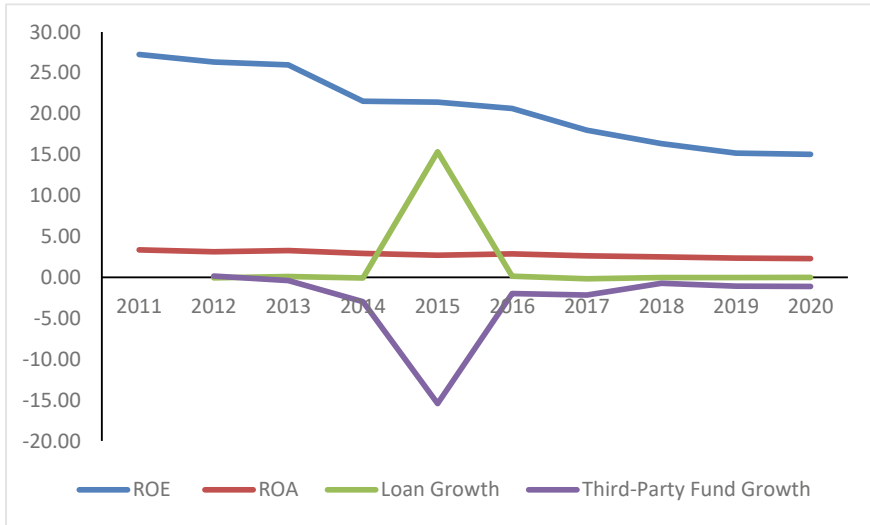


Fig. 1 Financial performance of RDBs (the year 2011 to 2020)

RDBs’ capability to generate profits and, eventually, provide dividends to shareholders. Particularly in 2014 to 2016, the spikes in the opposite direction for loan growth and third-party deposit growth were an effect caused by a new vision for RDBs as mandated by the Financial Service Authority (FSA). Due to their status as financial institutions, RDBs have to adhere to two regulatory bodies, namely the FSA and the Ministry of Home Affairs. In 2010, the FSA launched a new paradigm for RDBs titled “Regional Champion”. Within this new concept, RDBs is envisioned to be the pillar of regional economic development through a resilient institutional capacity with an ability to raise external funds, to practice strategic loan placements, and to have a high-quality human resource to support the government’s efforts in financial inclusion. The first phase of the implementation, from 2010 to 2014, showed a common struggle across RDBs with both almost zero loan growth and negative capacity for fund accumulation other than that is allotted by regional budget. In the next phase, which is from 2014 to 2016, RDBs were entangled in aggressive loan disbursement to achieve a minimum loan growth of 20% per year, a targeted credit channeling to meet a minimum of yearly 40% productive loans over total loan portfolio requirement and a maximum of 5% net interest margin. Figure 1 does not show the positive light of RDBs’ competitiveness, which is the ultimate goal of the new vision. RDBs remain dependent on their internal capital, in turn generating higher interest for higher dividends for their shareholders.

On the institutional side, RDBs accumulate notorious headlines through various ethical misconducts and bad practices of corporate governance (CG). Being in the most heavily regulated industry, RDBs are obligated to adhere to the prevailing laws and regulations set by FSA. Nevertheless, RDBs often face a dilemma when laws and regulations are not in line between FSA and the Ministry of Home Affairs, the

latter being the regulatory body responsible for all SOEs and ROEs. Examples of ethical misconduct include corruptive behavior (with several of RDBs' CEOs being sanctioned to the penitentiary for corruptions) and theft (security breach), whilst bad CG practices include unscrupulous dismissal of member(s) of the board of directors and board of commissioners.

The ongoing misconducts warrant a closer examination of the CG practices, and by extension, CG's assessment instrument. RDB's report on their CG practices as outlined in their annual report, which is mandated by law. The statements, disclosures, and information on the practices are based on the assessment criteria set by government law. The best practice in Indonesia is to integrate a CG score above 90% into the CEO or Board of Directors' key performance indicator. The assessment criteria are a checklist of six aspects, 43 indicators, and 153 parameters (Republik Indonesia 2012). The assessment criteria are complicated and very detailed notwithstanding the categorical nature of the checklist. Each year, a national independent body presents a CG award to SOEs and ROEs that is also considered a prestige award. Interestingly, it is often found that awardees in one year, notoriously become a headline in the next -or subsequent – year. This implies unsustainable CG practices or inadequate CG assessment criteria.

With the mandate as Regional Champion, RDBs are expected to build their competitiveness and be par with other financial institutions, especially the national banks, including in quality of the CG practice. On the other hand, with a noble purpose to help build healthy and ethical companies, some of the CG provisions were seemed to be challenging to be applied to enforce compliance and maintain the company's performance. However, multiple regulators imposed excessive regulations made the company needs to allocate notable efforts to enforce its compliance.

Our preliminary study identifies five actors whose roles are vital to corporate governance practice in RDBs, including two that are not in the CG structure. First is the Board of Commissioner whose task is to monitor and assess business practices following good corporate governance. The second is the Board of Directors whose task is to perform business practices following CG principles. The third is the Head of local government whose also holds the position of the controlling shareholders of RDBs. Fourth is the Financial Service Authority that is the regulatory body responsible for monitoring the performance and governance of all financial institutions. Finally, fifth is the Regional Parliament or what this study termed as a "shadow authority", which ventures indirectly impacted CG practice within RDBs. FSA and regional parliament are two institutions outside the formal CG structure. The head of local government is the principal in the agency theory, whilst the board of directors is the agent. The qualitative analysis of their interactions highlights how CG practice at RDBs is driven by the different interests of these actors and the dynamics amongst them.

## 4 Methodology

This study applies a qualitative approach. Agency theory was the underlying concept that was used at the beginning of the study until the development of the guided questions. Data collection was performed by a series of in-depth interviews with the following resource persons representing the shareholders (independent commissioners) and board of directors of four selected RDBs, regulatory agency (Financial Service Authority, FSA), the association of RDBs, and the relevant unit under the Ministry of Home Affairs. Due to their heavy regulations, this study assumes a standardized formal practice and corporate governance across RDBs, thus the selection of four sites is based on two grounds. First, they are representative of western and central/eastern parts of Indonesia, which would address the issue of social disparity in terms of population density, infrastructure maturity, and value heterogeneity. Second, they are representative of government transition, i.e., these regions have just passed the local election, which would address the issue of principal-agent in question. The five regions are the capital city Jakarta, South Kalimantan, North Sumatra, South Sulawesi, and East Nusa Tenggara.

The 15 interviews were completed in a course of one year, from August 14, 2018, to August 16, 2019. Each interview was recorded (preceded by verbal consent) and transcribed. All informants' names are kept confidential due to their delicate perceived political nuance surrounding their professional positions within the banks. The non-bank informants are not treated in the same manner by their own accord. Interviews and transcripts are kept in their original language (Bahasa), whereas a translation is provided in this paper for readability and understandability purposes. The data analysis was performed manually since the data is sufficiently small. A descriptive (open) coding process was applied to each transcript to generate categories and then finally themes from the data (Saldana 2011). Iterative processes show the shift of paradigm from agency theory at the beginning of the study to a patron-client as the study progresses. The presentation of data analysis in the next section benefits from the construction of two cases based on the interviews and cases that are published in the media.

## 5 Discussions and Findings

In this section, we begin with a brief highlight of agency theory and the patron-client concept. Then, two case studies are presented to illustrate the parallelism with agency theory and/or patron-client.

### ***5.1 Agency Theory and Patron-Client***

As previously mentioned, agency theory is rooted in two branches of perspective, i.e., economic and institutional. In this study, agency theory is based on the institutional approach as proposed in seminal works by Mitnick (1973; 2013; 2021) with more attention given to the process rather than the output. Though both acknowledge the presence of a moral hazard and opportunistic behaviors, the institutional approach takes into account the dynamics and relational interactions amongst the involved actors, the motivations behind a decision, and the contribution of values in the dynamic. Thus, the issue between a principal and an agent is deeper and wider than conflicting interests that are presented in monetary values.

The patron-client approach is a well-known concept in political science. Existed since in the ancient time of the Roman period, the interdependency between a patron and a client is well understood as a mutualistic symbiotic relationship where each party benefits from their relationships. Where agency theory offers an equal standing – or power – between a principal and an agent, a patron and their client do not have equal power. The mark of a patron-client approach is the apparent class structure where the patron belongs to the higher class, thus power structure is the constant variable in the relationships. Applying the concept to the context where RDBs operate instigates the question of whether an exchange of economic benefits exists in the dynamics amongst the actors or a different construct of benefits plays a role?

### ***5.2 Case Study 1: Successions of Board of Directors***

Based on the CG assessment criteria, indicators for the Board of Commissioners (BOC) and Board of Directors (BOD) are weighed equally at 35% that constitutes 70% of the total assessment criteria. This reflects the two-tier governance system and the critical role both play in controlling and evaluating business operations. BOC is mandated to give expert opinions and inputs to BOD on RDBs' policy, including those that are directed at risk mitigation efforts, though they do not have a decisive authority on the implementation of their opinions and inputs. BOD assumes the strategic role of planning organizational targets and goals as well as carrying them out within the framework of good corporate governance. The CG assessment criteria allocate a mere 9% of the weight to the controlling shareholders, which are the regional head, a Governor, or a Mayor (hereafter a Governor is used for simplicity). Governors/General Shareholders Meeting are authorized to appoint and discontinue an appointment of members of BOC and BOD of RDBs. Other than that, the general responsibility of the Governor is to set RDBs' direction and policy to achieve their goals and to ensure regional developments are achieved. In this sense, Governors attain monitoring functions, particularly, on the actions of BOD.

Using the agency theory, the Governor resumes the position of the Principal and the BOD is the Agent. The lack of an authoritative role has positioned BOC as a quasi-Principal with a role considered as an appendage to the principal. From the interviews, it becomes clear that the appointment of BOC by the Governor is heavily influenced by economic interests rather than subject-matter knowledge or expertise. The appointees are sourced from a pool of retired local high-ranking officials who are expected to push the Governor's interests to BOD. With the only exception of Bank DKI during Basuki Tjahja Purnama's administration, Governors have worked the BOC to drive RDBs' profit-making ability to ensure shareholders' wealth is guaranteed. The balance between economic and development goals is skewed towards the first. This creates ex-ante and ex-post opportunism in the nomination and succession process of BOC and BOD by the Governor. Interestingly, the arguments for a targeted BOC and BOD as provided by informants are rooted in local values such as the need to maintain a harmonious working relationship. One characteristic of maintaining harmonious working relationships is to tailor information to one's purpose or what is considered by one group as a common goal. The reliance on the process can be attributed to Mitnick (2013), however, the pressure to have a continuous growth of dividend marks the influence of Ross (1973).

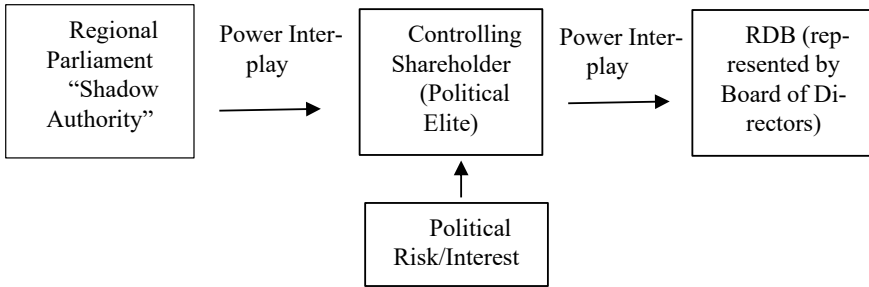
One phenomenon in RDBs that needs further explanation than the agency theory is the (almost) instant "overhaul" of BOC and BOD once a new administration is in the office. The patron-client approach is based on the political sphere. Here we identify the Governor's other "hat", namely their identity as a political elite. As such, they are biased especially to their party's interests both in monetary and non-monetary forms. To fulfill the interests of their backing, Governors are driven to instill their (and their political party) goals to RDB. The right appointment of BOC would endorse the smooth communication about these goals, whereas the right personnel in BOD is to ensure total obedience to the goal set by Governors. During the local election period in 2018 and 2020 across Indonesia, the change of guard in the governor's office is followed by an overhaul of RDBs' BOD. The underlying interest is to satisfy campaign promises to their constituents. Programs that are not profitable but highly populist are pushed through. Bank DKI Jakarta, Bank East Nusa Tenggara, Bank South Kalimantan, and Bank South Sulawesi all confirm these practices. Examples of such programs are (1) the 'zero down-payment housing', (2) channeling of funds under the corporate social responsibility tag for infrastructure projects, (3) financing for unproven small businesses with aims to reduce migrant workers, and (4) loose discretion of loan applications, which based on subjectivity and personal closeness. Essentially, opportunistic behavior exists in cases where the patron-client approach is used. The difference is, these behaviors led to misconduct and bad corporate governance with a more severe impact on the business.

### 5.3 Case Study 2: Purposeful Intervention

Interventions by the controlling shareholders can be found in any type of business organization. The series of interviews reveal how interventions are done under the pretense of social progress and development programs. The financing for unproven small businesses, for example, is to overcome the increasing number of migrant workers in the regions. Young people in this particular region have moved to other provinces and other countries to work. According to the informants, the remittance is minuscule, if any. The common practice is for the migrants to work for five to six years abroad and return with cash on hand as few as USD 700 (1 USD = 14,178.6 IDR). The provincial government has a mission to develop local tourism, which means they need resources. The funding program is designed to attract household industry and create demand for laborers. In a region with such strong kinship value, laborers are provided by familial relationships, which in turn will mitigate the attraction of migration. Since the terminal purpose of the program is kept under wrap due to social harmony, another issue arises: financing is given by the bank staff based on discretions rather than proper assessment. Consequently, non-performing loans increases, and actions are taken to ensure the non-performing loans do not stand out in the annual report.

Once the Governor is taken as one of the political elites, another actor that is not formally inside the CG structure enters the dynamics, namely the regional parliament. During the interviews with RDBs, the Association of RDB, and the regulatory bodies, it becomes clear that Regional Parliament has exercised its right to summon the executive/Governor actively to push the parliamentary agenda to be financed by RDB. We propose the term “shadow authority” to describe their uncontested power notwithstanding their non-existent in the CG structure. The uncontested power stems from their regulatory function that includes the power to decide and control the regional budget. Depending on the political constellation between parliament and elected Governor, these meetings are a projection of power interplay between actors as well as a political party. Both actors have the same interest, i.e. to secure their standings in the political sphere. Based on the interviews, Governor’s actions are driven by political interest and risks. One governor admitted that he has to fence requests from his supporters –business people, parliamentarians, socialites – after the election. These requests include fundings for big projects without clear feasibility study, risky projects even familial weddings. The Governor’s decision to refuse these requests is based on foreseeable political risk rather than economic cost–benefit analysis.

Based on both case studies, the level of opportunistic behavior in agency theory and patron-client approach can be identified to a different construct as proposed by, Perri (2017). In the agency theory, opportunistic behavior is a result of deliberate asymmetric information created by the Principal/Governor for their interest at the expense of others (Williamson 1993; Besley et al. 2012). Such behavior is given conduct that it becomes a trait or makeup of the principal. As for the patron-client approach, the construct of opportunism is rooted in ‘potential supporters’



**Fig. 2** A model of inter-actor's dynamics in regional development banks

(Perri 2017). This means the actions are targeted to secure power base and political votes through short-run populist programs (Krause et al. 2013). Figure 2 below captures the dynamics amongst CG actors in RDBs. While agency theory explains the dynamics between controlling shareholders and BOD, we found patron-client approach explains the dynamics amongst regional parliament, controlling shareholders, and BOD which is shaped by the power interplay amongst the three and political risk or interest of the controlling shareholder.

## 6 Conclusions and Future Research

State-owned enterprises are one of the backbones of the Indonesian economy. With hybrid ownership and purposes, these enterprises pose a particular challenge in terms of their corporate governance practices. The two-tier CG system that is applied in Indonesia, combined with the political elite as the controlling shareholder has resulted in a weak role of BOC. The tug of war between political interests and personal interests of various actors surrounding the RDBs can be explained using the agency theory and patron-client approach. The two cases that are constructed from a series of interviews and media news have shown that moral hazard and opportunistic behaviors exist regardless of the chosen approach. However, the severity of the misconduct CG practices is much obvious and silently acknowledged using the patron-client approach.

## References

- Ross, S.: The economic theory of agency: The principal's problem. *Am. Econ. Rev.* **63**(2), 134–139 (1973)
- Mitnick, B.: Fiduciary rationality and public policy: the theory of agency and some consequences. Paper presented at the 1973 Annual Meeting of the American Political Science Association. In: *Proceedings of the APSA, New Orleans, USA* (1973)



- Jensen, M.C., Meckling, W.H.: Theory of the firm: Managerial behavior, agency costs, and ownership structure. *J. Financ. Econ.* (october) **3**(4), 305–360 (1976)
- Berle, A.A., Means, G.C.: *The Modern Corporation and Private Property*. Macmillan, NY (1932)
- Donaldson, L.: The ethereal hand: organizational economics and management theory. *Acad. Manage. Rev.* **15**(3), 369–450 (1990)
- La Porta, R., Lopez-De-Silanes, F., Shleifer, A.: Investor protection and corporate governance. *J. Financ. Econ.* **58**(1–2), 3–27 (2000)
- Anginer, D., Demircug-Kunt, A., Huizinga, H., Ma, K.: Corporate governance of banks and financial stability. *J. Financ. Econ.* **130**(2), 327–346 (2018)
- Paniagua, J., Rivelles, R., Sapena, J.: Corporate governance and financial performance: the role of ownership and board structure. *J. Bus. Res.* **89**, 229–234 (2018)
- Alabdullah, T.T.Y., Ahmed, E.R., Muneerali, M.: Effect of board size and duality on corporate social responsibility: what has improved in corporate governance in Asia? *J. Account. Sci.* **3**(2), 121–135 (2019)
- Hamdan, A.M., Buallay, A.M., Alareeni, B.A.: The moderating role of corporate governance on the relationship between intellectual capital efficiency and firm's performance: evidence from Saudi Arabia. *Int. J. Learn. Intellect. Cap.* **14**(4), 295–318 (2017)
- Khan, H.: A literature review of corporate governance. *Int. Conf. eB. Manage. Econ.* December, **25**(1), 1–5 (2011)
- Milosevic, D., Andrei, S., Vishny, R.W.: A survey of corporate governance. *J. Financ.* **52**, 737–783 (2015)
- Ducassy, I., Guyot, A.: Complex ownership structures, corporate governance and firm performance: the French context. *Res. Int. Bus. Financ.* **39**, 291–306 (2017)
- Alanazi, A.S.: Corporate governance and firm performance: evidence from an emerging market. *Risk Gov. Control: Financ. Mark. Inst.* **9**(1), 45–52 (2019)
- Ciftci, I., Tatoglu, E., Wood, G., Demirbag, M., Zaim, S.: Corporate governance and firm performance in emerging markets: evidence from Turkey. *Int. Bus. Rev.* **28**(1), 90–103 (2019)
- Pandya, D., Van Deventer, I.A.: The effect of strengthened corporate governance on firm performance in the United States. *J. Account. Bus. Fin. Res.* **12**(2), 26–31 (2021)
- Grossi, G., Papenfuß, U., Tremblay, M.-S.: Corporate governance and accountability of state-owned enterprises: relevance for science and society and interdisciplinary research perspectives. *Int. J. Public Sect. Manage.* **28**(4/50), 274–285 (2015)
- Sari, S.A., Tjia, F.T.: Board remuneration and good corporate governance in Indonesian state-owned enterprises. *Glob. Bus. Rev.* **18**(4), 861–875 (2017)
- Herdjiono, I.: The differences of corporate governance influence on state-owned enterprise and Non State-owned enterprise's performance: the case of Indonesia. *Rev. Financ. Stud* **4**(6), 85–96 (2019)
- Yaacob, H., Basiuni, J.: Corporate governance model of a state-owned enterprise: evidence from an Asian emerging market. *Corp. Gov.* **14**(4), 504–514 (2014)
- Alareeni, B.: Does corporate governance influence earnings management in listed companies in Bahrain Bourse? *J. Asia Bus. Stud.* **12**(4), 551–570 (2018)
- Khongmalai, O., Tang, J.C.S., Siengthai, S.: Empirical evidence of corporate governance in Thai state-owned enterprises. *Corp. Gov.* **10**(5), 617–634 (2010)
- Chen, C.: Solving the puzzle of corporate governance of state-owned enterprises: The path of the Temasek model in Singapore and lessons for China. *Northwest. J. Int. Law Bus.* **36**(2), 303–370 (2016)
- Hasan Al-Naser, M.: Public governance and economic growth: conceptual framework. *Int. J. Bus. Ethics Gov.* **2**(2), 1–15 (2019)
- Monks, R.A.G., Minow, N.: *Corporate Governance*, 5th edn. Blackwell Publishing Ltd, Hoboken (2011)
- Shleifer, A., Vishny, R.W.: A survey of corporate governance. *J. Fin.* **52**, 737–783 (1997)
- Lukviarman, N.: Etika Bisnis Tak Berjalan di Indonesia: Ada Apa Dalam Corporate Governance. *Jurnal Siasat Bisnis* **9**(2), 139–156 (2004)

- Shaw, J.C.: *Corporate Governance and Risk: Systems Approach*. Wiley, New Jersey (2003)
- Weimer, J., Pape, J.: A taxonomy of systems of corporate governance: an international review, *7*(2), 152–166 (1999)
- Schmidt, R.H., Tyrell, M.: Financial systems, corporate finance, and corporate governance. *Eur. Financ. Manage.* **3**(3), 333–361 (1997)
- Lukviarman, N.: Perspektif Shareholding Versus Stakeholding di Dalam Memahami Fenomena Corporate Governance. *Jurnal Siasat Bisnis* **10**(2), 141–161 (2005)
- Fama, E.F., Jensen, M.: Separation of ownership and control. *J. Law Econ.* **26**(2), 301–325 (1983)
- Republik Indonesia: Surat Keputusan Menteri Badan Usaha Milik Negara Nomor SK-16/S.MBU/2012 Tentang Indikator/Parameter Penilaian dan Evaluasi Atas Penerapan Tata Kelola Perusahaan Yang Baik (Good Corporate Governance) Pada Badan Usaha Milik Negara. Accessed 6 June 2012
- Saldana, J.: *Fundamentals of Qualitative Research (Understanding Qualitative Research)*, 1st edn. Oxford University Press, UK (2011)
- Mitnick, B.M.: Origin of the Theory of Agency: An Account by One of the Theory's Originators (2013)
- Mitnick, B.M.: The theory of agency redux. *Acad. Manage. Discoveries* **7**(2), 171–179 (2021)
- Perri: Opportunistic decision-making in government: concept formation, variety and explanation. *Int. Rev. Adm. Sci.* **83**(4), 636–657 (2017)
- Williamson, O.E.: Opportunism and its critics. *Manage. Decis. Econ.* **14**(2), 97–107 (1993)
- Besley, T., Pande, R., Rao, V.: Just rewards? Local politics and public resource allocation in south India. *World Bank Econ. Rev.* **26**(2), 191–216 (2012)
- Krause, G.A., Lewis, D.E., Douglas, J.W.: Politics can limit policy opportunism in fiscal institutions: evidence from official general fund revenue forecasts in the American states. *J. Policy Anal. Manage.* **32**(2), 271–295 (2013)
- Alareeni, B.: The impact of firm-specific characteristics on earnings management: evidence from GCC countries. *Int. J. Manage. Financ. Account.* **10**(2), 85–104 (2018)

# How Do Human Capital Empowerments Constitute the Organizational Performance?



Saeed Nosratabadi , Parvaneh Bahrami, Hamed Motaghi ,  
Mohar Yusof , and Azrul Fazwan Kharuddin 

**Abstract** Much research has proven the effect of human capital on the organizational performance; the present study demonstrates how this causal relationship take place in the reality. In other words, in this research, first, organizational factors that cause human capital to flourish and be empowered are identified, and then their effects on the factors that shape the performance of an organization are identified. Hence, the main objective of this study was to examine the impact of the organizational factors empowering human capital on the organizational performance enablers. To do so, a questionnaire is administrated and Linear regression analysis using SPSS 22.0 applied for data analysis. According to the results, human capital empowerment factors have a statistically significant impact on the performance enablers. Finding disclosed that an effective performance evaluation system and effective leadership, which empower human capital in the organization, have a positive significant effect on the organizational performance. The findings indicate that organizations with an effective performance appraisal system and effective leadership not only provide a platform in which human capital is identified and grown, but also improve the factors that shape the performance of an organization. This research contributes to the literature on human resources, human capital, organizational management, and ultimately organizational performance.

**Keywords** Organizational factors · Human capital · Human capital empowerment · Organizational performance · Performance enablers

---

S. Nosratabadi  
Hungarian University of Agriculture and Life Sciences, Godollo 2100, Hungary

P. Bahrami  
Allameh Tabatabai University, Tehran, Iran

H. Motaghi  
University of Quebec (Gatineau), Québec, Canada

M. Yusof (✉) · A. F. Kharuddin (✉)  
Universiti Tun Abdul Razak, Kuala Lumpur, Malaysia  
e-mail: [ymohar@unirazak.edu.my](mailto:ymohar@unirazak.edu.my)

A. F. Kharuddin  
e-mail: [azrulfazwan@unirazak.edu.my](mailto:azrulfazwan@unirazak.edu.my)

## 1 Introduction

Development of high technology has boosted the importance of knowledge in the organizations even higher than financial and physical assets, as the current century is called the knowledge economic century by Drucker (Drucker 1993). Human capital, as the main aspect of intellectual capital, is a combination of knowledge, skills and experience of people in an organization (Bahrami et al. 2016). Human capital is employees' collective capabilities (Phusavat et al. 2011) which reinforces innovation (Bontis 2001). Although this capital is within the organization, it is not owned by the organization as this capital formed by managers' and staffs' competence, experience, knowledge, skills, attitude, and commitment (Hongli and Lingfang 2010). Thus, by leaving the organization, this capital will also be withdrawn from the organization. To benefit from human capital, organizations are seeking to empower human capital. Various factors are recommended in the literature for empowering human capital in the organization, but organizational factors that can stimulate human capital that are rarely addressed.

Managing and empowering human capital and measuring the outputs have created challenges to knowledge-based businesses. It is a bit hard to measure the output and the performance of a knowledge-based organization (KBO), such as universities and other higher education institutions, because their outputs are intangible. The majority of universities' activities are qualitative and there are not internationally admitted standards to quantify them. Although many universities, recently, have tried to design approaches to appraisal and manage their knowledge assets, these are not worldwide accepted yet. Therefore, determining drivers and empowerments of human capital and identifying the portion of such drivers in the organizational performance is essential for universities. Apparently, lack of suitable measurement tools and complexity in evaluation of the outputs of human capital, have made barriers towards efforts in human capital management, particularly at universities. Hereupon, the main objective of this research is set to study the impact of the organizational factors empowering the human capital on the enabler factors of organizational performance. In other word, this study tends to answer the following research question: do the organizational factors stimulating the human capital in the organizations affect the organizational performance enablers?

## 2 Research Background

In the knowledge economic era, intellectual assets, especially human capital, play a so remarkable role in firm performances that no other sort of capitals can be substituted. The uniqueness of humans has made it so hard to the other firms to duplicate it (Darcy et al. 2014). Human capital refers to managers' and employee's competences, experiences, knowledge, skills, attitude, and commitment (Hongli and Lingfang 2010). The foundation of human capital theory is that this capital is belong

to the staffs and it is not owned by the firms. In other words, a person cannot be separated from his/her skills, knowledge, and experiences. Therefore, social capital and human capital are called as the most sustainable capitals (Pasban and Nojdedeh 2016; Nosratabadi et al. 1650).

Many researchers have tried to provide a definition for the human capital and here some of them are addressed. For example, Namasivayam and Denizci (Namasivayam and Denizci 2006) posit that human capital is an inimitable complex of attributes such as education, skills, and culture, which generates value for the organization. Becker (Becker 2002) defines human capital as the staffs' knowledge, skill, creativity, and health. Weatherly (Weatherly 2003) define human capital as a combination of skills, knowledge, creativity, innovation, and energy that individuals invest in the work. Chen et al. (Chen et al. 2010) believe that human capital constitutes to knowledge, skills and competencies of staff which are essential to improve efficiency (Chen et al. 2010). According to Bontis (Bontis 2001) human capital is a source of innovation and strategic modernization for the organization.

According to Mayo (Mayo 2001), employees need to have enough motivation and commitment to align their own interests with those of the firm so that the organization can utilize the human capital. Accordingly, the firms invest on their human resources so as to increase their efficiency (Kamukama 2013). Research has proven that the investments in intangible resources such as human capital, structural capital and relational capital affects the business performance (Ployhart and Moliterno 2011; Cohen and Kaimenakis 2007), future real income (Magau et al. 2021), and provide sustainability and competitiveness for companies, regardless of their industries and sizes (Muda and Rahman 2016). Muda and Rahman (Muda and Rahman 2016) articulate that developing the staffs' skills increases the organization-level performance because it generates a form of aggregate knowledge, skills, and abilities (or aggregate human capital). Magau, Roodt, and van Zyl (Magau et al. 2021) state that human capital increases the performance of the organization and creates value for shareholders. Organizations do not consider the investment on human capital as an expenditure since they expect to benefit from it in the future. Therefore, the organizations investment on individuals (Magau et al. 2021).

Human capital belongs to the firm's staff not the organization, human capital of an organization, therefore, depends on the capacity of staffs and the extent to which the staffs apply their own skills and knowledge. The firms have found that human capital is one of the most important tools in the knowledge management process, because this capital is able to generate knowledge and it is a source of value creation in the organization. Hence, Muda and Rahman (Muda and Rahman 2016) argue that human capital is like a catalyst in the transformation process of information to the organizational knowledge. Whilst this knowledge is limited as it is depended on the capacity of the staffs. That is why Dakhil and De Clercq (Dakhil and Clercq 2004) believe that human capital is an important asset for the development, in a knowledge-based economy. They also concluded that there is a positive relationship between human capital and innovation capacity (Dakhil and Clercq 2004).

There is many evidence in the literature proving the importance of role of human capital, as an aspect of human capital, in the overall business performance and

productivity. There are also studies in which the mediating role of human capital in increasing organizational performance has also been investigated. For example, Rezaei, Khalilzadeh, and Soleimani (Rezaei et al. 2021) provide evidence that improving knowledge management can increase organizational performance by creating human capital in the organization. Two separate studies, one by Akoi and Yesiltas (Akoi and Yesiltas 2020) at an Iraqi telecommunications company and the other by Triatmanto, Wahyuni, and Respati (Triatmanto et al. 2019) in the Indonesian hospitality industry, found that human resource development activities generate human capital in the organization. Ultimately, this human capital improves organizational performance. Pradana, Pérez-Luño, and Fuentes-Blasco (Pradana et al. 2020) show that in order for organizations to be able to improve their performance through innovation, they must cross the path of human capital. Subramony et al. (Subramony et al. 2018) also disclose that leadership development practices lead to sales growth through human capital and social capital. The effect of the human capital on the organizational performance is not related to the size of organizations. The result of the studies conducted by Kamukama (Kamukama 2013) and Abdullah, and Sofian (Abdullah and Sofian 2012) reveals that the human capital has a direct effect on the performance of large enterprises. On the other hand, the indirect effect of human capital on the performance of large enterprises is studied by Wang and Chang (Wang and Chang 2005) where they realized that that human capital affects large firms' performances through innovation capital and process capital. In addition to the fact that the effect of human capital on the organizational performance is confirmed in large enterprises, the direct impact of human capital on the organizational performance in SMEs has also been proved by Daou, Karuranga, and Su (Daou et al. 2014) and Tovstiga and Tulugurova (Tovstiga and Tulugurova 2007).

Human capital is considered as one of the main stimulators of firm performance (Samagaio and Rodrigues 2016). Thus, much research is done to identify the role of individuals' knowledge, skills, and other similar soft skills on the firm performance (Samagaio and Rodrigues 2016). Kamath (Kamath 2008) found out that human capital has a considerable impact on the profitability of the pharmaceutical companies. Crook et al. (Crook et al. 2011) also expose that human capital is significantly related to the firms' performance. Besides, another study by Jiang et al. (Jiang et al. 2012) illustrate that improvement of human resource by enhancing the employees' competences leads to improve in financial outcomes. Daou, Karuranga, and Su (Daou et al. 2014) believe that the retention and empowerment of knowledgeable and skilled employees increase the organizational performance. Bhutto, Amen, and Shaheen (Bhutto et al. 2020) show that human capital has a positive significant impact on three cords of organizational performance, namely, productivity, innovation and corporate survival.

Another trend seen in the literature on human capital is related to the study of human capital and the new requirements created by the Covid 19 pandemic. Ismayilzade et al. (Ismayilzade et al. 2021) studied the impact of Covid 19 on human capital in Azerbaijan. In this study, psychological stability, the development of cognitive skills, creativity, and innovative activity, initiative, the ability to develop, mobility, and adaptability were considered as quantifiable characteristics of human capital and

the quality of these factors was compared in the period 2017 to 2020. The quality of psychological stability and mobility decreased on average in businesses throughout Azerbaijan during the pandemic. They attribute the decline to factors such as health-related threat and the threat of losing income, a reduction in the number of alternatives to employment and job development resulting from the bankruptcy of business units, and legal restrictions on some jobs. Using empirical evidence, Mirza et al. (Mirza et al. 2020) and Yarovaya et al. (Yarovaya et al. 2021) revealed that in the Covid 19 crisis, equity funds had higher performance and lower risk in countries where the effectiveness of human capital was higher. Because they believe that human capital increases the ability to cope and resilience in times of extreme stress. Jílková (Jílková 2021) and Victor et al. (Victor et al. 2021) show that the perception of the employees about employee benefits has changed during the Covid 19 crisis therefore, they recommend that corporates should support more flexible working benefits to create a sustainable strategy.

## ***2.1 Organizational Empowerments of Human Capital***

Much research has been devoted to identifying the components, empowerment and stimulating factors of human capital. Each study has proposed different empowerment factors for human capital, according to an aspect they have considered for their study. Many approaches provided in the literature for developing and empowering human capital such as education and work experience, on-the-job training (Ployhart and Moliterno 2011), competitive wages and investing in training programs (Black and Lynch 1996). Going deeply into the literature reveals that different researchers have studied different aspects of human capital, subsequently they have provided different stimulations for creating and empowering the human capital in the organizations. Since the main objective of the current study is set to evaluate the effect of organizational factors stimulate the human capital in the organizations, this study only considers the articles proposed organizational factors for empowering the human capital. It is worth mentioning that there is not any individual research presents such factors. That is why the studies have proposed factors for empowering the human capital are precisely studied to distinguish only the organizational factor/s in their model. Seventeen articles found that have proposed a unique model for empowerment factors of human capital. After studding in deep these seventeen studies, it is disclosed that only five of these models have proposed five unique organizational factors stimulating the human capital. Holton and Yamkovenko (Holton and Yamkovenko 2008) consider the effective incentive mechanism as an organizational factor empowering the human capital in the organization. They explain that the effective incentive mechanism is refer to interests, satisfactions, and motivations of the staffs (Holton and Yamkovenko 2008). An effective performance evaluation system is another factor considered as a factor reinforcing the human capital (Liu et al. 2009). According to Liu et al. (Liu et al. 2009) an effective performance evaluation system constitutes a feedback mechanism informing the staffs about their performance. Ouyang

and lee (Ouyang and Lee 2008) consider the effective communication as another factor empowers the human capital in the organization. They argue that the effective communication includes free and clarified communications among the staffs in the organization (Ouyang and Lee 2008). An effective leadership results in higher organizational performance (Nosratabadi et al. 2020) and it is also considered as a factor stimulating the human capital in the organization by Campbell, Ridhuan, and Rahman (Campbell et al. 2010). Campbell et al. (Campbell et al. 2010) discuss that an effective leadership stimulates the staffs mentally and supports their creativity. According to Bryant-Kutcher, Jones, and Widener (Bryant-Kutcher et al. 2008), an effective wages and salaries system is another empowerment factor of human capital. They describe that an effective wages and salaries system refers to allocating resource (i.e., salary and wages) among the staffs in an effective way to improve the creative activities (Bryant-Kutcher et al. 2008).

Therefore, our proposed model for evaluating the organizational factors affect the human capital in the organizations constitutes five factors which are effective incentive mechanism, effective performance evaluation, effective communication, effective leadership, and effective wages and salaries system. These five factors and their definition are provided in Table 1.

**Table 1** Organizational empowerment factors of Human capital and their definition

Factors	Definitions	Sources
Effective Incentive Mechanism	These are quite associated with interests, satisfactions, and motivations of the staffs	Holton and Yamkovenko 2008
Effective Performance Evaluation	It includes a process in which staffs are notified from their performance with both positive and negative feedbacks	Liu et al. 2009
Effective Communication	It comprises free and clarified communications among the staffs, teams, and sectors	Ouyang and Lee 2008
Effective Leadership	An effective leadership stimulates the staffs mentally and supports their creativity. In addition, it increases the inter-relationships with allowing the staffs to share the information	Campbell et al. 2010
Effective wages and salaries system	Allocating resource (i.e., salary and wages) among the staffs is one of the most effective ways to generate the creative activities	Bryant-Kutcher et al. 2008



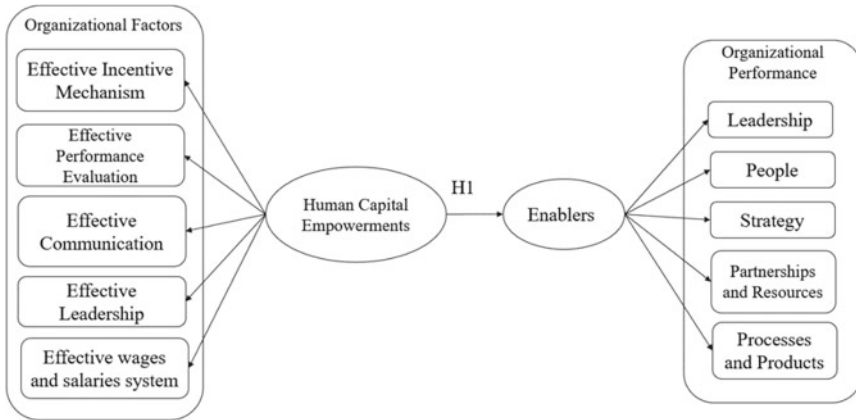
## 2.2 *Organizational Performance Enablers*

The employees' excellence and human resource development need an effective evaluation system as the results of performance evaluation can help organizations to increase the effectiveness of employees (Schiuma and Marr 2003). Therefore, human resource managers consider performance evaluation as tool by which not only they can track reaching the organization's goals, but also, they can meet the interests of employees and the society. Organizational performance evaluation has always been a subject undergoing intense study in the literature of business and management as there are many books and articles are published in this area (Schiuma and Marr 2003).

The performance enablers, indeed, debates about what an organization does in practice. In fact, these are factors enabling organizations to achieve excellent results. European Foundation Quality Management (EFQM) provides a model for evaluation of organizational performance. They use a subjective approach to present their model. There are two main approaches in the literature for performance evaluation: the objective approach and the subjective approach. To evaluate organizational performance utilizing an objective approach, the objective criteria are used. Likewise, evaluation of the performance using subjective criteria is called the subjective approach. According to the EFQM model, five factors of are 1) leadership, 2) people, 3) strategy, 4) partnerships and resources, and finally 5) processes, products and services are performance enablers. The EFQM model also provides four factors as performance results criteria. Since the objective of this study is to investigate the effect of human capital empowerments on the organizational performance enablers, these five factors of the EFQM model are admitted as sub-variables forming the dependent variable of the study which is organizational performance enablers. According to Zerenler and Gozlu (Zerenler and Gozlu 2010), improving the enablers will lead in improving the performance results. Hence the main goal of this study is to answer this question that: are organizational factors empowering human capital able to improve the organizational performance enablers?

## 2.3 *Conceptual Model and Hypotheses*

As it is illustrated in Table 1, the organizational factors empowering human capital are 1) effective incentive mechanism, 2) effective performance evaluation, 3) effective communication, 4) effective leadership, and finally, 5) effective wages and salaries system, which are extracted from the literature. On the other hand, the EFQM model of performance evaluation proposes that to evaluate the organizational performance enablers 1) leadership, 2) people, 3) strategy, 4) partnerships and resources, and finally 5) processes, products and services should be evaluated. According to the main objective of the study and the factors, the conceptual model of this study is depicted in Fig. 1.



**Fig. 1** The proposed model of the study for the effect of organizational factors empowering human capital on the organizational performance enablers

Based on the conceptual model shown in Fig. 1, the main hypothesis of the study is:

H1: The organizational factors empowering human capital have a positive significant effect on the organizational performance enablers.

Subsequently, this research includes five sub-hypotheses as follow:

H1-1: The effective incentive mechanism has a positive significant effect on the organizational performance enablers.

H1-2: The effective performance evaluation has a positive significant effect on the organizational performance enablers.

H1-3: The effective communication has a positive significant effect on the organizational performance enablers.

H1-4: The effective leadership has a positive significant effect on the organizational performance enablers.

H1-5: The effective wages and salaries system has a positive significant effect on the organizational performance enablers.

### 3 Research Methodology

This is a cross-sectional study utilized a questionnaire to collect data. The questionnaire is divided to two parts. The questions in the first part were designed to evaluate the organizational factors empowering human capital and the designed questions in the second part of the questionnaire were related to assess the organizational performance enablers. It is worth mentioning that this questionnaire is designed by the authors of the current study. The population of this study included the academic staff of the Faculty of Literature and Humanities, Science and Engineering at both

**Table 2** Reliability of the variables

Latent variables	Factors	Cronbach's alpha coefficient
Human capital empowerment factors	Effective incentive mechanism	0.77
	Effective performance evaluation	
	Effective communication	
	Effective leadership	
	Effective wages and salaries system	
Performance Enablers	Leadership	0.92
	People	
	Strategy	
	Partnerships and resources	
	Processes and products	

Islamic Azad University and Persian Gulf University, Bushehr, Iran. 180 questionnaires randomly distributed among the population and 160 questionnaires considered for analysis. Cronbach's Alpha test applied to test the reliability of the questionnaires and the results are provided in Table 2. As Table 2 represents, the value of Cronbach's Alpha for both variables are higher than 0.60, therefore it is interpreted that the data collection tool of the study is reliable.

### 3.1 The Descriptive Analysis of the Data

Here in this section the demographic information related to the population of the study is provided. As it is mentioned above, 160 questionnaires are analyzed and 45 of respondents were male and 115 were female. In terms of education, 33.75% of the respondents hold a doctoral degree, 21.25% of them had a master's degree, 41.3% of them had a bachelor's degree and only 3.75% of them had a high school diploma.

## 4 Results

To test the hypotheses of the study the multiple linear regression is applied. "Enter" method, which is one of the multiple regression methods, were admitted, in this study. Utilizing SPSS 22.0 facilitated the data analysis as all the analyses are done

through this software. As the hypothesis of the study is: The organizational factors empowering human capital have a positive significant effect on the organizational performance enablers, then H0 and H1 are respectively:

H0: The organizational factors empowering human capital don't have a positive significant effect on the organizational performance enablers.

H1: The organizational factors empowering human capital have a positive significant effect on the organizational performance enablers.

The results of analyzing the linear regression analysis expose that the organizational factors empowering human capital have a positive impact on the organizational performance enablers. As Table 3 represents, R<sup>2</sup> is 0.830 which is statistically remarkable. Adjusted R Square is very close to the R Square, which is 0.825, that represents the number of the sample was statistically adequate that does not interfere the results. The result of the F test in Table 4 shows that that the calculated R<sup>2</sup> is valid and the last column of Table 4 shows that result of the F test is statistically significant. In other words, the main hypothesis is of the study is confirmed.

Table 5 articulates the detail of effect of the organizational factors empowering human capitals on the performance enablers. According to Table 5, the beta coefficient of 'effective performance evaluation' is higher than the other factors, which is equals to 0.902. It means that the factor of 'effective performance evaluation' has the greatest effect on the organizational performance enablers. To test the significant level of the betas' related to all the factors, T-student test is applied and as the last column of the Table 5 illustrates, the t-student of only two factors of effective performance evaluation (t = 26.140, sig. = 0.000) and effective leadership (t = 2.284, sig. = 0.024 < 0.05) are significant. It represents that the betas related to the respective variables are acceptable. Therefore, the corresponding hypotheses are confirmed and

**Table 3** Regression model of the effect of human capital empowerment factors on the organizational performance enablers

Model	R	R square	Adjusted R square	Std. error of the estimate	Durbin-watson
1	0.911a	0.830	0.825	0.12706	1.416

**Table 4** Result of ANOVA<sup>b</sup> Test

Model		Sum of squares	df	Mean square	F	Sig
1	Regression	12.175	5	2.435	150.832	0.000a
	Residual	2.486	154	0.016		
	Total	14.662	159			

a. Predictors: (Constant), effective incentive mechanism, effective performance evaluation, effective communication, effective leadership, effective wages and salaries system.

b. Dependent Variable: Performance Enablers.

**Table 5** The effect of human capital empowerment factors on the organizational performance enablers

Model		Unstandardized coefficients		Standardized coefficients	T-value	Sig.
		B	Beta	Beta		
1	(Constant)	3.714	0.217		17.153	0.000
	Effective incentive mechanism	0.018	0.012	0.051	1.428	0.155
	Effective performance evaluation	1.073	0.041	0.902	26.140	0.000
	Effective communication	-0.011	0.017	-0.024	-0.679	0.498
	Effective leadership	0.085	0.037	0.180	2.284	0.024
	Effective wages and salaries system	0.003	0.003	0.038	1.109	0.269

there is not any evidence to confirm the rest hypotheses. Hence, the sub-hypotheses of 2 and 4 are confirmed.

## 5 Conclusion and Discussion

Many studies have proven the direct and indirect effect of the human capital on the organizational performance, regardless the size of the organizations. The direct effect of human capital on the performance of large businesses are studied by researchers like Kamukama (Kamukama 2013) and Abdullah, and Sofian (Abdullah and Sofian 2012), and the indirect effect of human capital on the performance of large businesses is studied by Wang and Chang (Wang and Chang 2005). Daou, Karuranga, and Su (Daou et al. 2014) and Tovstiga and Tulugurova (Tovstiga and Tulugurova 2007) studied the direct impact of human capital on the organizational performance in SMEs. Therefore, the organizations invest on their human capital to benefit from the advantages.

Subsequently, studies are conducted to evaluate the impact of investing on the human capital and developing human capital on the overall performance. For instance, Jiang et al. (Jiang et al. 2012) and Daou, Karuranga, and Su (Daou et al. 2014) proved that empowering the human capital increase the organizational performance. Addition to the current developing programs and strategies, there are organizational factors that are mentioned in the literature as empowering factors of human capital in the organizations. Current study revealed that an effective incentive mechanism (Holton and Yamkovenko 2008), an effective performance evaluation system (Liu et al. 2009), an effective performance evaluation system (Liu et al. 2009), an effective communication (Ouyang and Lee 2008), an effective leadership is also considered (Campbell et al. 2010), and finally an effective wages and salaries system

(Bryant-Kutcher et al. 2008) are the factors identified in the literature that can empower the human capital in the organization. Since there was not any study to investigate the effect of such empowerment factors, the current study is done to bridge this theoretical gap by answering this question: do the organizational factors empowering the human capital affect the organizational performance enablers?

According to the results, these organizational factors that stimulate the human capital have an indirect effect on the organizational performance. This result is consistent with the results of other studies such as Wang and Chang (Wang and Chang 2005). As it is mentioned in the objective of this study, the effect of the human capital empowerments is studied on the performance enablers. According to Zerenler and Gozlu (Zerenler and Gozlu 2010) improving the enablers will lead in improving the performance results. As the results revealed, human capital empowerments have a significant positive effect on the performance enablers. It means, improving human capital empowerments improves the enablers and it, in turns, increases the organizational performance.

As it is mentioned, five organizational factors recognized that are able to empower human capital. The effect of these five factors on the performance enablers tested as well. The result of the regression analysis exposed that only two of the five factors have a positive influence on the performance enablers: the effective performance evaluation system and effective leadership. These findings imply that having an effective performance evaluation system which gives feedbacks to the staffs about their performance, addition to empowering the human capital, it ameliorates the performance enablers. Indeed, the result was not unexpected as it makes sense that having an effective performance evaluation system leads in improve the performance enablers. On the other hand, the result of data analysis disclosed that having an effective leadership, which stimulates the staffs mentally and supports their creativity, improve the performance enablers which are leadership, people, strategy, partnerships and resources, and processes and products. According to Zerenler and Gozlu (Zerenler and Gozlu 2010) these five factors (i.e., leadership, people, strategy, partnerships and resources, and processes and products) are the main providers of the overall performance. Therefore, this result (i.e., the positive effect of the effective leadership on the performance enablers) is justifiable. Because having an effective leadership improve the performance enablers as the leadership is one of the elements of the performance enablers and improving one on the elements affects the whole score of performance enablers. In other words, confirming the hypotheses H1-2 and H1-4 is in consistent with the EFQM model of performance evaluation.

Studying the effect of human capital empowerments on the performance enablers at a university, as a knowledge-intensive organization, justifiable, but there are still limitations to generalize to other contexts. First, studying two main universities of one city (Bushehr) in Iran, makes it hard to generalize the finding to all the universities in even Iran context. Likewise, the result cannot be generalized for all the knowledge intensive organizations. As the contribution of this study is to investigate the effect of human capital empowerments on the performance enablers at the two main universities in Bushehr, Iran. On the other hand, to address the research question of the study, only these mentioned universities are studied, and it could collect the data

related to the other industries as well. Thus, it is recommended for the future studies, the researchers can examine the provided model of this study in the other industries and even in the other context and environments also.

## References

- Drucker, P.F.: *Managing in turbulent times*. Routledge, New York (1993)
- Bahrami, P., Nosratabadi, S., Illés, C.B.: Role of intellectual capital in corporate entrepreneurship. *Calitatea* **17**(155), 111 (2016)
- Phusavat, K., Comepa, N., Sitko-Lutek, A., Ooi, K.-B.: Interrelationships between intellectual capital and performance empirical examination. *Ind. Manage. Data Syst.* **111**(6), 810–829 (2011)
- Bontis, N.: CKO wanted-evangelical skills necessary: a review of the chief knowledge officer position. *Knowl. Process. Manage.* **8**(1), 29–38 (2001)
- Hongli, L., Lingfang, L.: Modeling and measuring intellectual capital of business incubator. In: *International Conference on Information Management, Innovation Management and Industrial Engineering (ICIIE)*, vol. 4, pp. 79–82. IEEE (2010)
- Darcy, C., Hill, J., McCabe, T., McGovern, P.: A consideration of organizational sustainability in the SME context. *Eur. J. Training Develop.* **38**(5), 398–414 (2014)
- Pasban, M., Nojehdeh, S.H.: A review of the role of human capital in the organization. *Procedia Soc. Behav. Sci.* **230**, 249–253 (2016)
- Nosratabadi, S., et al.: Social capital contributions to food security: a comprehensive literature review. *Foods* **9**(11), 1650 (2020)
- Namasivayam, K., Denizci, B.: Human capital in service organizations: Identifying value drivers. *J. Intellect. Cap.* **7**(3), 381–393 (2006)
- Becker, G.S.: The age of human capital. *Education in the Twenty-First Century*, pp. 3–8 (2002)
- Weatherly, L.A.: Human capital—the elusive asset measuring and managing human capital: a strategic imperative for HR. *Research Quarterly* (2003). <http://www.shrm.org/research/quarterly/0301capital.pdf>. Accessed June, Aug 2021
- Cheng, M.Y., Lin, J.Y., Hsiao, T.Y., Lin, T.W.: Invested resource competitive intellectual capital and corporate performance. *J. Intellect. Capital* **11**(4), 433–450 (2010)
- Mayo, A.: *The Human Value of the Enterprise: Valuing People as Assets: Monitoring. Managing*, Nicholas Brealey Publishing, London, Measuring (2001)
- Kamukama, N.: Intellectual capital: company's invisible source of competitive advantage. *Competitiveness Rev. Int. Bus. J.* **23**(3), 260–283 (2013)
- Ployhart, R.E., Moliterno, T.P.: Emergence of the human capital resource: a multilevel model. *Acad. Manage. Rev.* **36**(1), 127–150 (2011)
- Cohen, S., Kaimenakis, N.: Intellectual capital and corporate performance in knowledge intensive SMEs. *Learn. Organ.* **14**(3), 241–262 (2007)
- Magau, M.D., Roodt, G., van Zyl, G.: Monetary value of human capital disclosure for predicting future business earnings. *SA J. Hum. Resour. Manage.* **19**, 14 (2021)
- Muda, S., Rahman, M.R.C.A.: Human capital in SMEs life cycle perspective. *Procedia Econ. Finan.* **35**, 683–689 (2016)
- Dakhl, M., De Clercq, D.: Human capital, social capital, and innovation: a multi-country study, entrepreneurship and regional development. *Entrep. Reg. Dev.* **16**, 107–128 (2004)
- Rezaei, F., Khalilzadeh, M., Soleimani, P.: Factors affecting knowledge management and its effect on organizational performance: mediating the role of human capital. *Adv. Hum.-Comput. Interac.* (2021)
- Akoi, S.M., Yesiltas, M.: The impact of Human Resource Development (HRD) practices on organizational performance: the mediating role of human capital. *Revista de Cercetare Si Interventie Sociala* **70** (2020)

- Triatmanto, B., Wahyuni, N., Respati, H.: Continual human resources empowerment through human capital and commitment for the organizational performance in hospitality industry. *Qual. Acces Sucses* **20**(173), 84–91 (2019)
- Pradana, M., Pérez-Luño, A., Fuentes-Blasco, M.: Innovation as the key to gain performance from absorptive capacity and human capital. *Technol. Anal. Strateg. Manage.* **32**(7), 822–834 (2020)
- Subramony, M., Segers, J., Chadwick, C., Shyamsunder, A.: Leadership development practice bundles and organizational performance: the mediating role of human capital and social capital. *J. Bus. Res.* **83**, 120–129 (2018)
- Abdullah, D.F., Sofian, S.: The relationship between intellectual capital and corporate performance. *Procedia Soc. Behav. Sci.* **40**, 537–541 (2012)
- Wang, W.Y., Chang, C.: Intellectual capital and performance in causal models: evidence from the information technology industry in Taiwan. *J. Intellect. Cap.* **6**(2), 222–236 (2005)
- Daou, A., Karuranga, E., Su, Z.: Towards a better understanding of intellectual capital in Mexican SMEs. *J. Intellect. Cap.* **15**(2), 316–332 (2014)
- Tovstiga, G., Tulugurova, E.: Intellectual capital practices and performance in Russian enterprises. *J. Intellect. Cap.* **8**(4), 695–707 (2007)
- Samagaio, A., Rodrigues, R.: Human capital and performance in young audit firms. *J. Bus. Res.* **69**(11), 5354–5359 (2016)
- Kamath, G.: Intellectual capital and corporate performance in indian pharmaceutical industry. *J. Intellect. Cap.* **9**(4), 684–704 (2008)
- Crook, T.R., Todd, S.Y., Combs, J.G., Woehr, D.J., Ketchen, D.J., Jr.: Does human capital matter? a meta-analysis of the relationship between human capital and firm performance. *J. Appl. Psychol.* **96**(3), 443 (2011)
- Jiang, K., Lepak, D.P., Hu, J., Baer, J.C.: How does human resource management influence organizational outcomes? a meta-analytic investigation of mediating mechanisms. *Acad. Manage. J.* **55**(6), 1264–1294 (2012)
- Bhutto, S.A., Amen, U., Shaheen, A.: The mediating role of absorptive capacity and training in the relationship among the dimensions of human capital and organizational performance: empirical evidence from the textile sector of Pakistan. *Hamdard Islamicus* **43**(1), 295–312 (2020)
- Ismayilzade, A.A., Guliyeva, S., Teymurova, V., Azizova, R., Alishova, C.: The impact of Covid-19 on the quality of human capital for the economic development of Azerbaijan. *J. East. Eur. Central Asian Res. (JEECAR)* **8**(1), 26–39 (2021)
- Mirza, N., Hasnaoui, J.A., Naqvi, B., Rizvi, S.K.A.: The impact of human capital efficiency on Latin American mutual funds during Covid-19 outbreak. *Swiss J. Econ. Stat.* **156**(1), 1–7 (2020)
- Yarovaya, L., Mirza, N., Abaidi, J., Hasnaoui, A.: Human capital efficiency and equity funds' performance during the COVID-19 pandemic. *Int. Rev. Econ. Financ.* **71**, 584–591 (2021)
- Jílková, P.: Sustainable corporate strategy: the role of human capital in the time of COVID-19 Crisis. *TEM J.* **10**(2), 699–706 (2021)
- Victor, V., Karakunnel, J.J., Loganathan, S., Meyer, D.F.: From a recession to the COVID-19 pandemic: inflation-unemployment comparison between the UK and India. *Economies* **9**(2), 73 (2021)
- Black, S.E., Lynch, L.M.: Human-capital investments and productivity. *Am. Econ. Rev.* **86**(2), 263–267 (1996)
- Holton, E.F., III., Yamkovenko, B.: Strategic intellectual capital development: a defining paradigm for HRD? *Hum. Resour. Dev. Rev.* **7**(3), 270–291 (2008)
- Liu, F., Jiang, B., Xu, Q.: The promotion of interpersonal trust to human capital accumulation—an empirical study based on education level. In: *International Conference on Management and Service Science (MASS 2009)*, pp. 1–4. IEEE (2009)
- Ouyang, L., Lee, H.C.: Human capital, efficiency and productivity: empirical evidence from Taiwanese banking industry. In: *4th IEEE International Conference on Management of Innovation and Technology (ICMIT)*, pp. 216–221. IEEE (2008)
- Nosratabadi, S., Bahrami, P., Palouzian, K., Mosavi, A.: Leader cultural intelligence and organizational performance. *Cogent Bus. Manage.* **7**(1), 1809310 (2020)



- Campbell, D., Ridhuan, M., Rahman, A.: A longitudinal examination of intellectual capital reporting in marks and spencer annual reports 1978–2008. *Brit. Account. Rev.* **42**(1), 56–70 (2010)
- Bryant-Kutcher, L., Jones, D.A., Widener, S.K.: Market valuation of intangible resources: the use of strategic human capital. in advances in management accounting. In: *Advances in Management Accounting*, Emerald Group Publishing Limited, pp. 1–42 (2008)
- Schiama, G., Marr, B.: Business performance measurement-past present and future. *Manage. Decis.* **41**(8), 680–687 (2003)
- Zerenler, M., Gozlu, S.: Impact of intellectual capital on exportation performance: research on the Turkish automotive supplier industry. *J. Fransnational Manage.* 318–341 (2010).

# **Corporate Social Responsibility and Organizational Culture**

# The Impact of Ownership Structures on Corporate Social Responsibility Disclosure in Palestine



Nafieh Assaf and Mohammed W. A. Saleh

**Abstract** This study investigates the impact of managerial ownership and blockholder ownership in determining Corporate Social Responsibility Disclosure (CSRDL) in Palestinian listed firms. This study is based on panel data of 576 observations from all firms listed on the Palestine Security Exchange during the period from 2009 to 2020. The result reveals that blockholders' ownership is significant and positively related to CSRDL. However, managerial ownership is positive but not significantly related to CSRDL. This study measured the CSRDL as content analysis for five elements; employees, environment, community, value-added, and product. CSRDL measured as a number of words identified in each item were utilized to capture the nature of disclosure made in each of the five issues. The few studies in Palestine and the mixed results in the prior studies in developed countries make it necessary to study the impact of ownership structures on CSRDL in Palestine, in order to enrich the previous literature.

**Keywords** Corporate social responsibility · Managerial ownership · Blockholders ownership

## 1 Introduction

Until the late twentieth century, businesses were considered socially responsible where they obeyed the regulations or laws of the land and met the basic needs of their employees and the host community (Carroll 2008). Today, corporate social responsibility (CSR) goes far past the old altruism of the past-giving cash to great purposes at the end of the budgetary year. Organizations acknowledge the environment around them by participating in their nearby communities (Farcane, and Bureana 2015). Not only they concern about the quality and uniqueness of their brand names but also

---

N. Assaf · M. W. A. Saleh (✉)

Department of accounting information System, Palestine Technical University-Khadoori, Tulkarm, Palestine

N. Assaf

e-mail: [n.asaf@ptuk.edu.ps](mailto:n.asaf@ptuk.edu.ps)

about how well they connect to the world (Clarke 1998). Bowen (1953) notes that the objective of corporate social responsibility is to get knowledge regarding the organization's activity to stakeholders and support a positive effect through its activities, which push open interest, by empowering group development and improvement.

Great attention has been given to the relationship between the firms and community especially in Palestine. This is because Palestine faces a very bad situation in both, political and economic. Besides, a high percentage of unemployment, pollution, socio-economic has affect Israel's occupation and policies towards Palestinian society. This situation considers as an incentive to study how the companies can be helpful to the people and community in general (Saleh, Latif, and Bakar 2018a).

Despite the important value of CSR in Palestine, many firms avoid engaging in social responsibility activities. The CSR disclosure in the companies in Palestine is not up to standard, some companies do not disclose regarding the CSR at all. This indeed is negatively related to Palestinian society. (Saleh, Latif, and Bakar 2018b). Michelin and Parbonetti (2010) stress that in today's globalized world, financial analysts, organizations and various stakeholders perceive that corporate social responsibilities of the organization are vital to its prosperity and going concern. Therefore, we need an in-depth study on the impact of CSR in Palestine.

On the other hand, this study focuses on the impact of the ownership structure on CSR disclosure, because, as stated in the agency theory, most shareholders try to maximize their profits, which affects the values paid for social responsibility activities (Jensen and Meckling 1976). This study comes to investigate the effect of ownership structures on the extent of CSR disclosure in Palestine.

This study comprises seven sections; the first section contains the introduction. Section two discusses the literature review and includes the hypothesis development. Section three presents the research method and research design. After that, section four explains the measurement of the variables. The diagnostic test and regression analysis were explained in section five, followed by sections six and seven which presents the results and discussion and the conclusion of the finding and their significance to the study and presents recommendations for future research.

## **2 Literature Review and Hypotheses Development**

### ***2.1 Managerial Ownership and CSR***

Managerial ownership is the degree of shares claimed by CEO and executives. Ownership plays an essential part in raising the agency issue. Thus, the high level of managerial ownership leads the shareholder to focus more on the director's behaviour in anticipation of any act of self-interest activity (Jensen and Meckling 1976). Therefore, this observing the conduct generates expenses, which, therefore, leads the manager to give voluntary disclosure that is an option for monitoring. In addition, managerial ownership increase prompts diminish in agency cost. Subsequently,

information discloses interest in the manager's monitoring would be diminished (Trisnadewi and Amlayasa 2020).

Many empirical results demonstrate that managerial ownership is adversely identified with disclosure. Xiao and Yuan (2007) find that there is a noteworthy relationship between the rate of shares held by managers and voluntary disclosure. Additionally, Baek et al. (2009) reveal that managerial ownership affects CSR disclosure positively. The argument for this result is because there exists a mix association between managerial ownership and information disclosure level.

***H1: There is a positive relationship between managerial ownership and CSR disclosure.***

## ***2.2 Blockholders Ownership and CSR***

Blockholders ownership is the rate of shares held by significant shareholders. Jensen and Meckling (1976) argue that generous shareholders are relied upon to have both more significant influence and motivators to monitor management as their resources are attached to the company's performance. Managers are anticipated to uncover more yearly reports on CSR with a particular end goal to diminish agency costs involved in observing exercises. Hackston and Milne (1996) and Chourou et al. (2001) give backing to this forecast in uncovering a relationship between the ownership structure and the reach out of information voluntarily revealed by the recorded companies in their studies.

***H2: There is a positive relationship between blockholders ownership and CSR disclosure.***

## **3 Research Design**

The researcher used a secondary source of data for the purpose of this study. Twelve years (12) covering a period of 2009–2020 is utilized. Annual reports and accounts of the sampled companies were obtained from relevant sources, Palestine Security Exchange (PSE). Data were extracted on corporate social responsibility from notes to corporate social responsibility and directors' reports available in the statement of financial position. The variables to be measured are ownership structures (managerial and blockholders ownership) as an independent variable and CSR as a dependent variable in the Palestinian Listed firms. The population of the study is (48 firms) and the populations are presented in the following table:

**Table 1** Sample size

	Sectors	No. of companies
1	Industry	13
2	Service	13
3	Bank	7
4	Insurance	7
5	Investment	8

Total Sample Size = 48 Companies (2009–2020)

Number of observation = 48 firms  $\times$  12 years = 576 obs

## 4 The Measurement of the Variables

### 4.1 *Dependent Variable*

To achieve the study objectives, content analysis was utilized to measure the Corporate Social Responsibility Disclosure (CSRDL) extent. This is aligning with Haniffa and Cooke (2005). The texts have been translated into codes depending on the criteria written by (Weber 1988). A fundamental segment of content analysis is the assurance and improvement of classes into which content units may be orchestrated. Previous studies have measured CSRDL in the same track (Haniffa and Cooke 2005, and Eng and Mak 2003). This study contributes to the previous literature by applying content analysis in a new environment such as Palestine.

Moreover, by utilizing the content analysis, CSRDL length is measured as the number of words in every sentence identified with every item in the checklist (Saleh, Latif, Bakar, and Maigoshi 2020). Some items were excluded in the words counting checklist i.e. graphical presentation. However, numbers of words identified with every item under the five areas of concern were included to process the CSRDL (length). Both word and sentence numbers were viewed as yet because of a high correspondence between the two. For the purpose of this study, word measurement is used.

The study instrument was composed of elements relating to five (5) issues namely: employees, environment, community, value-added, and product (Haniffa and Cooke 2005). CSRDL measured as a number of words identified in each item were utilized to capture the nature of disclosure made in each of the five issues. The method (CSRDL) accounts for the extent or degree of disclosure (Table 2).

The CSRDL exposure is estimated for every enterprise as a proportion of the real score granted to the absolute number of revelation things reliable with Haniffa and Cooke (2005) the CSR disclosure index is determined as follows:

**Table 2** Corporate social responsibility disclosure (CSR) checklist

Themes	No.	Items
A		<b>Community involvement</b>
	1	Overall contribution
	2	Involvement in government social awareness
	3	Activities of community with regard to Education/health
B		<b>Environment</b>
	1	Environmental regulations
	2	Preservation of raw materials and recycling
	3	Programmes for safeguarding the environment
	4	Achievements for environmental protection
	5	Public/Private initiative activities designed to secure the environment
C		<b>Employee information</b>
	1	Employees/Staff appreciation
	2	Employment hurdles
	3	Negotiations of ways to overcome employment
	4	Discussion on staff welfare
	5	Profit sharing scheme system
	6	Number of workers
	7	Breakdown of workers by business line
	8	Breakdown of staff by geographic area
	9	Classification of workers by function
	10	Classification of workers by race
	11	Classification of workers by age
	12	Number of workers for 2 years and above
	13	Reasons for changes in staff number
	14	Overall redundancy retrenchment information
	15	Records on accidents
	16	Cost of security measures
	17	Security & health standard
	18	Corporate policy on staff training & development
	19	Type of training
	20	Number of staff trained
	21	Amount spend on training & development of staff
22	Classification of staff trained	
D		<b>Products or service information</b>
	1	Discussion of main type of products
	2	Pictures of main types of products

(continued)

**Table 2** (continued)

Themes	No.	Items
	3	Improvement in products standard
	4	Improvement in customers services
	5	Distribution of marketing network for finished products-domestic market
	6	Distribution in marketing channels for finished goods-international market
	7	Customer ratings/awards received
E		<b>Value-added information</b>
	1	Value-added statement
	2	Qualitative value-added statement
	3	Value-added ratios/data

Source: Adapted from Haniffa and Cooke (2005)

$$CSRS_j = \frac{\sum_{i=1}^{n_i} X_{ij}}{n_j}$$

Where:

$CSRS_j$ = Corporate social responsibility score

$n_j$  = is the maximum number of items expected for  $j$ th firm.

$X_{ij}$ = 1 if the item  $i$ th is disclosed

0 if the item  $i$ th is not disclosed

So that  $0 \leq I_j \leq 1$

## 4.2 Independent Variable

### 4.2.1 Managerial Ownership

Managerial Ownership (MO) is measured as a ratio of managers' shares to total outstanding ordinary shares.

### 4.2.2 Blockholders Ownership

Blockholders Ownership (BO) is measured as owner holding at least 5% of shares.



### 4.3 Control Variables

Return on Assets (ROA) is calculated by earnings before interest and taxes divided by total assets. Leverage (LVG) is calculated as total liabilities divided by total assets. Firm size (FS) is calculated as the natural logarithm of total assets.

## 5 Diagnostic Test and Regression Analysis

The panel data analysis is employed in this study. The justification for using panel analysis is the combination of five sectors (48 firms) over 12 years period (Balgati 2008). The univariate analysis was tested to test the correlations between the variables, and the results showed that the data were free from multicollinearity problems, where the highest correlation between two variables is 0.48. To ensure that, the variance inflation factors (VIF) was performed and its result was not exceeding 10. Moreover, Breusch- Pagan/Cook-Weisberg test was conducted and the results assured that the data is not exposed to heteroscedasticity problem ( $\chi^2(1) = 2.44, \text{prob} > \chi^2 = 0.1361$ ). Lastly, the better model was chosen after applying the Hausman and Breusch and Pagan Lagrangian Multiplier Test is Fixed-Effect model. The Fixed-Effect is suitable for endogeneity issue. Saleh, Shurafa, Shukeri, Nour, and Maigosh (2020) stated that the fixed effect model reduces the impact of endogeneity. The model is specified to answer the objective of the study:

$$CSR D \textit{ it} = \beta_0 + \beta_1 MO \textit{ it} + \beta_2 DO \textit{ it} + \beta_6 ROA \textit{ it} + \beta_7 LVG \textit{ it} + \beta_8 FS \textit{ it} + \sum YEAR DUMMY + \sum INDUSTRY DUMMY + \epsilon$$

## 6 Results and Discussion

Table 3 shows that managerial ownership is positive but not significantly related with CSR D. The coefficient of managerial ownership reveals a positive relationship that is in line with the agency theory and previous empirical studies as well as the hypothesis posted earlier but it is statically not significant. Therefore, the hypothesis is not supported in this study. Blockholder’ ownership is statistically significance in a positive managerial with CSR D at 1% level of significance. Therefore, any 1-unit increase in blockholders’ ownership will lead to increase in CSR D length by 3.33.

Blockholders’ ownership is positively related to CSR D and statistically significant. Thus, the second hypothesis which states a positive relationship between stockholders ownership and corporate social responsibility disclosure in Palestine is accepted at 1% percent level of significance. The result is in line with the previous studies of Agrawal and Mandelker (1990); Shleifer and Vishny (1997); and Chourou

**Table 3** Results of the regression using fixed-effect model

CSRD	Coef.	p-value
MO	0.487	0.211
BO	0.333	0.000***
ROA	0.059	0.041**
LVG	0.004	0.566
FS	-0.051	0.030**
_constant	0.060	0.385
Year dummy	YES	
Industry dummy	YES	
No. of obs	576	
R-squared	0.36	

Note: *MO* managerial ownership, *BO* blockholders ownership, *ROA* return on assets, *LVG* leverage, *FS* firm size. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

et al. (2001) who reported a similar relationship and argued that blockholders owned more than 5% shares of the company as such they want the business to be carried out in an ethical way.

## 7 Conclusions and Recommendations

The researcher relied on the available literature, agency theory to the study and empirical evidence of the Palestinian situation to come up with two (2) independent variables and three (3) control variables used to determine and explain the behavior of ownership structures and in Palestine. Data was collected from annual reports and accounts of the sampled companies. The diagnostic tests ensure that data is free from the problems of heteroscedasticity, multicollinearity, and outlier. The results show that the relationship between managerial ownership and CSRD to be positive and not significant, while blockholders reveal a significant positive association with CSRD. Future researches should use different variable apart from the studied variables. Furthermore, a similar study is needed in other sectors and another period of time not covered by the current study. This is because the corporate governance regime is affected by different sectors and from time to time due to the rapid changes due to globalization. In addition, future researchers can look at the moderating effect in the relationship between ownership structures and CSRD since it can be a hidden variable that may change the direction of the relationship drawn by the current study.

**Acknowledgements** The authors thank Palestine Technical University-Khadoorie for its supports.

## References

- Agrawal, A., Mandelker, G.: Large shareholders and the monitoring of managers: the case of antitakeover charter amendments. *J. Financ. Quant. Anal.* **25**, 143–161 (1990)
- Baek, H., Johnson, D., Joung, W.: Managerial ownership, corporate governance and voluntary disclosure. *J. Bus. Econ. Stud.* **15**, 44–61 (2009)
- Balgati, H.B.: Forecasting with panel data. *J. Forecast.* **27**, 153–173 (2008)
- Bowen, H.R.: *Social Responsibilities of the Businessmen*. Harper and Bros, New York (1953)
- Carroll, A.B.: A history of corporate social responsibility: Concepts and practices. *The Oxford handbook of corporate social responsibility*, 1 (2008)
- Chourou, S.M., Bedard, J., Courteau, L.: *Corporate Governance and Earnings Management-Working Paper*, Universite Laval, Canada (2001)
- Clarke, J., Gibson-Sweet, M.: The use of corporate social disclosures in the management of reputation and legitimacy. *Bus. Ethics: Eur. Rev.* **8**, 5–13 (1999)
- Eng, L.L., Mak, Y.T.: Corporate governance and voluntary disclosure. *J. Account. Public Policy* **22**(4), 325–345 (2003)
- Farcane, N., Bureana, E.: History of corporate social responsibility concept. *Annales Universitatis Apulensis: Series Oeconomica* **17**(2), 31 (2015)
- Hackston, D., Milne, M.J.: Some determinants of social and environmental disclosures in New Zealand companies. *Account. Audit. Account. J.* **9**, 77–108 (1996)
- Haniffa, R.M., Cooke, T.E.: The effect of culture and governance on corporate social reporting. *J. Account. Public Policy* **24**, 391–430 (2005)
- Jensen, M.C., Meckling, W.H.: Theory of firm behaviour agency cost and ownership structure. *J. Financ. Econ.* **3**, 305–360 (1976)
- Michelon, G., Parbonetti, A.: The effect of corporate governance on sustainability disclosure. *J. Manag. Gov.* **16**, 477–509 (2010)
- Saleh, M.W.A., Latif, R.A., Bakar, F.A.: A conceptual framework for the role of corporate social responsibility in Palestinian firm performance. *J. Account. Financ. Emerg. Econ.* **4**(2), 141–150 (2018). <https://doi.org/10.26710/jafee.v4i2.527>
- Saleh, M.W., Latif, R.A., Bakar, F.A.: The impact of ownership structure on the performance of Palestinian listed companies. *Int. J. Bus. Market. Manag. (IJBMM)*. **3**(9), 16–21 (2018)
- Saleh, M.W., Latif, R.A., Bakar, F.A., Maigoshi, Z.S.: The impact of multiple directorships, board characteristics, and ownership on the performance of Palestinian listed companies. *Int. J. Account. Audit. Perform. Eval.* **16**(1), 63–80 (2020). <https://doi.org/10.1504/IJAPE.2020.106774>
- Saleh, M.W., Shurafa, R., Shukeri, S.N., Nour, A.I., Maigosh, Z.S.: The effect of board multiple directorships and CEO characteristics on firm performance: evidence from Palestine. *J. Account. Emerg. Econ.* **10**(4), 637–654 (2020). <https://doi.org/10.1108/JAEE-12-2019-0231>
- Shleifer, A., Vishny, R.W.: A survey of corporate governance. *J. Financ.* **52**, 737–783 (1997)
- Trisnadewi, A.E., Amlayasa, A.: Corporate values: the role of corporate social responsibility, managerial ownership and profitability in Indonesia. *Am. J. Humanit. Soc. Sci. Res. (AJHSSR)* **4**(7), 279–287 (2020)
- Weber, R.J.: Probabilistic values for games. *The Shapley Value. Essays in Honor of Lloyd S. Shapley*, pp. 101–119 (1988)
- Xiao, H., Yuan, J.: Ownership structure, board composition and corporate voluntary disclosure. *Manag. Audit. J.* **22**, 604–619 (2007)

# Antecedent and Consequence of Work Life Balance in Islamic Perspective: Cases in Indonesia



Muafi Muafi , Yuni Siswanti , and Wirman Syafri 

**Abstract** This study is testing and analyzing the work environment as an antecedent and intent to turn over as a consequence of the Work Life Balance in Islamic Perspective (WLBIP). This study uses generation Y employees at a state-owned enterprise in Indonesia as respondent. 43 employees as samples is obtained by purposive sampling. This study uses SPSS 24 as statistical techniques. The conclusions in this study are (1) the work environment has positive effect on WLBIP, (2) WLBIP has negative effect on Intent to Turn over, (3) the work environment has negative effect on Intent to Turn over, (4) WLBIP is unable to mediate Work environment toward intent to turn over.

**Keywords** Work Environment (WE) · Work Life Balance in Islamic Perspective (WLBIP) · Intent to Turnover (ITO)

## 1 Introduction

In the late 1970s, Britain was the first country to introduce the concept of work-life balance (WLB). At that time, there were a lot of workers who only focused on working to live and fulfill their personal and family needs. Then gradually, they were starting to realize the importance of having a balance between work and personal life. In 1986, the WLB concept finally developed and expanded in the United States even though has different definitions and concepts but has the same meaning (Kalliath and Brough 2008; Ramya 2014; Poulouse and Sudarsan. 2014). Prakash (2018) emphasizes that

---

M. Muafi (✉)

Department of Management, Business and Economics Faculty, Universitas Islam Indonesia, Yogyakarta, Indonesia  
e-mail: [muafi@uii.ac.id](mailto:muafi@uii.ac.id)

Y. Siswanti

Department of Management, Economics and Business Faculty, Universitas Pembangunan Nasional Veteran Yogyakarta, Yogyakarta, Indonesia

W. Syafri

Department of Management, Institut Pemerintah Dalam Negeri, Jatinangor, Indonesia

WLB is a worker who conditions himself in balancing between work and personal life including family and recreational life. A worker who does not have positive WLB will have negative impact on the resulting performance (Singh and Khanna 2011). It will also have an impact on other behaviors such as role conflict (Wiley et al. 2007), employee creativity (Ong and Jeyaraj 2014), and intent to turn over (Nurdin and Rohaeni 2020; Hafid and Prasetyo 2017; Suifan et al. 2016). In the Islamic view, a person living in the world should not only focus on world life such as work, family, and other aspects but also be oriented to the afterlife, so that the concept of WLB is also important from an Islamic view or WLBIP (Work Life Balance in Islamic Perspective) (Muafi et al. 2021; Muafi 2021, 2021b). The new concept of WLB from an Islamic perspective is important to be studied because previous studies only focus on WLB in the work balance in the world without ever thinking about WLB conditions that must also be linked to the afterlife orientation. Besides that, there is no WLBIP concept that links with the work environment and intent to turn over. Work environment and intent to turnover have been critical problems for years in organizations both profit-oriented and social organizations (Qureshi et al. 2013; Chen et al. 2011; Chandrasekar 2011).

This study is conducted on Y generation employees of a state-owned enterprises in Indonesia which is engaged in airline management. During and after the Covid 19 pandemic, employees are asked to continue provide good performance, especially from the service aspect to customers. Even though they work in SMEs, they are worried that they have a high intention to turn over because they face uncertain problems, especially in the post-Covid 19 pandemic. The number of airline passengers has also decreased and transactions with company partners have also decreased. These have an impact on the existence of employees who work in situations and conditions of the not normal work environment. It is feared that this problem could have an impact on WLBIP so that it can further increase the intent to turn over. Moreover, this Y generation is known as a generation that has high expertise in the information technology aspect and tends to be brave enough to accept big challenges and risks. Likewise, the opportunities to work outside the company are also numerous and varied. Therefore, this study fills a research gap that has never been researched by testing and analyzing the work environment as an antecedent and consequence of WLBIP, namely the intent to turn over employees of the millennial Generation in Indonesia.

## 2 Objective and structure of research

This main purpose of this study is to test and analyze the work environment as an antecedent and intent to turn over as a consequence of the Work Life Balance in Islamic Perspective (WLBIP).

This study is divided in three main parts, namely:

- Introduction, which includes the research object, current empirical of generation Y employees at a state-owned enterprise in Surakarta, Indonesia.
- Literature Review and Methods, which includes the theory of the WLBIP, work environment, and intent to turn over as well as the hypothesis that is examined.
- Analysis of results, discussion, implication, limitations and future study.

### 3 Literature Review

#### 3.1 *Work Life Balance in Islamic Perspectives: Antecedents and Consequence*

WLB is a strategic issue in both business and social oriented organizations. Human life will never be separated from WLB. It is usually experienced by every employee either at the staff level or leadership level because employees are faced with different environmental contingencies so that it is very difficult to own and implement WLB properly. WLB is an individual's ability to fulfill work and commitment to family as well as employee responsibilities in other non-jobs (Delecta 2011).

Greenhaus et al. (2003) is better known as one of the scientists who introduced WLB by using 3 indicators: (1) time balance, (2) involvement balance, and (3) satisfaction balance. All of these indicators have positive and negative consequences depending on the success or failure of employees in managing WLB. When you have balanced WLB in terms of time, involvement, or satisfaction, employees would be able to have a positive impact on the behavior outcome. Conversely, when employees have unbalanced WLB, there was a tendency to have a negative behavior outcome.

Islam has taught that the balance of life should not only think about worldly aspects, especially spends time activities, work involvement, and job satisfaction with the orientation of self-actualization in the world. Islam also teaches to think about the hereafter life. So in implementing WLB, it is also necessary to consider time, work involvement, and satisfaction which is oriented towards the afterlife. This refers to the Al-Quran and Al Hadith which teach correct and good guidelines in the balance of life in this world and the hereafter. Muafi et al. (Muafi et al. 2021; Muafi 2021, 2021b) has successfully researched and developed the WLBIP concept by considering three indicators, namely; (1) time balance in Islamic perspective / TBIP; (2) involvement balance in Islamic perspective / IBIP and (3) satisfaction balance in Islamic perspective / SBIP. All indicators are directed so that they can lead to a balance between the world and the hereafter.

In some literature, the determinants of WLB are divided into several causes, namely: individual, family, work and organization, and social environment. Likewise, the consequences of WLB can occur at level of individuals, families, and organizations (Delecta 2011; St-Jean and Duhamel 2020; Jaharuddin and Zainol 2019), including the social environment (St-Jean and Duhamel 2020; Jaharuddin and Zainol 2019).

Indeed, companies are faced with very difficult conditions in retaining employees who have good talents, especially for generation Y employees. Generation Y employees have unique strong and dominant characteristics, especially courage to face risks and varied job opportunities. Generation Y also doing entrepreneurship outside of an attractive company, oriented towards performance achievement, multitasking, and flexible (Jindal and Nalluri 2019; Qisthy et al. 2018). Sa'aban et al. (Sa'aban, S., et al. 2013) conclude that generation Y has characteristics, such as flexible, multitasking, and love teamwork. This will undoubtedly have an impact on their demands on a dynamic and conducive work environment and their intention to survive or leave the organization.

With regards to the work environment, (Heizer and Render 2004) state that the work environment is a physical environment where employees work affects performance, safety, and work life quality. Companies should be able to create a conducive work environment so that they can provide a sense of security and comfort so that employees can work optimally, especially Generation Y employees. When employees feel safe and comfortable with their work environment, employees will be more motivated to excel because they will use working time effectively and efficiently (Chandrasekar 2011).

Sedarmayanti (2009) adds that in general, the type of work environment is divided into two, namely physical and non-physical work environments. The physical work environment is related to all physical conditions that exist around the workplace. Meanwhile, the non-physical work environment includes working relationships between employees and other employees or between employees and leaders who are fostered in the company. When a person conducting activities, he needs help from others and may not be able to do it alone. Likewise, it will be related to work methods and work arrangements, both individual and group. Qureshi et al. (Qureshi et al. 2013; Kurniawaty et al. 2019) examine that the work environment can be one of the causes of intent to turn over. Their study result concludes that the work environment is negatively related to intent to turn over. The more conducive the work environment the company has, the more it will be able to reduce the intent to turn over. Whereas Bibi et al. (2016) find that employees who have a conducive work environment tend to stay in the organization. The work environment has function to moderate the relationship between compensation and employee retention. Likewise, it can moderate the relationship between job security and employee retention. This result is supported by AlBattat and Som (2013) that employees tend to remain in the organization when they have a good work environment. Employees will be challenged to complete work according to their workload. On the other hand, companies are challenged to be able to create a conducive work environment so that employees work in accordance with the set performance targets.

Therefore, companies must have a good strategy in order to minimize and reduce employee turnover. Branham (Branham 2012; Dessler 1997) states that intent to turnover is the tendency for employees to have attitudes to look for new jobs elsewhere. Employees can volunteer or move from one workplace to another according to their own choice (Mobley 1982; Robbins and Judge 2015). If the turnover that occurs in the company is high, it would have a bad impact on the organization (Zhang

and Feng 2011). Likewise, several studies conclude that WLB increases job engagement (Jaharuddin and Zainol 2019) and reduces turn over intention (Suifan et al. 2016; Jaharuddin and Zainol 2019), especially in Indonesia (Nurdin and Rohaeni 2020; Hafid and Prasetio 2017).

*H1. Work environment positively affect WLBIP.*

*H2. WLBIP negatively affect the intent to turn over.*

*H3. Work environment negatively affect the intent to turn over.*

*H4. WLBIP is able to mediate the work environment towards intent to turn over.*

## 4 Research Method

This study uses positivism approach. The aim of this study is analyze the causality relationship with a value-free basis (Ahnad and Lutz 1989). Researchers use a survey by giving a questionnaire and staying focused on variables related to the conditions of the empirical issue under study (Ahnad and Lutz 1989; Simonson et al. 2001). The scale technique uses a Likert scale with choice of answers from 5 (strongly agree) to 1 (strongly disagree). The population is all generation Y employees who work at a state-owned enterprise that manages airports in Surakarta, Central Java by purposive sampling. The criteria are employees: (1) who have minimum last education of diploma, (2) have worked for at least 1 year, (3) have age at least 20 years old and (4) are Muslim. This study has 43 respondents and uses stepwise regression with SPSS 24 (Hair et al. 2014; Baron and Kenny 1986). The source of the questionnaire is successively referring to;

1. The work environment (WE) has 5 items and is sourced from Qureshi et al. (Qureshi et al. 2013; Kurniawaty et al. 2019).
2. WLBIP has a total of 30 items and is sourced from Muafi (2021); Muafi (2021b), 18] with three indicators: (a) Time balance in Islamic Perspectives (TBIP), (b) Involvement balance in Islamic perspective / IBIP, and (3) Satisfaction balance in Islamic perspective) / SBIP.
3. Intent to turn over (ITO) has 3 indicators and is sourced from Mobley (Jaharuddin and Zainol 2019; Mobley 1982; Robbins and Judge 2015).

After testing all indicators and items, the standardized loading factor value is > 0.5 so it is valid.



**Table 1** Respondent’s characteristics

Classification	Sub classification	Number of respondents	Percentage
Gender	Female	18	41,86%
	Male	25	58,14%
Age	20–25 years old	1	2,32%
	26–30 years old	12	27,90%
	31–35 years old	18	41,86%
	36–40 years old	13	30,21%
Educational level	Diploma	8	18,60%
	Bachelor degree	30	69,77%
	Master degree	5	11,63%
Length of work	< 5 years	7	16,28%
	≥ 5 years	36	83,72%
Religion	Islam	43	100%
	Total	43	100%

## 5 Results and discussion

### 5.1 Respondents’ Characteristics

The majority of respondents are consecutively: male (58.14%.); have age range of 31–35 years (41.86%); the latest education is bachelor degree (69.77%); have working for ≥ 5 years (83.72%); have religion of Muslim (100%). More clearly can be seen in Table 1.

### 5.2 Hypothesis Test

The results of statistical testing can be seen in Table 2.

Table 2 provides the finding, namely;

1. The Work Environment (WE) has significant positive effect on the Work Life Balance in Islamic Perspective (WLBIP).

This means that the more positive the work environment the company has, the more it can increase WLBIP.

**Table 2** Significance test results

The relationship between variables	Beta	t	Sign	Description
WE → WLBIP	0.309	2.080	0.044*	H1. accepted
WLBIP → ITO	-0.300	-2.988	0.005*	H2. accepted
WE → ITO	-0.651	+6.477	0.000*	H3. accepted

\*Note: \*sign = Significant  $< \alpha$  0.05

2. Work Life Balance in Islamic Perspective (WLBIP) has significant negative effect on Intent to Turnover (ITO).

This means that the more positive the employees' WLBIP is, the more they can reduce the Intent to quit.

3. Work Environment (WE) has significant negative effect on Intent to Turnover (ITO). This means that the more positive the work environment the company has, the more it can reduce the Intent to Turnover (ITO).

Furthermore, Sobel Test is used to test the 4th hypothesis. The variable has a mediating effect when the resultant sobel test (t count) is greater than t table. The results of the Sobel test calculation show that the tcount value is 1.6408 or smaller than the t table value of 2.0180 so that WLBIP does not mediate the effect of the Work Environment (WE) on Intent to Turnover (ITO) (H4 is rejected).

### 5.3 Discussion and Implication

The results prove that the work environment could positively affect WLBIP (H1 accepted). This means that individually, the work environment is perceived to improve WLBIP. This supports studies and theories which state that the situation and conditions of the work environment have a positive impact on WLB (Delecta 2011; St-Jean and Duhamel 2020; Jaharuddin and Zainol 2019), including the social environment (St-Jean and Duhamel 2020; Jaharuddin and Zainol 2019). In the current Y generation, it is closely related to technological aspects including: Native streaming behavior which is increasingly popular, spending time in front of mobile device screens three hours a day, and relying on social media as a place to get information (Republika 2021; Kementerian Pemberdayaan Perempuan dan Perlindungan Anak 2018; Fasa 2018). They are more willing to face risks, tend to compete with good achievements, multi-tasking, and more flexible (Jindal and Nalluri 2019; Qisthy et al. 2018). This illustration provide advice for companies to pay attention with work environment that is adapted to the portrait of Y generation.

This is important in improving WLBIP, especially the time balance aspects in Islamic Perspectives (TBIP), Involvement balance in Islamic perspective / IBIP, and Satisfaction balance in Islamic perspective) / SBIP. Y generation really needs to pay attention for these three aspects. From the time aspect, it is necessary to work

by balancing time properly and cleanly in fulfilling its obligations as an employee, family, and personal needs. Y generation employees need to be serious, professional, and total in deepening their profession so that they have perfect involvement. Likewise, job satisfaction must be oriented towards spiritual job satisfaction (ruhiyyah/rabbaniyah), intellectual job satisfaction ('aqliyyah), social work satisfaction (nafsiyyah), and material job satisfaction (jasadiyyah / maddiyah) (Muafi et al. 2021; Febriani et al. 2019; Fasa 2018). When this condition occurs, the work environment will also reduce the intent to turn over. This supports the third hypothesis (H3 is accepted). This means supporting (Qureshi et al. 2013; Kurniawaty et al. 2019; Bibi et al. 2016; AlBattat and Som 2013). Employees will feel at home in the organization and have no intention of turning over.

Subsequent findings prove that WLBIP can reduce intent to turn over so that Hypothesis 2 is accepted. This supports (Suifan et al. 2016; Jaharuddin and Zainol 2019), especially in Indonesia (Nurdin and Rohaeni 2020; Hafid and Prasetyo 2017; Suifan et al. 2016) also prove that WLBIP can improve employee performance. This means Y generation employees at airline industry have realized the importance of having WLBIP. Work must not only be oriented towards the world pleasures but must also think about the hereafter. When you can work productively and sincerely, it is believed that it can become charity field and you will get rewards that you will reap in the hereafter. These findings prove that WLBIP is unable to mediate the effect of the work environment and intent to turn over (Hypothesis 4 is rejected). This indicates that companies need to consider other aspects of WLBIP which can then be used as a guide for companies to make policies and strategies related to reducing intent to turn over and managing a work environment that is conducive, dynamic, and suitable for Y generation.

#### ***5.4 Limitations and Recommendations for Future Study***

This study has limitations, namely:

1. The sample in this study is relatively small. Future study is necessary to add samples and expand by researching employees working in manufacturing company.
2. This study only analyzes the work environment as an antecedent and consequence of WLBIP, namely the intent to turn over. Whereas there are many antecedents from WLBIP also need to be considered such as perceived organizational support (Marfuatun and Muafi 2021), work life conflicts (Sar et al. 2017), social support (Murphy et al. 2007) and others.
3. Consequences of WLBIP that can be considered include pride in the organization (Isse et al. 2018), organizational commitment (Oyewobi et al. 2019), job engagement (Jaharuddin and Zainol 2019), the intention to start a new job (St-Jean and Duhamel 2020), work stress (Mendis and Weerakkody 2017) and creativity (Ong and Jeyaraj 2014).

## References

- Kalliath, T., Brough, P.: Work-life balance: a review of the meaning of the balance construct. *J. Manage. Dan Organ.* **14**(3), 323–327 (2008)
- Ramya, R.: Work life balance strategies of woman.. *Int. J. Res. Develop. Manage. Rev. ISSN. 2319-5479*, 21–26 (2014)
- Poulose, S., Sudarsan, N.: Work life balance: a conceptual review. *Int. J. Adv. Manage. Econ.* **3**(2), 1–7 (2014)
- Prakash, V.: Work-life balance: perceptions of the non-work domain. *IIM Kozhikode Soc. Manage. Rev.* **7**(2), 97–108 (2018)
- Singh, P., Khanna, P.: Work life balance: a tool for increased employee productivity and retention. *Lachoo Manag. J.* **2**(2), 188–206 (2011)
- Wiley, A.R., Branscomb, K., Wang, Y.Z.: Intentional harmony in the lives of working parents: program development and evaluation. *Fam. Relat.* **56**, 318–328 (2007)
- Ong, H.L.C., Jeyaraj, S.: Work-Life Interventions: Differences Between Work-Life Balance and Work-Life Harmony and Its Impact on Creativity at Work. *SAGE Open* **4**(3), 2158244014544289 (2014)
- Nurdin, S., Rohaeni, H.: Work-life balance and its impact on turnover intention in the millennium: the mediation role of job satisfaction. *Jurnal Konsep Bisnis Dan Manajemen* **6**(2), 121–132 (2020)
- Hafid, M., Prasetyo, A.P.: The influence of work-life balance on turnover intention (a study on employees of food & beverage division of hotel Indonesia Kempinski Jakarta), SMART –study and management research. *XIV* **3**, 52–61 (2017)
- Suifan, T.S., Ayman, J., Abdallah, B.: The influence of work life balance on turnover intention in private hospitals: the mediating role of work life conflict. *Eur. J. Bus. Manage.* **8**(20), 126–139 (2016)
- Muafi, M., Siswanti, Y., Anwar, M.Z.: Work life balance in Islamic perspective(WLBIP) and its impact on organizational citizenship behavior in islamic perspective(OCBIP) and service performance. *Int. J. Res. Bus. Soc. Sci.* **10**(3), 223–230 (2021)
- Muafi, M.: Investigating the dimensionality of work life balance in islamic perspective (WLBIP): an insight from Indonesia. *J. Islamic Bus. Manage.* **11**(01), 198–216 (2021)
- Muafi, M.: Work Life Balance In Islamic Perspective (WLBIP) questionnaire, Copyright Document, No. 000247018, April 15, Kementerian Hukum dan Hak Asasi Manusia, Republik Indonesia (2021)
- Qureshi, M.I., Iftikhar, M., Abbas, S.G., Hassan, U., Khan, K., Zaman, K.: Relationship between job stress, workload, environment and employees turnover intentions: What we know, what should we know. *World Appl. Sci. J.* **23**(6), 764–770 (2013)
- Chen, M.F., Lin, C.P., Lien, G.Y.: Modelling job stress as a mediating role in predicting turnover intention. *Serv. Ind. J.* **31**(8), 1327–1345 (2011)
- Chandrasekar, K.: Workplace environment and its impact on organisational performance in public sector organisations. *Int. J. Enterprise Comput. Bus. Syst.* **1**(1), 1–19 (2011)
- Delecta, P.: Work life balance. *Int. J. Current Res.* **33**(4), 186–189 (2011)
- Greenhaus, J.H., Collins, K.M., Shaw, J.D.: The relation between work-family balance and quality of life. *J. Vocat. Behav.* **63**, 510–531 (2003)
- St-Jean, É., Duhamel, M.: Employee work-life balance and work satisfaction: an empirical study of entrepreneurial career transition and intention across 70 different economies, *Academia Revista Latinoamericana de Administración*, 33, 3/4, 321–335 (2020)
- Jaharuddin, N.S., Zainol, L.N.: The impact of work-life balance on job engagement and turnover intention. *South East Asian J. Manage.* **13**(1), 106–118 (2019)
- Jindal, P., Nalluri, P.: The motivational preferences of gen y: an empirical study on recent changes in motivation of gen. *Gavesana J. Manage.* **11**(1), 52–61 (2019)
- Qisthy, I.A., Musadieg, M.A., Sulisty, M.C.W.: The influence of organizational culture and job satisfaction of generation y on organizational citizenship behavior (a study of generation y

- employees of PT BPR Tunas Artha Jaya Abadi headquarters). *Jurnal Administrasi Bisnis (JAB)* **58**(1), 219–228 (2018)
- Sa'aban, S., Ismail, N., Mansor, M.F.: A study on generation y behavior at workplace. In: *International Conference on Business Innovation, Entrepreneurship and Engineering*, pp. 549–554 (2013)
- Heizer, J., Render, B.: *Operations Management*, 7th Edition. Pearson Education. Inc., Upper Saddle River, New Jersey (2004)
- Sedarmayanti: *Human resources Management and Work Productivity*. Bandung: Mandar Maju (2009)
- Kurniawaty, K., Ramly, M., Ramlawati, R.: The effect of work environment, stress, and job satisfaction on employee turnover intention. *Manage. Sci. Lett.* **9**(6), 877–886 (2019)
- Bibi, P., Ahmad, A., Majid, A.H.A.: The moderating role of work environment on the relationship between compensation. *Job Secur., Empl. Retention, Int. J. Econ. Perspect.* **10**(4), 726–738 (2016)
- AlBattat, A.R.S., Som, A.P.: Employee dissatisfaction and turnover crises in the Malaysian hospitality industry. *Int. J. Bus. Manage.* **8**(5), 62–71 (2013)
- Branham, L.: *The 7 Hidden Reasons Employees Leave: How to Recognize The Subtle Signs and Act Before It's Too Late*, 2nd edn. AMACOM, New York (2012)
- Dessler, G.: *Human Resources Manajemen*. Jakarta: PT. Prenhallindo (1997)
- Mobley, W.H.: *Employee Turnover, Causes, Consequences, and Control*. Addison-Wesley (1982)
- Robbins, S.P., Judge, T.A.: *Organizational Behavior* Jakarta: Salemba Empat (2015)
- Zhang, Y., Feng, X.: The relationship between job satisfaction, burnout, and turnover intention among physicians from urban state-owned medical institutions in hubei, China: a cross-sectional study. *Bmchealth Serv. Res.* **11**, 235–245 (2011)
- Ahnad, Y.J., Lutz, E.: Environmental accounting for sustainable development. In: *The World Bank Symposium/The World Bank –1989–118 p* (1989)
- Simonson, I., Carmon, Z., Dhar, R., Drolet, A., Nowlis, S.M.: Consumer research: in search of identity. *Annu. Rev. Psychol.* **52**(1), 249–275 (2001)
- Hair Jr, J.F., Sarstedt, M., Hopkins, L., Kuppelwieser, V.G.: Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. *European business review*.
- Baron, R.M., Kenny, D.A.: The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *J. Pers. Soc. Psychol.* **51**, 1173–1182 (1986)
- Republika (2021). <https://www.republika.co.id/berita/koran/inovasi/16/12/26/ois64613-mengenal-generasi-millennial>, Accessed 11 May 2021
- Kementerian Pemberdayaan Perempuan dan Perlindungan Anak. *Thematic Gender Statistics: Profile of Indonesian Millennial Generation*, Ministry of Women Empowerment and Child Protection (2018)
- Febriani, R., Asfiah, N., Nurhasanah, S.: The implementation of Islamic values and its relevance with the improvement of employee job commitment. *FALAH, J. Ekonomi Syariah* **4**(1), 21–31 (2019)
- Fasa, M.I.: *A Development Model of Islamic Value-Based Employee Organizational Citizenship Behavior (OCB)*, Dissertation, UIN Sunan Kalijaga, Yogyakarta (2018)
- Marfuatun, M., Muafi, M.: Perceived organizational support and psychological empowerment on service performance mediated by organizational citizenship behavior Islamic perspective (OCBIP). *Int. J. Res. Bus. Soc. Sci.* (2147- 4478), **10**(1), 15–27 (2021)
- Sar, S., Mohanty, A.K., Dash, M.: An Empirical Study on Critical Issues of Work Life Balance: A Study of IT Sector. *Int. J. Econ. Res.* **14**(14), 275–284 (2017)
- Murphy, W.M., Berry, K.W., Gordon, J.R.: The relationship of social support to the work-family balance and work outcomes of midlife women. *Women Manage. Rev.* **22**(2), 86–111 (2007)
- Isse, H., Abdirahman, H., Najeemdeen, I.S., Abidemi, T., Ahmad, R.B.: The relationship between job satisfaction, work-life balance and organizational commitment on employee performance, academic. *J. Econ. Stud.* **4**(3), 12–17 (2018)

- Oyewobi, L.O., Oke, A.E., Adeneye, T.D., Jimoh, R.A.: Influence of organizational commitment on work–life balance and organizational performance of female construction professionals. *Eng. Constr. Archit. Manag.* **9**(3), 1–22 (2019)
- Mendis, M.D.V.S., Weerakkody, W.A.S.: The impact of work life balance on employee performance with reference to telecommunication industry in Sri Lanka: a mediation model. *Kelaniya J. Hum. Res. Manage.* **12**(1), 72–100 (2017)

# A Qualitative Approach to Develop an Assessment Instrument for Homestay Operators' Environmental Behaviour



Nur Farihin Abd Hadi Khan , Yuhanis Abdul Aziz ,  
Azmaawani Abd Rahman , Rusmawati Said ,  
and Nik Madeeha Nik Mohd Munir

**Abstract** This study elucidates the early stages of developing an assessment instrument, projected to get Homestay coordinators' feedback related to their members' behaviour of environmental practices. Nine informants participated in a voluntary semi-structured interview, conducted at different Homestay settings around Malaysia. A five-item semi-structured interview guide was used to record their perception, pursuant their personal experience. Thematic analysis with codes was implemented to categorise the responses. Later, 25 questions were included in the preliminary assessment instrument and identified as the Homestay operators' Environmental Behaviour Assessment Instrument (EBAI). However, the EBAI needs additional research for it to be considered consistent and effective. Nevertheless, the qualitative approach implied to develop the assessment may be beneficial specifically to Homestay researchers and practitioners.

**Keywords** Homestay · Environmental behaviour · Hospitality · Thematic analysis

## 1 Introduction

A destination's natural environment and countless rural spots such as waterfall or beaches were initially the centres of attraction in promoting the tourism industry, before introducing urban and human made attractions as part of interests in the 1990s (Hassan and Nezakati 2014). As one of the tourists pulling factors to rural location, Homestay is regarded as a substitute family furnished accommodation. The Homestay programme has been organised by local societies and has an idiosyncratic identity among other accommodation providers (Bojei et al. 2017; Jamal et al. 2018). It is categorised as an exclusive form of Community Based Tourism product (CBT) (Ibrahim and Rashid 2010; Ismail et al. 2016). In Malaysia, Homestay houses

---

N. F. A. H. Khan (✉) · N. M. N. M. Munir  
Universiti Malaysia Kelantan, Kota Bharu, Malaysia  
e-mail: [farihin.ah@umk.edu.my](mailto:farihin.ah@umk.edu.my)

N. F. A. H. Khan · Y. A. Aziz · A. A. Rahman · R. Said  
Universiti Putra Malaysia, Seri Kembangan, Malaysia

**Table 1** Domestic and international tourist arrival to Malaysia Homestay

Details	2014	2015	2016	2017	2018	2019	2020
Total of tourist arrival	367, 472	391, 225	410, 522	382, 961	372,475	458,899	134,017

Sources Adapted from (Homestay Unit 2020)

are compulsory to be registered under Ministry of Tourism and Culture Malaysia (MOTAC), by now recognised as one of the attractive accommodation products that generates income to the tourism and hospitality industry. According to yearly report made by Homestay Unit within the Department of Industry Development MOTAC (Homestay Unit 2020), there was an increase in tourist demand to stay at Homestay within 2014 to 2016 (see Table 1), indicating that the business is acknowledged an alternative type of accommodation at rural areas. It has become one of the income generators to the tourism and hospitality industry among other accommodation businesses (Homestay Unit 2020). However, the number drastically declined in the year 2020, perhaps due to the pandemic Covid-19 that is happening around the world. The situation has caused withdrawal of pre-planned trips and directed to a huge reduction in the number of tourist arrival to Malaysia (Foo et al. 2020).

Generally, the Homestay owners are obligated to provide clean and organised accommodation up to tourist standards. However, some operators are found to be incompetent to provide clean lavatories, with limited electricity and clean water supply (Kunjuraman and Hussin 2017). In fact, the awareness in reducing waste through recycling is still low generally among Malaysian household, as reported by the Solid Waste Management and Public Cleansing Corporation (SWCorp Malaysia) (The Star Online 2017). Generally, in Malaysia, all individual and businesses, regardless of their setting or pace of development is referring to the Environmental Impact Assessment (EIA). The EIA is placed under the Environmental Quality Act (EQA) 1974, created when the industry and housing were slower compared to now (New Straits Time online 2019). It is believed that Malaysia Homestay is included as one of the businesses which need to comply to the Act. According to Section 34A, any person conducting activities without the environmental impact assessment report's approval may be penalised RM500,000, or face imprisonment for a maximum of five years or both (The Malaysian Reserve website 2020). Since there is almost inexistence of specific environmental assessment at Homestay (Khan et al. 2018) compared to established international hotels, the business is believed to be subjected to the same regulations in terms of assessing their environmental behaviour.

Meanwhile, the individual perspective on environmental management is quite different from larger organisation, where some industries came out with their own routine of environmental management practices, involves supporting the environmental related plans, implementing a specific environmental management system (EMS) and focusing on certification (Cantor et al. 2013). Although the environmental assessment at Homestay is not largely affected by the changes in regulation, it is still important for the Homestay to have an internal environmental self-assessment procedure. The internal assessment is significant for Homestay business because,



by inducing practitioners' environmental concerns and responsibility through self-assessment, it will allow the business to improve their environmental performance (Umrani et al. 2020) which may be improved from time to time, according to the changes within the business.

With increasing awareness and sensitivity towards environmental issues among public, it has induced demands on businesses become greener (Smith and Perks 2010). The number of consumers who are willing to pay for environmentally friendly products are growing, and it proves their acceptance and support towards the environmental actions (Lee et al. 2010). Consumer's consciousness about a clean environment (positively influenced by personal norms) is essentially a predictor of their positive behaviour towards green hotels (Bashir et al. 2019). The tourist willingness to pay for environmentally friendly accommodation is due to their self-reflection while witnessing the negative impact made by human on environment (Nelson et al. 2021). Regardless, the environmental practices among small-scale accommodation businesses remain lacking due to limited funds and weak internal management to conduct environmental management (Khan et al. 2018; Yusof and Jamaludin 2015). Homestay was found to be inadequate in several environmental operation and management, such as of hesitation to involve guest in environmental activities, inexistence of specific training program related to environmental practices and poor strategic environmental goal (Khan et al. 2018). As such, the objective of this study is to develop a preliminary environmental assessment instrument to assess Homestay operators' environmental behaviour using qualitative research method. The assessment instrument is needed in order to encourage Homestay operators to consistently perform environmental activities in the future. The results of this qualitative study will uniquely reflect the experiences of Homestay operators and provide understanding of their informal environmental activities. It is also to discover several environmental activities that the Homestay operators were able to control and convenient to perform (Kurisu 2016).

## 2 Homestay Programme

Homestay programme in Malaysia is defined as a form of experience where travellers live with host families who have been registered with MOTAC (Ministry of Tourism and Culture Malaysia (MOTAC) Official Website 2018). The Homestay programme was initiated by the Ministry of Culture and Tourism (currently known as MOTAC), along with other authorities such as the Ministry of Rural and Regional Development of Malaysia (Jamaludin et al. 2012). The business began its settlements at the coastal area with countryside atmosphere and experience (Salleh et al. 2014). The first Homestay programme in Malaysia began in 1988, at Desa Murni Homestay Pahang. It consists of five villages namely Desa Murni Sanggang, Desa Murni Sonsang, Desa Murni Kerdu, Desa Murni Ketam and Desa Murni Perangap (Pusiran and Xiao 2013; Salleh et al. 2014; Yusof et al. 2013). However, local participation in the Homestay programme was limited because it is substituted to chalet or resort (Ariff et al. 2015).

Eventually, the registered Homestays under the Malaysia Homestay Programme are bound to follow regulation set by the ministry. Several important criteria are to be fulfilled to operate a Homestay, which are adequate space, the safety measures of the home structure and level of quality, safety and suitability (Bhuiyan et al. 2011). The MOTAC compels a minimum of ten houses at one particular Homestay setting. At the same time, the owners need to provide at least three rooms for a traditional rural house or offers a long series of houses which are typically known as *Rumah Panjang* for Sabah and Sarawak states (Mohamad Muslim et al. 2017). Then, they are required to join basic courses organised by the Institute for Rural Advancement (INFRA) under the Ministry of Rural and Regional Development (Salleh et al. 2014). The training is necessary, to make sure that the functional aspects are not the only facet to be focused on, but emotional and experiential features also to be highlighted (Jamal et al. 2011). After years of introduction, rising interests of locals to participate in Homestay programme caused it to be acknowledged by respective authorities. As a result, the Malaysia Rural Tourism Master Plan was formulated in 2001 to endorse the programme in developing rural community (Ismail et al. 2016). At this point, the government is actively increasing the number of registered Homestays to upgrade its tourism sector (Padlee et al. 2013).

Even though the economic activity of CBT is mainly observed by researchers (Amir et al. 2015), there are also emphasises on the environmental and cultural sustainability (Amir et al. 2015; Binnui and Iamsaard 2016). The topics of ecotourism and sustainability were highlighted in the context of Homestay programme (Amin and Ibrahim 2015; Amir et al. 2015; Bhan and Singh 2014; Binnui and Iamsaard 2016; Harun et al. 2012; Hussin and Kunjuraman 2014; Kasim et al. 2016; Ramli et al. 2015; Teare et al. 2013; Tsai et al. 2014). The programme itself is treated as a platform to protect the cultural and natural heritage of a community while contributing to a unique accommodation features for tourists' enjoyment (Binnui and Iamsaard 2016). It is believed that intercultural exchanges among Homestay owners and guests may build up the culture, requiring social contact to grow (Amir et al. 2015). Nonetheless, there are several situations where previous research had highlighted the negative impacts of Homestay programme on local communities. It is related to environmental, cultural, and social intervention. It was reported that the communities had faced serious environmental degradation such as landslides, deforestation and soil erosion due to roads formation in allowing admission to public buildings and markets from the Homestay (Thapaliya et al. 2013). Regardless of the damages due to tourism development in rural areas, the communities are uncertain of how it would impact to environmental protection, including undesirable impact such as crowding, noise or water degradation (Salleh et al. 2014).

### 3 Homestay Programme

Human behaviour is complicated, and describing it is challenging. Countless efforts in inducing a behaviour had failed because of struggles in identifying the drivers

to behaviour change (Fogg 2009). Although the flow of human action is usually unintentional, there are certain activities that are commonly shaped and carried out due to submission to rules (Shove et al. 2012). One particular behaviour that people find difficult to have certainties is physical activity participation (Dzewaltowski et al. 2016), such as environmental behaviour. As for this study, it refers to actions and participation, which are harmless or cause minor destruction to the environment (Gagnon et al. 2012). The “environmentally friendly” or “green” behaviour has been familiarised to preserve and sustain the Earth and the environment (Hassan et al. 2015; Mensah 2014). Despite a wealth of term expressions in the field that describe environmental behaviour and protection, the terms are representing similar definitions. It is sometimes called as environmentally friendly practices, green approaches, green practices, best practices, green environmental attributes or sustainable practices (Han et al. 2011; Jamaludin and Yusof 2013; Kurisu 2016; Smith and Perks 2010; Sustainable Business Associates 2008; Yusof and Jamaludin 2015). These terms are referring more or less to the same concept although with differing emphasis. It contributes to positive economic, social, cultural, and environmental impacts by grasping managerial tactics such as planning, management, product development and marketing (Gagnon et al. 2012; Han et al. 2011; Hussin and Kunjuraman 2014).

In Malaysia, the environmental related subjects are not new. The concept of environmental behaviour has begun earlier and has been focused in 1997 after the economic crisis (Jamaludin and Yusof 2013). Environmental management in Malaysia commenced with enacting the Environmental Quality Act of 1974 (Abdullah 1995). While for hotel industry, six checklists within the environmental domain of best environmental practices guide are dedicated to specific areas such as water, energy, waste, purchasing policy, logistics, noise, air quality and landscape integration (Sustainable Business Associates 2008). With a good image of environmental behaviour, an establishment could reduce operating costs, become appealing to stakeholders, boost employee morale, and achieve financial success (Han et al. 2011). However, it was reported that the hotel industry reacted to environmental issues only because of governmental requirements or aiming for direct financial rewards (e.g., energy and waste management). It is seen that the practitioners of environmental practice are subjected to pressures in implementing the behaviour, for example in order to meet the documenting requirement (Betts et al. 2018).

## **4 Homestay Programme**

### ***4.1 Population and sampling***

Population signifies the complete set of cases or group members to be approach for a particular study (Saunders et al. 2016), while unit of analysis is the individual in which information were collected from Sekaran (2003). When selecting participants, data collection method should be purposefully conducted on those with different

perspectives related to the topic of study (Yin 2016). By referring to the predetermined regional sampling frame (see Table 2) (Homestay Unit 2020), the unit of analysis is Homestay coordinators because they act as leaders and responsible as person in charge of Homestay supervision. In phenomenological studies, it is recommended to reach at least six informants (Morse 2000), or between five and 25 informants (Creswell and Clark 2007).

The potential participants were randomly selected according to MOTAC registration list. Further selection of informants is based on purposive sampling until data is saturated. The coordinators were purposely approached according to their registration status and location of Homestay. The reason to look into their registration status of the Homestay is because, it came with a critical agenda to intensify Homestay activities, as well as commercialisation. At the same time, their participation was also depending on the certain conditions such as:

- a) Informants who are able to reflect on the topic and express themselves better than others based on their length of service as Homestay coordinators.
- b) Participants who are willing to spend more time for the interview session with less distraction, while being coherent, have more experience in the topic, or be more willing to share these experiences with the researcher.

The researcher strictly adhered to the criteria being considered, to ensure the relevancy and suitability of selected participants with the research topics, aims, procedures, risks and benefits. Thus, targeted informants were considered to have the right expertise and experiences in the research setting and context. Relevant and rich information was expected from these group of Homestay coordinators.

**Table 2** Homestay regional sampling frame (Homestay Unit 2020)

No.	States	No. of registered homestay coordinators	Regions
1	Perak	42	Northern
2	Penang		
3	Kedah		
4	Perlis		
5	Selangor	16	Central
6	Johor	49	Southern
7	Negeri Sembilan		
8	Melaka		
9	Pahang	35	East Coast
10	Terengganu		
11	Kelantan		
12	Sarawak	77	East Malaysia
13	Sabah		
14	Labuan		
Total		219	

## 4.2 Interview Guide and Data Collection Procedure

A draft of interview guide with five questions was first developed based on previous literatures. Initially, face validity is assured by pre-testing the draft using non-participant individuals. It is to make sure whether the instrument appears to make sense in collecting the data (Holden 2010). Therefore, several academic and field experts were approached for pre-testing purposes (See Table 3). The individuals selected were found to be fit to the selection criteria, such as a professional by familiarity, proficiency, practise, training, education, and able to attest a professional judgement (Mohammed 2019).

Next, to reduce the threats of internal validity, the main contents were maintained throughout the study. For instance, items in the interview guide are always fixed to operational definition applied for this study, which is environmental behaviour. The items are basically representing an individual's actions that are harmless or cause insignificant destruction to the environment (Hafiz et al. 2015). The guiding concepts were then im-proved into an actual interview guide for the qualitative research. A finalised interview guide (see Table 4) consists of five items was adapted to ensure that the questions were adjusted to fit the circumstances.

Aside from the interview guide, a set of demographic and profiling questions were also prepared, such as gender, age, Homestay location and duration of operation. The interview sessions were held at various places, as chosen by the informants. They were assured that all information was treated as confidential and anonymous, and their opinions on the context must truly reflect their experience in handling the Homestay programme. In terms of language selection during interviews, the researchers had used local language which is Malay language, based on consultation with expertise in relevant topic areas. Different cultural values are expected to occur even when both interviewer and the interviewee are speaking of the same language (Qu and Dumay 2011). However, if it is done carefully, a well-planned interview method can provide a rich set of data. Each session took approximately 45 min to one hour, depending on

**Table 3** Information of expert reviewers

Reviewers	Designation	Organisation	Expertise
Reviewer A	University Lecturer	Universiti Malaysia Kelantan	Qualitative studies, economics, business and management, marketing and communications
Reviewer B	University Lecturer	Universiti Tunku Abdul Rahman	Behavioural studies and social media studies
Reviewer C	Homestay owner	Registered Homestay at Sarawak	Field expert (direct practitioner of Homestay programme)
Reviewer D	Homestay owner	Registered Homestay at Johor	Field expert (direct practitioner of Homestay programme)

**Table 4** Finalised semi-structured interview guide

Interview questions	Sources
1. What are the factors that make it easy for you to implement environmental practices at Homestay?	(Wu and Chen 2014)
2. In your opinion, what is your level of authority to influence your Homestay environmental decisions?	
3. What is your opinion on switching to eco-friendly brands for Homestay use?	(Maichum et al. 2016)
4. What is your planning in making a positive contribution to Homestay society through environmental practices?	
5. To what extent does your Homestay carried out operation according to the principles of environmental practices?	(Fernández-Manzanal et al. 2015)

**Table 5** Summary of data collection procedure

Actions	Descriptions
Audio recording	During the interview session, conducting audio recording allows the interviewer to focus on asking questions and listening to responses. It also eases the process of re-listening later during data analysis (Saunders et al. 2016)
Note taking	Notes were taken using pen and paper method, to prove to the interviewee that their responses are important to the study (Saunders et al. 2016). Besides it is important to highlight certain points and refer to it later during data analysis
Verbatim transcribing	The voice records were transcribed verbatim to word files

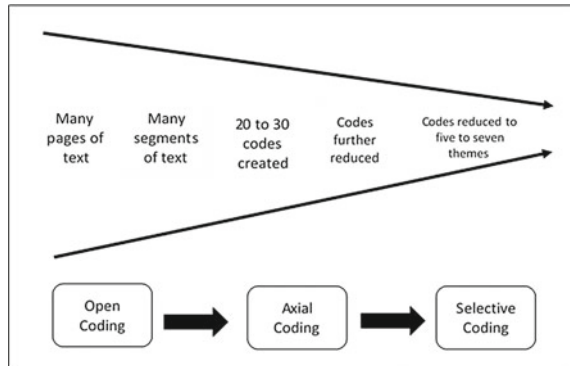
how converse the informants on the topic. Information was gathered by conducting several actions such as audio recording, note taking, and verbatim transcribing (see Table 5).

In terms of reliability, it is slightly important for qualitative research (Creswell and Clark 2007). However, to ensure trustworthiness or stability of the interview questions, the researcher did self-coding alone throughout the analysis stage (Saunders et al. 2016). It is also to avoid misinterpretation of the data while converting responses to codes.

### 4.3 Procedure of Thematic Analysis

Data analysis was done using a computer assisted qualitative data analysis software which is Atlas.ti. Basic activities were organising of word files, skimming and comparing of documents, document annotation, creating memo, as well as producing visual output. In order to reach definitive finding, three types of coding were conducted, which are open coding, axial coding and selective coding (Boeije

**Fig. 1** The overview of coding process (Boeije 2010; Creswell 2008)



2010) (see Fig. 1). Open coding is a process of dividing data into fragments (Boeije 2010), while axial coding is to integrate categories and subcategories (Boeije 2010; Scott and Medaugh 2017). Meanwhile, selective coding is done at the final stage of data analysis, to refine the subcategories (Maichum et al. 2016). The coding process is a flexible approach that can be adjusted for the need of many studies (Braun and Clarke 2006; King 2004). The overall coding procedure is identified as thematic analysis, where themes or patterns in data are categorised (Saunders et al. 2016). Thus, the process of coding started in the sequence of open coding, axial coding and selection coding.

As seen in Fig. 1, the open coding procedure is started after the first three sessions of interview, until the researcher had reached saturation.

## 5 Findings and Discussion

All gathered information was analysed using Atlas.ti software for thematic analysis. By fully utilising Atlas.ti as data analysis tool for this qualitative approach, it helps in producing a well organised and meaningful findings.

### 5.1 Informants' Characteristic and Homestay Profiling

First, a descriptive procedure was conducted to outline the informants' characteristics and backgrounds, as well as their Homestay profiling. The informants' demographic data and Homestay profile, including gender, age, Homestay location and duration of operation were entered into a spreadsheet programme. Although the informants were not proportionately drawn from each region, the interview sessions were found

**Table 6** The informants' profile

Informants profile	
Gender	
Male	7
Female	2
Age range	41 to 78 years old
Homestay profiling	
Homestay locations (based on regions)	
Central	2
Northern	5
Southern	1
East Malaysia	1
Range length of Homestay operation	2 to 23 years

fruitful. Information collected was useful for the purpose of integration and refinement of the survey instrument. Table 6 was created to summarise the profile of the final nine informants.

## 5.2 Thematic Analysis Findings

From the open coding process, broad categories were emerged and identified (See Table 7). Similar words, phrases, expressions and saying are sorted together. As such, the codes were extensively examined and adjusted along the analysis process, as to identify possible link between the themes.

Next, axial codes were created, where these data are put back together in new ways by making connections between open categories. The axial codes are systematically segmented at a more abstract level (see Fig. 2). Although it is increasingly disconnected from the data, the information is actually never completely disappearing from the depiction (Boeije 2010).

Consequently, the researcher had proceeded with the next step which is selective coding. Emphasis was put based on the meaning behind "environmental behaviour" for this study. Thus, the axial codes are believed to symbolise the informants' "action" and "participation". These judgements were illustrated as a code tree (see Fig. 3) by solely referring to the operational definition, which refers to individual's actions and participation, which are harmless or cause minor destruction to the environment.

After the last stage of thematic analysis process which is selective coding, it is now the final stage of rearranging items for the assessment instrument, based on the final selective codes which are "action and "participation". Based on the findings (see Table 7, answers to probing question for item number five), it is believed that Homestay shares several environmental related practices similar to hotel industry. Similar environmental activities including recycling, towel reuse, request of no housekeeping



**Table 7** Open coding results

Interview questions	Open codes
1. What are the factors that make it easy for you to implement environmental practices at Homestay?	<ul style="list-style-type: none"> <li>• Sufficient funding</li> <li>• Authorities' encouragement</li> <li>• Programs encouragement</li> </ul>
<i>Probed question: What do you think will happen if it is easy to conduct environmental practices at Homestay?</i>	<ul style="list-style-type: none"> <li>• Part of acculturation</li> <li>• Become education</li> <li>• As attraction</li> <li>• Raise public awareness</li> <li>• Clean environment</li> <li>• Comfortable environment</li> <li>• Healthy competition</li> </ul>
2. In your opinion, what is your level of authority to influence your Homestay environmental decisions?	<ul style="list-style-type: none"> <li>• Influential towards guests</li> <li>• Less influence in overall but only to Homestay community</li> <li>• Require more support to influence others</li> <li>• Influencing enough to control guest placement for obedient operators</li> </ul>
3. What is your opinion on switching to eco-friendly brands for Homestay use?	<ul style="list-style-type: none"> <li>• Supportive</li> <li>• Agree to any decision made by majority</li> <li>• Already have initiative</li> <li>• Personally supportive but still concern on cost of purchase</li> </ul>
<i>Probe question: Why do you want to switch?</i>	<ul style="list-style-type: none"> <li>• Affordable price</li> <li>• if it is for selling or part of Homestay product</li> <li>• Attractive to guest</li> </ul>
4. What is your planning in making a positive contribution to Homestay society through environmental practices?	<ul style="list-style-type: none"> <li>• Inclusion as guest activity</li> <li>• Landscaping plan</li> <li>• Continuous enforcement</li> <li>• Attend or organise courses</li> <li>• Empowerment through details</li> </ul>
5. To what extent does your Homestay carried out operation according to the principles of environmental practices?	<ul style="list-style-type: none"> <li>• Active in participation</li> <li>• Need improvement</li> <li>• Seems sufficient</li> </ul>
<i>Probe question: How do you implement them?</i>	<ul style="list-style-type: none"> <li>• Reduce, Reuse and Recycle (3R) program</li> <li>• Regular communal activity</li> <li>• Composting program for kitchen waste</li> <li>• Cooking oil recycling</li> <li>• Guest encouragement to save electricity and water</li> <li>• Periodically linen change</li> <li>• Non-smoking enforcement at certain areas</li> <li>• Provision of bins at home</li> <li>• Re-use of rain reservoir for watering plants</li> </ul>

Fig. 2 Axial coding results

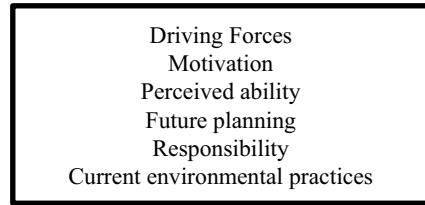
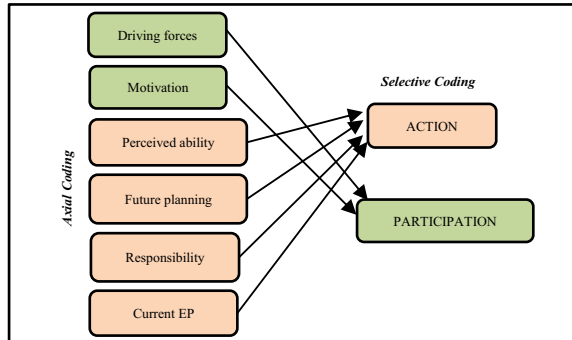


Fig. 3 The code trees



by the guests, energy saving and so forth (Lee et al. 2018). Additionally, the informants' behaviour concerning eco-labels or eco-friendly products is acknowledged because it was initiated as part of a formal practice to ensure environmental effectiveness (Font 2002). However, due to noticeable dissimilarities between Homestay and hotel industry especially in term of business scale, several items to measure Homestay operators' environmental behaviour were founded first-hand based on findings from interview session. The noticeable distinct activities are communal activity, cooking oil recycling, and re-use of rain reservoir for watering plants. This is critical finding for elaboration of the assessment instrument to make sure that it fits to the current research setting. Thus, the assessment instrument was later identified as Environmental Behaviour Assessment Instrument (EBAI), and the items for EBAI are organized in Table 8.

Aside from the organised codes, apparently the findings from semi structured interview are not limited to the code tree. There is several other information received which does not fit to the operational definition of “environmental behaviour”. Interestingly, responses such as “perceived ease to conduct environmental behaviour due to sufficient funding”, “expectation of eco-friendly product support due to affordable

**Table 8** Items reorganized for Environmental Behaviour Assessment Instrument (EBAI)

Category	Findings	Modified assessment statement
Action	Reduce, Reuse and Recycle (3R) program	1. I use refillable soap and shampoo dispenser at guest rooms
		2. I use reusable items such as cloth napkins or glass cup
		3. I provide recycle bins at my Homestay
	Guest encouragement to save electricity and water	4. I placed display or leaflets on environmental practices in guest rooms
	Periodically linen change	5. I encourage reuse of bedsheets, pillow cases, blankets and towels for multiple night's guest
	Non-smoking enforcement at certain areas	6. I enforced no smoking restriction at my Homestay to prevent cigarette butt litter
	Provision of bins at home	7. I provide adequate trash bins at my Homestay
	Re-use of rain reservoir for watering plants	8. I use water from rain reservoir for watering plants
	Supportive of eco-friendly product	9. I support purchase of eco-friendly product for Homestay use
	Agree to any decision regarding purchase of eco-friendly product made by majority	10. I agree to any decision regarding purchase of eco-friendly product
	Already have initiative to purchase of eco-friendly product	11. I already purchase eco-friendly product
	Raise public awareness	12. I promote public awareness on EP at Homestay
	Clean environment	13. I responsibly provide clean environment at my Homestay
Comfortable environment	14. I responsibly provide comfortable environment at my Homestay	
Participation	Acculturation	15. Participating in EP develop acculturation for me
	Education	16. Participating in EP provide education to me

(continued)

**Table 8** (continued)

Category	Findings	Modified assessment statement
	Attraction	17. Participating in EP provide attractiveness to my Homestay
	Healthy competition	18. I actively participate in health EP competition within my Homestay
	Regular communal activity	19. I actively participated in communal activity to protect the Homestay environment
	Composting program for kitchen waste	20. I involved with kitchen waste composting programme
	Cooking oil recycling	21. I sent used cooking oil for recycling program
	Inclusion as guest activity	22. I include EP as part of guest activity
	Landscaping plan	23. I involved with landscaping plan at Homestay
	Attend or organise courses	24. I attended or organise courses related to EP
	Empowerment through details	25. I empower on EP at Homestay with details

EP = Environmental Practices

price”, as well as “intention to use eco-friendly product if it is for selling” has divert the direction of this current study towards determining pull factors in conducting environmental behaviour. As such, it is necessary to provide recommendation for future research and for practicality of implementing environmental behaviour at Homestay setting.

## 6 Conclusion

Based on the findings from sequential coding procedures, relevant items were drawn and developed for EBAI. The EBAI consists of two main categories which are “actions” and “participation”. Each category further elaborated by 14 and 11 items respectively. The items of EBAI are believed to be beneficial in assessing environmental behaviour of Homestay operators. Although it is still in the early stage of development; yet it may be relevant for future Homestay researchers, to begin the process of constructing a more comprehensive environmental assessment instrument that uniquely suited to Homestay setting. Besides that, even though this study was set out with the aim of exploring Homestay operators’ environmental behaviour, there are unanticipated findings that is pull factors toward environmental behaviour.

Therefore, it is required to be explored in future research. This is critical to the operators, and these elements play an important role in finding ways to encourage them to implement environmental activities at Homestay setting. It might also increase the willingness level of conducting environmental activities among Homestay operators.

As such, the aim to develop the assessment instrument for Homestay operator's environmental behaviour has been achieved. In conclusion, the outcome of this research finding suggested that, to date, the Homestay operators had conducted environmental behaviour informally, even without proper assessment. Thus, this study provided useful information for the future researchers or policy makers to investigate further details regarding the assessment instrument and potential elements that will promote consistency and standardisation of environmental behaviour among Homestay operators.

## References

- Abdullah, A.R.: Environmental pollution in Malaysia: trends and prospects. *Trends Anal. Chem.* **14**(5), 191–198 (1995). [https://doi.org/10.1016/0165-9936\(95\)91369-4](https://doi.org/10.1016/0165-9936(95)91369-4)
- Amin, A., Ibrahim, Y.: Model of sustainable community participation in homestay program. *Mediterr. J. Soc. Sci.* **6**(3), 539–545 (2015). <https://doi.org/10.5901/mjss.2015.v6n3s2p539>
- Amir, A.F., Ghapar, A.A., Jamal, S.A., Ahmad, K.N.: Sustainable tourism development: a study on community resilience for rural tourism in Malaysia. *Procedia Soc. Behav. Sci.* **168**(116–122), 116–122 (2015). <https://doi.org/10.1016/j.sbspro.2014.10.217>
- Ariff, N., Md. Yassin, A., Masram, H.: Motivation towards homestay entrepreneurs: case study in State of Johor. In: 21st Pacific RIM Real Estate Society (PRRES 2015) Conference, 18–21 January 2015 (2015)
- Barriball, K.L., While, A.: Collecting data using a semi-structured interview: a discussion paper. *J. Adv. Nurs. Inst. Subscr.* **19**(2), 328–335 (1994)
- Bashir, S., Khwaja, M.G., Turi, J.A., Toheed, H.: Extension of planned behavioral theory to consumer behaviors in green hotel. *Heliyon* **5**(12), e02974 (2019)
- Betts, T.K., Super, J.F., North, J.: Exploring the influence of institutional pressures and production capability on the environmental practices - environmental performance relationship in advanced and developing economies. *J. Clean. Prod.* **187**, 1082–1093 (2018). <https://doi.org/10.1016/j.jclepro.2018.03.186>
- Bhan, S., Singh, L.: Homestay tourism in India: opportunities and challenges. *African J. Hosp. Tour. Leis.* **3**(2), 1–8 (2014)
- Bhuiyan, M.A.H., Siwar, C., Ismail, S.M., Islam, R.: The role of home stay for ecotourism development in East Coast Economic Region. *Am. J. Appl. Sci.* **8**(6), 540–546 (2011). <https://doi.org/10.3844/ajassp.2011.540.546>
- Binnui, A., Iamsaard, N.: Towards sustainable community- based tourism : a case of homestay in Suratthani Province, Thailand. In: The IRES 27th International Conference, pp. 9–14 (2016)
- Boeije, H.: *Analysis in Qualitative Research*. Sage Publications Ltd., Thousand Oaks (2010)
- Bojei, J., Awang, K.W., Mohd Radzi, S.: Institutional sustainability of Malaysian homestays: government perspective. *J. Tour. Hosp. Culin. Arts (JTHCA)* **9**(3), 85–103 (2017)
- Braun, V., Clarke, V.: Using thematic analysis in psychology. *Qual. Res. Psychol.* **3**(2), 77–101 (2006)
- Cantor, D.E., Morrow, P.C., McElroy, J.C., Montabon, F.: The role of individual and organizational factors in promoting firm environmental practices. *Int. J. Phys. Distrib. Logist. Manag.* **43**(5), 407–427 (2013). <https://doi.org/10.1108/IJPDLM-03-2012-0071>

- Creswell, J.W.: Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research, 3rd edn. Pearson Education Inc., Upper Saddle River (2008)
- Creswell, J.W., Clark, V.L.P.: Designing and Conducting Mixed Methods Research, vol. 31. Sage Publications, Thousand Oaks (2007). <https://doi.org/10.1111/j.1753-6405.2007.00096.x>
- Dzewaltowski, D.A., Noble, J.M., Shaw, J.M.: Physical activity participation: social cognitive theory versus the theories of reasoned action and planned behavior. *J. Sport Exerc. Psychol.* **12**(4), 388–405 (2016). <https://doi.org/10.1123/jsep.12.4.388>
- Fernández-Manzanal, R., et al.: Environmental behaviours in initial professional development and their relationship with university education. *J. Clean. Prod.* (2015). <https://doi.org/10.1016/j.jclepro.2015.07.153>
- Fogg, B.: A behavior model for persuasive design. In: ACM International Conference Proceeding Series, vol. 350 (2009). <https://doi.org/10.1145/1541948.1541999>
- Font, X.: Environmental certification in tourism and hospitality: progress, process and prospects. *Tour. Manag.* **23**(3), 197–205 (2002). [https://doi.org/10.1016/S0261-5177\(01\)00084-X](https://doi.org/10.1016/S0261-5177(01)00084-X)
- Foo, L.P., Chin, M.Y., Tan, K.L., Phuah, K.T.: The impact of COVID-19 on tourism industry in Malaysia. *Curr. Issues Tour.*, 1–5 (2020)
- Gagnon, B., Leduc, R., Savard, L.: From a conventional to a sustainable engineering design process: different shades of sustainability. *J. Eng. Des.* (2012). <https://doi.org/10.1080/09544828.2010.516246>
- Hafiz, M., Jamaluddin, M.R., Zulkifly, M.I., Othman, N.: Exploring responsible tourism development facet. In: Theory and Practice in Hospitality and Tourism Research - Proceedings of the 2nd International Hospitality and Tourism Conference 2014, pp. 173–177 (2015). <https://doi.org/10.1201/b17390-35>
- Han, H., Hsu, L.T.J., Lee, J.S., Sheu, C.: Are lodging customers ready to go green? An examination of attitudes, demographics, and eco-friendly intentions. *Int. J. Hosp. Manag.* **30**(2), 345–355 (2011). <https://doi.org/10.1016/j.ijhm.2010.07.008>
- Harun, H., Hassan, R., Rasid, A., Razzaq, A., Mustafa, M.Z.: Building local capacities towards sustaining community based tourism development (CBET): experience from Miso Walal Homestay, Kinabatangan Sabah, Malaysia. In: Regional Conference on Higher Education-Community-Industry Engagement, pp. 7–9 (2012). [http://eprints.uthm.edu.my/2610/1/Regional\\_Conf\\_on\\_Higher\\_Edu\\_Comm\\_Industry-Engagemnt\\_2012.pdf](http://eprints.uthm.edu.my/2610/1/Regional_Conf_on_Higher_Edu_Comm_Industry-Engagemnt_2012.pdf)
- Hassan, H., Nezakati, H.: Green tourism practices in Malaysia. In: Selected Issues in Hospitality and Tourism, pp. 24–36. UPM Press, Serdang, Selangor (2014)
- Hassan, M.H., Hosseinpou, M., Nezakati, H., Jofreh, M.: Highlighting influential factor to inculcate green behaviour. *J. Appl. Sci.* **15**(3), 405–410 (2015). <https://doi.org/10.3923/jas.2015.405.410>
- Holden, R.R.: Face validity. In: The Corsini Encyclopedia of Psychology (2010). <https://doi.org/10.1002/9780470479216.corpsy0341>
- Homestay Unit, I. D.: Laporan Statistik Program Pengalaman Homestay Malaysia, June 2021 (2020) <http://www.motac.gov.my/en/download/send/11-homestay/65-laporan-statistik-program-pengalaman-homestay-malaysia>
- Hussin, R., Kunjuran, V.: Sustainable community-based tourism (CBT) Through homestay programme in Sabah, East Malaysia. In: Proceeding of the Social Sciences Research ICSSR 2014 (e-ISBN 978-967-11768-7-0), Kota Kinabalu, Sabah, Malaysia, 9–10 June 2014, pp. 41–61 (2014)
- Ibrahim, Y., Rashid, A.: Homestay program and rural community development in Malaysia. *J. Ritsumeikan Soc. Sci. Humanit.* **1**(2), 7–24 (2010)
- Ismail, M.N.I., Hanafiah, M.H., Aminuddin, N., Mustafa, N.: Community-based homestay service quality, visitor satisfaction, and behavioral intention. *Procedia Soc. Behav. Sci.* **222**, 398–405 (2016). <https://doi.org/10.1016/j.sbspro.2016.05.192>
- Jamal, S.A., Aminudin, N., Sumarjan, N., Chik, C.T.: Idiosyncratic identity for homestay tourism in Malaysia: importance, benefits and challenges. *J. Fundam. Appl. Sci.* **10**(2S), 524–539 (2018)

- Jamal, S.A., Othman, N., Muhammad, N.M.N.: Tourist perceived value in a community-based homestay visit: an investigation into the functional and experiential aspect of value. *J. Vacat. Mark.* **17**(1), 5–15 (2011). <https://doi.org/10.1177/1356766710391130>
- Jamaludin, M., Yusof, Z.B.: Best practice of Green Island resorts. *Procedia Soc. Behav. Sci.* **105**, 20–29 (2013). <https://doi.org/10.1016/j.sbspro.2013.11.003>
- Jamaludin, M., Othman, N., Awang, A.R.: Community based homestay programme: a personal experience. *Procedia Soc. Behav. Sci.* **42**, 451–459 (2012). <https://doi.org/10.1016/j.sbspro.2012.04.210>
- Kasim, M.M., Kayat, K., Ramli, R., Ramli, R.: Sustainability criteria for the Malaysia homestay program. *Int. Rev. Manag. Mark.* **6**(7Spec. Issue), 250–255 (2016)
- Khan, N.F.A.H., Aziz, Y.A., Saad, R., Rahman, A.A.: Preliminary investigation of environmental practices among homestay operators (2018)
- King, N.: Using templates in the thematic analysis of text. *Essential guide to qualitative methods in organizational research*, 256 (2004)
- Kunjuraman, V., Hussin, R.: Challenges of community-based homestay programme in Sabah, Malaysia: hopeful or hopeless? *Tour. Manag. Perspect.* **21**, 1–9 (2017). <https://doi.org/10.1016/j.tmp.2016.10.007>
- Kurusu, K.: Pro-Environmental Behaviors (2016). <https://doi.org/10.1007/978-4-431-55834-7>
- Lee, J.S., Hsu, L.T., Han, H., Kim, Y.: Understanding how consumers view green hotels: how a hotel's green image can influence behavioural intentions. *J. Sustain. Tour.* **18**(7), 901–914 (2010). <https://doi.org/10.1080/09669581003777747>
- Lee, S., Sun, K.A., Wu, L., Xiao, Q.: A moderating role of green practices on the relationship between service quality and customer satisfaction: Chinese hotel context. *J. China Tour. Res.* **14**(1), 42–60 (2018). <https://doi.org/10.1080/19388160.2017.1419897>
- Lin, S.Y., Lin, M.C., Liu, G.Y.: Taiwan host B&B quality accreditation. *Qual. Mag.* **46**(12), 32–34 (2010)
- Maichum, K., Parichatnon, S., Peng, K.C.: Application of the extended theory of planned behavior model to investigate purchase intention of green products among Thai consumers. *Sustainability* **8**(10) (2016). <https://doi.org/10.3390/su8101077>
- Mensah, I.: Stakeholder pressure and hotel environmental performance in Accra, Ghana. *Manag. Environ. Qual. Int. J.* **25**(2), 227–243 (2014). <https://doi.org/10.1108/MEQ-01-2013-0009>
- Mills, A.J., Durepos, G., Wiebe, E. (eds.): *Encyclopedia of Case Study Research*. Sage Publications, Thousand Oaks (2009)
- Ministry of Tourism and Culture Malaysia (MOTAC) Official Website: Homestay & Kampungstay (2018) <http://www.motac.gov.my/en/programmes/tourism/Homestay-kampungstay>
- Mohamad Muslim, H.F., Numata, S., Yahya, N.A.: Development of Malaysian homestay tourism: a review. *Int. J. Tour. Sci.* **10**, 65–74 (2017)
- Mohammed, L.A.: Validity and reliability. In: *Forensic Examination of Signatures* (2019). <https://doi.org/10.1016/B978-0-12-813029-2.00009-8>
- Morse, J.M.: Determining sample size. *Qual. Health Res.* (2000). <https://doi.org/10.1177/104973200129118183>
- Nelson, K.M., Partelow, S., Stähler, M., Graci, S., Fujitani, M.: Tourist willingness to pay for local green hotel certification. *PLoS ONE* **16**(2), e0245953 (2021)
- New Straits Time online: Yeo: New act needed to replace Environmental Quality Act 1974 (2019). <https://www.nst.com.my/news/nation/2019/05/484931/yeo-new-act-needed-replace-environmental-quality-act-1974>
- Padlee, S.F., Ali, A., Mokhtar, N.F., Nur 'Atikah Zulkiffli, S.: Regret and satisfaction influencing attitude and intention in using homestay terminology: the structural approach. *Asian Soc. Sci.* **9**(17), 94–104 (2013). <https://doi.org/10.5539/ass.v9n17p94>
- Pusiran, A.K., Xiao, H.: Challenges and community development: a case study of homestay in Malaysia. *Asian Soc. Sci.* **9**(5), 1–17 (2013). <https://doi.org/10.5539/ass.v9n5p1>
- Qu, S.Q., Dumay, J.: The qualitative research interview. *Qual. Res. Account. Manag.* (2011). <https://doi.org/10.1108/11766091111162070>

- Ramli, R., Kasim, M.M., Ramli, R., Kayat, K., Razak, R.A.: Ranking the criteria for sustainability of community-based rural homestay programmes from the perspective of the operators. In: AIP Conference Proceedings, vol. 1691 (2015). <https://doi.org/10.1063/1.4937044>
- Roberts, J.M.: Research Methods in Cultural Anthropology. H. Russell Bernard. Am. Anthropol. **91**(1), 253–254 (1989). <https://doi.org/10.1525/aa.1989.91.1.02a00770>
- Salleh, N.H.M., Othman, R., Nordin, N., Idris, S.H.M., Shukor, M.S.: The homestay program in Malaysia: motivation for participation and development impact. *Tourism* **62**(4), 407–421 (2014). <https://www.scopus.com/inward/record.uri?eid=2-s2.0-84921509817&partnerID=40&md5=1a1915473c0c7654dbf64ab3395e1b0f>
- Saunders, M., Lewis, P., Thornhill, A.: *Research Methods for Business Students*. Pearson, London (2016)
- Scott, C., Medaugh, M.: Axial coding. In: *The International Encyclopedia of Communication Research Methods*, vol. 10, p. 9781118901731 (2017)
- Sekaran, U.: *Research and Markets: Research Methods for Business - A Skill Building Approach*. Wiley, Hoboken (2003). <https://doi.org/10.1108/17506200710779521>
- Shove, E., Pantzar, M., Watson, M.: *The Dynamics of Social Practice: Everyday Life and How It Changes*. The Dynamics of Social Practice: Everyday Life and How it Changes (2012). <https://doi.org/10.4135/9781446250655>
- Smith, E.E., Perks, S.: A perceptual study of the impact of green practice implementation on the business functions. *South. Afr. Bus. Rev.* **14**(3), 1–29 (2010)
- Sustainable Business Associates: *Best Environmental Practices for the Hotel Industry* (2008)
- Teare, R., Bandara, C., Jayawardena, C. (Chandi): Engaging the rural communities of Sri Lanka in sustainable tourism. *Worldw. Hosp. Tour. Themes* **5**(5), 464–476 (2013). <https://doi.org/10.1108/WHATT-06-2013-0037>
- Thapaliya, M., Rai, G.S., Shrestha, A., Parajuli, B., Pande, O.: Home-stay: assessment in Lwang Ghalel. *Nepal Tour. Dev. Rev.* **2**(1), 105–140 (2013). <https://doi.org/10.3126/ntdr.v2i1.7382>
- The Star Online: Low awareness on recycling among Malaysians (2017). <https://www.thestar.com.my/news/nation/2017/08/20/low-awareness-on-recyclingamong-malaysians/>
- The Malaysian Reserve website: Four arrested over recent Sungai Selangor water pollution (2020). <https://themalaysianreserve.com/2020/11/12/four-arrested-over-recent-sungai-selangor-water-pollution/>
- Tsai, K.T., Lin, T.P., Hwang, R.L., Huang, Y.J.: Carbon dioxide emissions generated by energy consumption of hotels and homestay facilities in Taiwan. *Tour. Manag.* **42**, 13–21 (2014). <https://doi.org/10.1016/j.tourman.2013.08.017>
- Umrani, W.A., Channa, N.A., Yousaf, A., Ahmed, U., Pahi, M.H., Ramayah, T.: Greening the workforce to achieve environmental performance in hotel industry: a serial mediation model. *J. Hosp. Tour. Manag.* **44**, 50–60 (2020)
- Wu, S.-I., Chen, J.-Y.: A model of green consumption behavior constructed by the theory of planned behavior. *Int. J. Mark. Stud.* **6**(5) (2014). <https://doi.org/10.5539/ijms.v6n5p119>
- Yin, R.K.: *Qualitative Research from Start to Finish Second Edition*. The Guilford Press, New York (2016)
- Yusof, Y., Muda, M.S., Amin, W.A., Ibrahim, Y.: Rural tourism in Malaysia: a homestay program. *China-USA Bus. Rev.* **12**(3) (2013)
- Yusof, Z.B., Jamaludin, M.: Green practices of small Island chalet operators in East Peninsular Malaysia. *Procedia Soc. Behav. Sci.* **202**, 340–350 (2015). <https://doi.org/10.1016/j.sbspro.2015.08.238>



# Real-Time Dream House Decorator in the Virtual Reality Environment



**Muhammad Nur Aiman Bin Doktah Mokhtar, Ismahafezi Ismail, Wan Mohd Amir Fazamin Wan Hamzah, Syadhiah Nor Wan Shamsuddin, and Mohd Azhar M. Arsad**

**Abstract** Virtual Reality (VR) technology has begun entering the repertoire of tools used by commercial architects. Today, architects are using VR for visualization and sales. For example, VR is used as a promotional tool for both the architectural firms and their developer clients in retail and commercial architecture. Very importantly, VR can help architects and clients communicate better about proposed projects. Hence, the proposal application for the Real-time Dream House Decorator proposed. Real-time Dream House Decorator is home decorator application. The main objective of the study is to develop an application, test the usability of this application. This application is a platform for users to makes user who want to explore and virtually decorate it themselves with various texture design. This involves to use the application development software Unity to produce Real-time Dream House Decorator Virtual Reality.

**Keywords** Virtual reality · Commercial architecture · Application

## 1 Introduction

Over the last two years, the use of Virtual Reality has increased (Ye 2013). VR is a mix of video and audio that fills a single person's field of feeling, interacting with their perceptual process to provide the illusion of being made in a machine and giving credibility to the actual world (O'Toole 2017). Let's compare virtual reality to real-world observations to better comprehend it. Our senses and the body's perceptual processes help us understand our environment (Shamsuddin et al. 2018). Users that use hardware devices like goggles, headphones, and special gloves encounter virtual worlds created and served by software. The users may observe and interact with the

---

M. N. A. B. D. Mokhtar · I. Ismail (✉) · W. M. A. F. W. Hamzah · S. N. W. Shamsuddin · M. A. M. Arsad

Faculty of Informatics and Computing, University Sultan Zainal Abidin, Kuala Terengganu, Malaysia

e-mail: [ismahafezi@unisza.edu.my](mailto:ismahafezi@unisza.edu.my)

V3X Malaysia SDN. BHD., Skudai, Johor, Malaysia

virtual environment as if they were inside it it Zolkefly et al. (2018). Gaze tracking, IR sensors, gyroscopes, and accelerometers are used in both mobile and tethered VR programs to change the user's point of view naturally (Mahmud et al. 2019). Real-time Dream House Decorator is a Virtual Reality application that allows users to explore and decorate their dream home. This application will assist users in selecting a new home design as well as exploring and decorating it and can consider which design matching they wanted and what is needed to decorate in their home. Also, make user able to design their home ideas immersively.

## 2 Related Works

In relation to the topic of the project, several products are produced. My Virtual Space (West Pier Studio 2018), user can explore & edit virtual spaces. My Virtual Space is a great way for businesses to show off their content or products. It is perfect for architecture, design or home design.

Planner 5D—Home & Interior Design Creator (Rytis 2021) is a Plans 5D is a simple-to-use tool that makes anyone with access to a computer, internet, and graphics design software capable of designing stunning and realistic 2D and 3D environments. User can pick and choose between interior and exterior items from a wide range of options, which are accessible via an onscreen catalogue. This lets user build the way user want your home or other space to look, without having to risk putting it together. Virtual Reality lets you see what everything looks like in reality.

In iStaging (Chang 2016), It has a few products in 3D model. User can apply directly to camera, or view them in VR mode. However, user can't really create own design by selecting different furniture on the same scene. User can only view one furniture at one time. Ikea Place (Inter IKEA Systems B.V. 2018). To make their decisions, users may search via an online database of nearly 2,000 IKEA goods. After selecting a product, users must aim the device to the desired location in a room, then drag and drop the object into place. IKEA Place allows users to bookmark their favorite goods, share them on social media, and make direct purchases from the IKEA website. The first batch of items, according to the firm, consists mostly of large-scale furniture such as couches, armchairs, coffee tables, and storage solutions.

## 3 Methodology

In order to develop a successful application, ADDIE model is most suitable methodology that can be used to develop mobile VR application. The ADDIE model is an iterative instructional design process, where the results of the formative evaluation of each phase may lead the instructional designer back to any previous phase (Aldoobie 2015). In this phase, analysis was done to identify what is needed to develop the mobile VR application. The target audience of this application was analysed as adult

aged twentytwo (22) to fifty-five (55) years old. Target audience as for these features guided the determination of the content and design of this application.

This project was built on a hardware powered by Windows and a simulator running Android Phone. The major software used to develop this application were Unity3D and Autodesk Maya. Unity3D was the main software utilized to develop this application. This included building 3D models (Fig. 1) using Autodesk Maya, developing VR environment application (Fig. 2) using Unity3D and create UI/UX (Fig. 3) using Unity3D.



Fig. 1 Building 3D models using Autodesk Maya

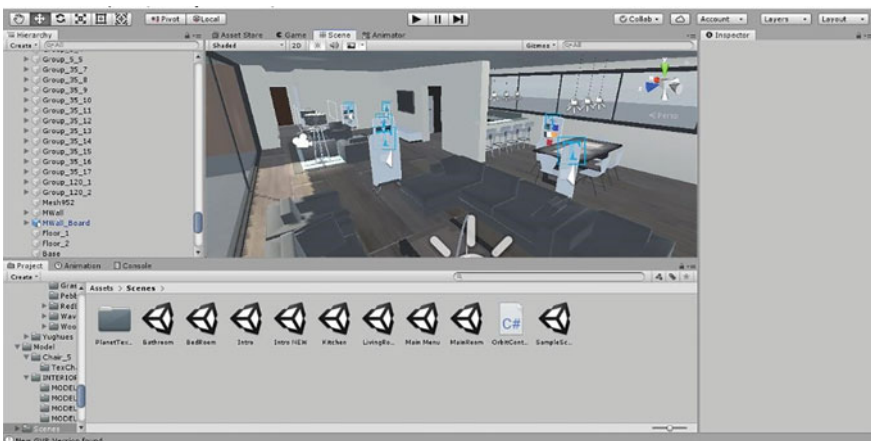
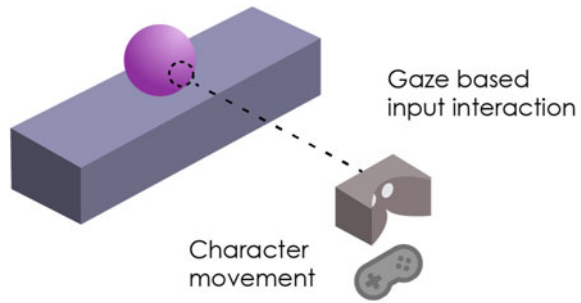


Fig. 2 Developing VR environment using Unity3D



Fig. 3 Create UI/UX application using Unity3D

Fig. 4 Techniques Gaze based input-interaction



The techniques used to create virtual reality are visualized in Fig. 4. This application may be developed using the gaze input interaction technique. The application is played with the controller while using gaze input interaction. Users can play this application while wearing the Google Cardboard to interacting with it using a pointer and using a controller for character movement. Figure 4 shows an example of a gaze input interaction approach.

Figure 5 shows the framework of this application, which is utilised to provide an overview of the project’s flows. User, Google Cardboard with controller, and Application were the three components included in the framework.

Users must utilise Google Cardboard with a controller when using this application, according to the framework. To establish a connection with the application. Autodesk Maya 3D and Unity were used to create this application. Following that, the programme sends a VR view to Google Cardboard, providing users with an immersive experience.

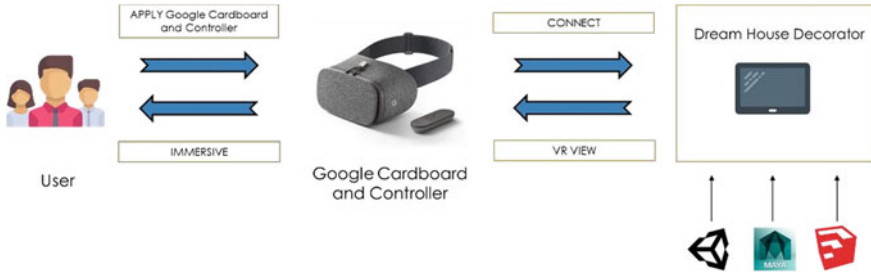


Fig. 5 Framework of application

## 4 Result and Discussion

The ADDIE model is a generic technique that instructional designers and training developers have historically employed. The five phases in ADDIE model that is analysis, design, development, implementation, and evaluation represent a dynamic, flexible guideline for building effective training and performance support tools. While the ADDIE model is likely the most widely used, it has a number of flaws that have resulted in a number of spin-offs or variants. Real-time Dream House Decorator was turned into a working prototype and application for end users. User can consider which design matching they wanted and what is needed to decorate in their home in virtually and also able to design their home ideas immersively.

### 4.1 Deployment

Real-time Dream House Decorator application was developed and deployed as an android application using the Unity 3D to create the overall project. This application was built in hardware terms using an Asus laptop with Intel® core i5-7200U 2.5 GHz CPU, 12 GB RAM, 240 GB hard disc SSD, and Windows 10.

### 4.2 Interface

The outputs of the application can be seen in the interface.

Figure 6 shows a menu that has on the homepage of the application. It is the first view when users open this application. This homepage provides instructions about how to play this application. In this menu, 2 buttons are displayed from which the users can choose. If users gaze enter button, go to the Living Room scene.

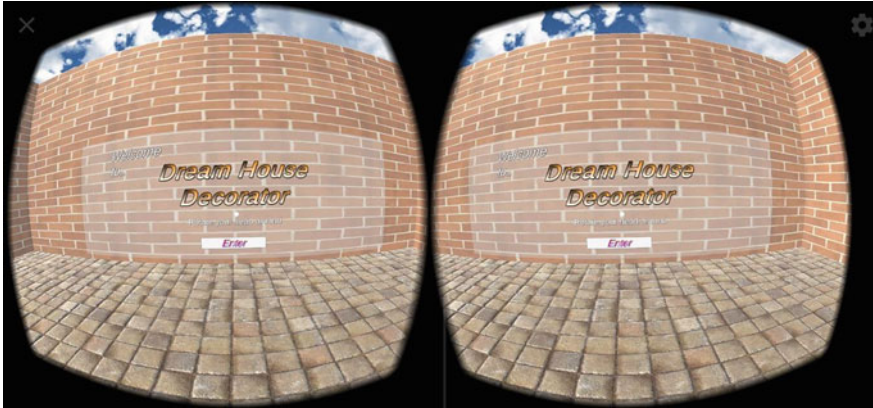


Fig. 6 Main menu application

Figure 7 shown a tutorial on how to change sofa material. When users gaze at this button, its changes the sofa texture.

Figure 8 shown sofa 1 texture menu. Users can change sofa texture by gaze at the menu button.

Figure 9 shown sofa 2 texture menu. Users can change sofa texture by gaze at the menu button.

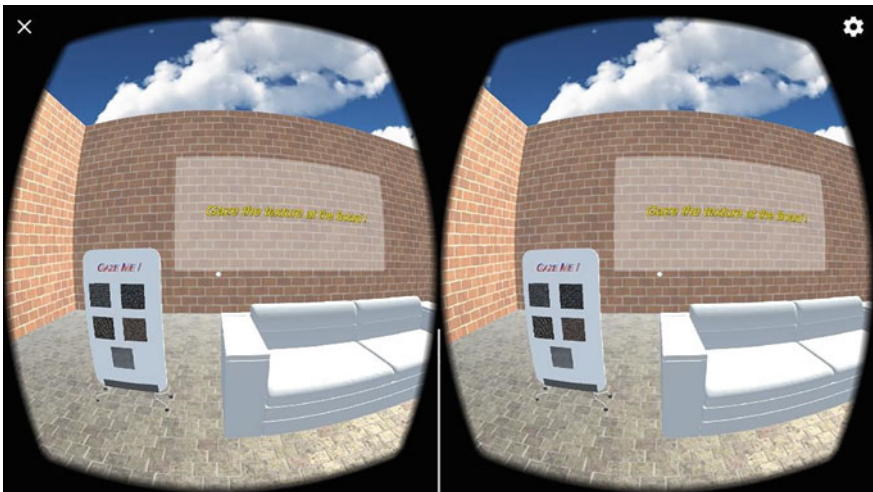
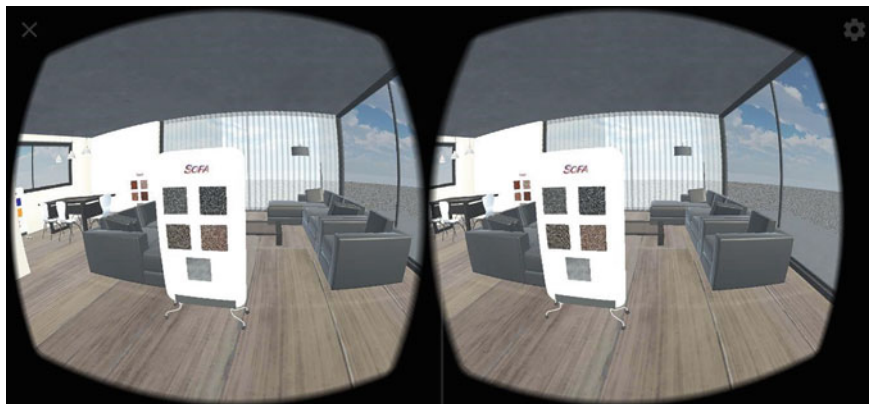
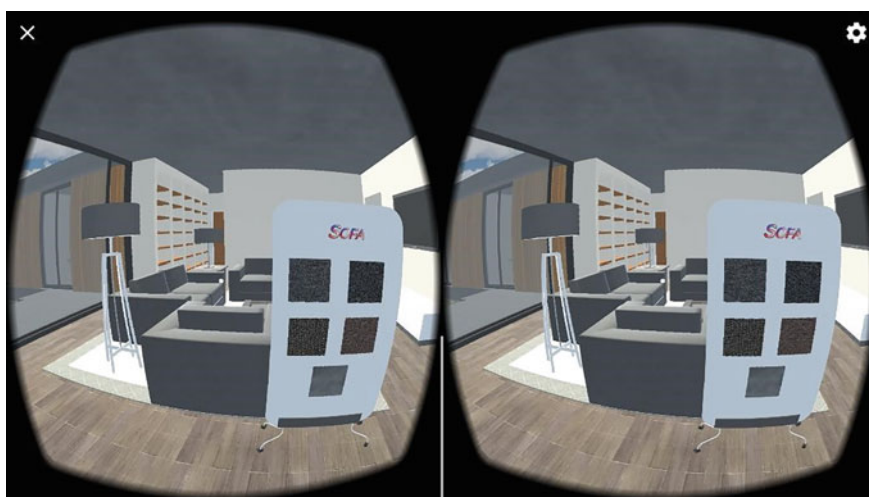


Fig. 7 Tutorial of application





**Fig. 8** Sofa 1 button

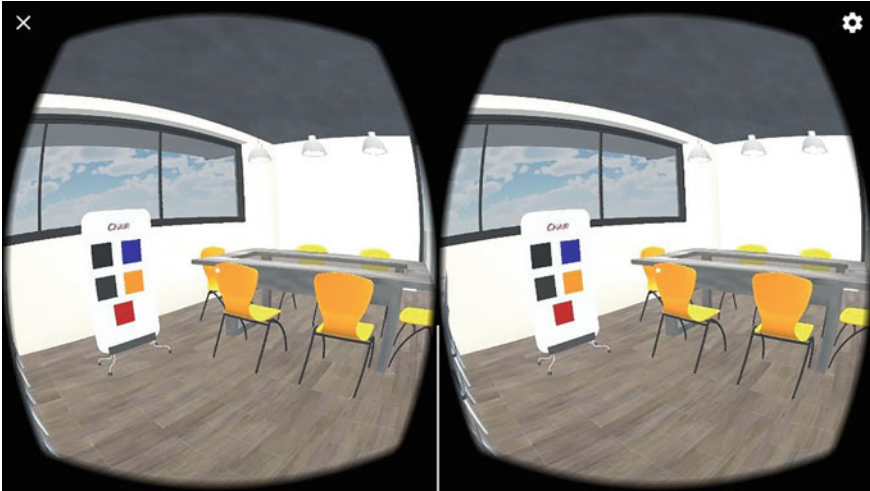


**Fig. 9** Sofa 2 button

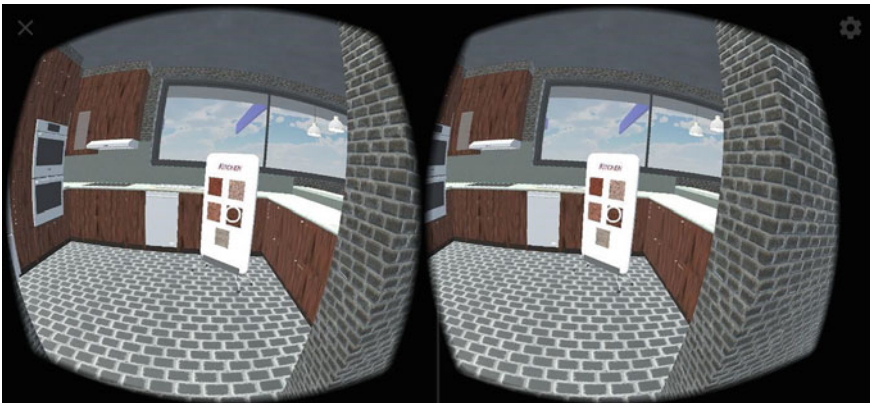
Figure 10 shown environment at kitchen. Users can change table texture and also can change chair colour.

Figure 11 shown environment at kitchen. Users can change cabinet texture and also can change chair colour.

Figure 12 shown floor texture menu. Users can change floor texture by gaze at the desire texture button.



**Fig. 10** Kitchen chair button



**Fig. 11** Kitchen cabinet button

Figure 13 shown wall texture menu. Users can change wall texture by gaze at the desire texture button.

Figure 14 shown bed texture menu. Users can change bed texture by gaze at the desire texture button.



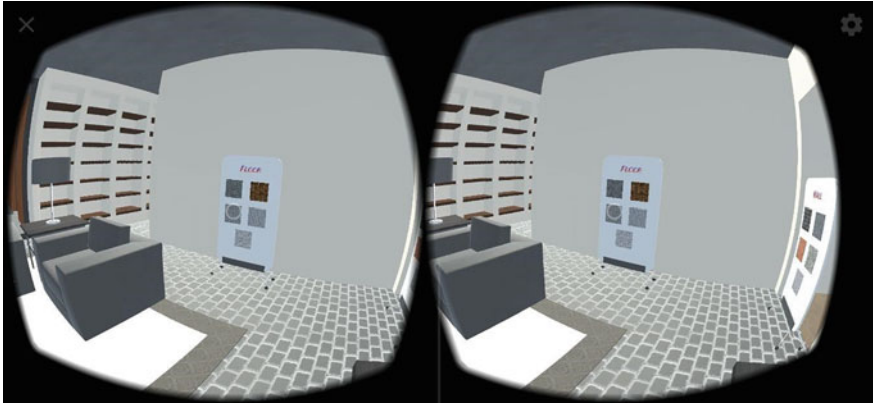


Fig. 12 Floor button

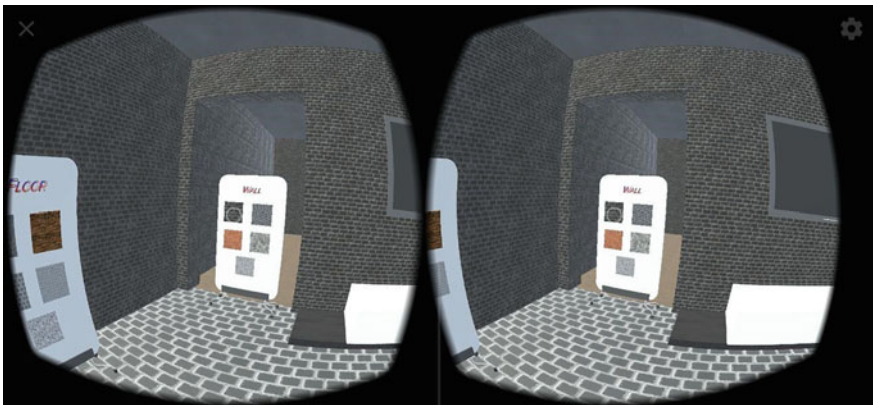


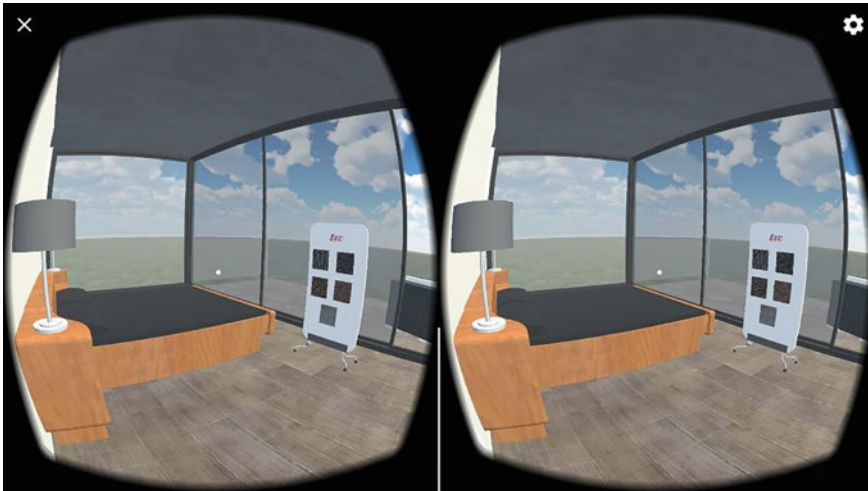
Fig. 13 Wall button

### 4.3 Testing

To ensure that the system is fully functional and error-free, testing is required. Module testing was used to test each feature of the application in terms of providing the expected input and output. The architecture, interfaces, basic features, and functional buttons of this application were all tested using black-box testing techniques.

Based on Table 1, users were allowed access to the application and choose button to play and learn.

Based on Table 2, users were allowed to play Scene Living Room. Of all the checks that were carried out on this application, all were successful.



**Fig. 14** Bedroom button

**Table 1** Test case for Main Menu Page

Test case	Procedures	Expected result	Result
1	Gaze pointer “Texture 1” button Sofa 1	Display Texture 1 on Sofa 1	Success
2	Gaze pointer “Texture 2” button Sofa 1	Display Texture 2 on Sofa 1	Success
3	Gaze pointer on “Texture 3”	Display Texture 3 on Sofa	Success
4	Gaze pointer on “Texture 4”	Display Texture 4 on Sofa	Success
5	Gaze pointer on “Texture 5”	Display Texture 5 on Sofa	Success
6	Gaze pointer on “Enter” button	Go to Scene Living Room	Success

**Table 2** Test case for Scene Living Room

Test case	Procedures	Expected result	Result
1	Gaze pointer “Texture 1” button Sofa 1	Display Texture 1 on Sofa 1	Success
2	Gaze pointer “Texture 2” button Sofa 1	Display Texture 2 on Sofa 1	Success
3	Gaze pointer “Texture 3” button Sofa 1	Display Texture 3 on Sofa 1	Success
4	Gaze pointer “Texture 4” button Sofa 1	Display Texture 4 on Sofa 1	Success
5	Gaze pointer “Texture 5” button Sofa 1	Display Texture 5 on Sofa 1	Success
6	Gaze pointer “Texture 1” button Sofa 2	Display Texture 1 on Sofa 2	Success

(continued)

**Table 2** (continued)

Test case	Procedures	Expected result	Result
7	Gaze pointer "Texture 2" button Sofa 2	Display Texture 2 on Sofa 2	Success
8	Gaze pointer "Texture 3" button Sofa 2	Display Texture 3 on Sofa 2	Success
9	Gaze pointer "Texture 4" button Sofa 2	Display Texture 4 on Sofa 2	Success
10	Gaze pointer "Texture 5" button Sofa 2	Display Texture 5 on Sofa 2	Success
11	Gaze pointer "Texture 1" button Dining Table	Display Texture 1 on Dining Table	Success
12	Gaze pointer "Texture 2" button Dining Table	Display Texture 2 on Dining Table	Success
13	Gaze pointer "Texture 3" button Dining Table	Display Texture 3 on Dining Table	Success
14	Gaze pointer "Texture 4" button Dining Table	Display Texture 4 on Dining Table	Success
15	Gaze pointer "Texture 5" button Dining Table	Display Texture 5 on Dining Table	Success
16	Gaze pointer "Colour 1" button Dining Chair	Display Colour 1 on Dining Chair	Success
17	Gaze pointer "Colour 2" button Dining Chair	Display Colour 2 on Dining Chair	Success
18	Gaze pointer "Colour 3" button Dining Chair	Display Colour 3 on Dining Chair	Success
19	Gaze pointer "Colour 4" button Dining Chair	Display Colour 4 on Dining Chair	Success
20	Gaze pointer "Colour 5" button Dining Chair	Display Colour 5 on Dining Chair	Success
21	Gaze pointer "Texture 1" button Kitchen Cabinet	Display Texture 1 on Kitchen Cabinet	Success
22	Gaze pointer "Texture 2" button Kitchen Cabinet	Display Texture 2 on Kitchen Cabinet	Success
23	Gaze pointer "Texture 3" button Kitchen Cabinet	Display Texture 3 on Kitchen Cabinet	Success
24	Gaze pointer "Texture 4" button Kitchen Cabinet	Display Texture 4 on Kitchen Cabinet	Success
25	Gaze pointer "Texture 5" button Kitchen Cabinet	Display Texture 5 on Kitchen Cabinet	Success
26	Gaze pointer "Texture 1" button Wall	Display Texture 1 on Wall	Success
27	Gaze pointer "Texture 2" button Wall	Display Texture 2 on Wall	Success

(continued)

**Table 2** (continued)

Test case	Procedures	Expected result	Result
28	Gaze pointer “Texture 3” button Wall	Display Texture 3 on Wall	Success
29	Gaze pointer “Texture 4” button Wall	Display Texture 4 on Wall	Success
30	Gaze pointer “Texture 5” button Wall	Display Texture 5 on Wall	Success
31	Gaze pointer “Texture 1” button Floor	Display Texture 1 on Floor	Success
32	Gaze pointer “Texture 2” button Floor	Display Texture 2 on Floor	Success
33	Gaze pointer “Texture 3” button Floor	Display Texture 3 on Floor	Success
34	Gaze pointer “Texture 4” button Floor	Display Texture 4 on Floor	Success
35	Gaze pointer “Texture 5” button Floor	Display Texture 5 on Floor	Success
36	Gaze pointer “Texture 1” button Bedroom	Display Texture 1 on Bedroom	Success
37	Gaze pointer “Texture 2” button Bedroom	Display Texture 2 on Bedroom	Success
38	Gaze pointer “Texture 3” button Bedroom	Display Texture 3 on Bedroom	Success
39	Gaze pointer “Texture 4” button Bedroom	Display Texture 4 on Bedroom	Success
40	Gaze pointer “Texture 5” button Bedroom	Display Texture 5 on Bedroom	Success

## 5 Conclusion

In conclusion, the objective of this study to build a Dream House Decorator Virtual Reality application has been successfully achieved. This system focuses on virtual interior decorating for ordinary users and home designers. Then, to make this application more interactive and user-friendly, gaze interaction methods were applied. ADDIE model has been used during the development of the application. The framework and the interface design included in this report can also act as a guideline to users in using this application. The major problem and limitation during the project development are to the user must have a gyroscope sensor supported mobile support this kind of technology, Then, a user must have a specific gear to control and view this application and not every single content from the real world is provided. Besides that, the limitation is this application is only available on the Android platform only. Real-time Dream House Decorator in the Virtual Reality Environment still has a lot to be improved. Future works are recommended to upgrade the application to be

more efficient in the future. The suggestion is to make more furniture, house layout design, and texture design in order to make interactive items look more realistic. I hope this application might be a sell in the market so that architecture companies can discover more house designs with virtual reality technology. Last but not least, it is hoped that this application can benefit the community at large.

**Acknowledgements** This research paper is supported by Universiti Sultan Zainal Abidin (UniSZA) using FRGS Racer Fund, project number: RACER/1/2019/ICT01/UNISZA//1. Special Thanks to the Ministry of Higher Education Malaysia (MOHE) and Centre for Research Excellence & Incubation management (CREIM) UniSZA for providing financial support for the research.

## References

- Aldoobie, N.: ADDIE model. *Am. Int. J. Contemp. Res.* **5**(6), 68–72 (2015)
- Chang, M.: iStaging (2016). <https://www.istaging.com/en/>
- Inter IKEA Systems B.V.: Say hej to IKEA Place (2018). <https://www.ikea.com/au/en>
- Mahmud, N.I.M.M., Ismail, I., Shamsuddin, S.N.W., Safei, S., Arsad, M.A.M.: Learning performance assessment using mobile-based augmented reality application for preschool environment. *Int. J. Recent Technol. Eng.* **8**(2 Special Issue 3), 436–439 (2019)
- O’Toole, D.R.: Kickstart VR at Warwick. University of Warwick (2017)
- Rytis: Planner 5D - Home & Interior Design, April 2021. <https://planner5d.com/>
- Shamsuddin, S., Selman, M., Ismail, I., Amin, M., Rawi, N.: A conceptual framework for gamified learning management system for LINUS students. *Indones. J. Electr. Eng. Comput. Sci.* **12**(3), 1380–1385 (2018)
- West Pier Studio: My Virtual Space (2018). <http://myvirtualspaceapp.com/>
- Ye, O.B.: *Virtual Reality and Virtual Reality System Components*. Atlantis Press (2013)
- Zolkefly, N.N., Ismail, I., Safei, S., Shamsuddin, S.N.W., Arsad, M.A.M.: Head gesture recognition and interaction techniques in virtual reality: a review. *Int. J. Eng. Technol.* **7**(4.31 Special Issue 31), 437–440 (2018)

# The Determinants of Cooperative Sustainable Development: A Case Study of Malaysian Cooperatives



Mohammad Ismail, Nurul Ashykin Abd Aziz, Noor Raihani Zainol, Mohd Nor Hakim Yusoff, and Rooshihan Merican Abdul Rahim Merican

**Abstract** Sustainability has become one of the strategic essential in the 4th industrial revolution era. Most cooperatives strive to endure a sustainable development on economic, organizational, social, and environmental. In today's competitive market environment, for cooperatives to achieve sustainability, many of them rely on business sustainability models to highlight the logic behind cooperative value creation and its potential impact. There are previous studies that explored the continuous development of cooperatives from various perspectives. However, only a small portion of information is known about factors influencing cooperatives' sustainable development, especially in Malaysia. Therefore, this study aims to address this gap by exploring this phenomenon. For the methodology approach, a set of three different case studies were conducted through protocol discussion with Malaysian cooperatives across various sectors. This was done to learn more about the topic, enhance the research questions, and expand the ideas. The findings of the qualitative investigation

---

M. Ismail · N. A. Abd Aziz (✉) · N. R. Zainol · M. N. H. Yusoff · R. M. Abdul Rahim Merican  
Faculty of Entrepreneurship and Business, Universiti Malaysia Kelantan, Locked Bag 36,  
Pengkalan Chepa, 16100 Kota Bahru, Kelantan, Malaysia  
e-mail: [ashykin.a@umk.edu.my](mailto:ashykin.a@umk.edu.my)

M. Ismail  
e-mail: [mohammad.i@umk.edu.my](mailto:mohammad.i@umk.edu.my)

N. R. Zainol  
e-mail: [raihani@umk.edu.my](mailto:raihani@umk.edu.my)

M. N. H. Yusoff  
e-mail: [hakimin@umk.edu.my](mailto:hakimin@umk.edu.my)

R. M. Abdul Rahim Merican  
e-mail: [rooshihan@umk.edu.my](mailto:rooshihan@umk.edu.my)

Angkasa-UMK Research Academy (AURA), Universiti Malaysia Kelantan, City Campus,  
Pengkalan Chepa, 16100 Kota Bahru, Kelantan, Malaysia

revealed several determinants, which led to the following themes: (i) members' participation; (ii) governance management; (iii) business strategy; (iv) resource management; and (v) leadership. The qualitative methods used yielded rich information that will guide future research. In brief, this study contributes to the existing literatures in cooperative and sustainable development knowledge and will benefit future research.

**Keywords** Cooperatives · Malaysian cooperatives · Sustainable · Sustainability · Qualitative

## 1 Introduction

According to Brehmer et al. (2018), sustainability development is a major concern that will challenge today's world. With the rise in global population and growth, as well as the increase of resource consumption and environmental impact, it appears that businesses may not have a clear path to long-term sustainability. However, addressing the different challenges of future sustainability requires a holistic and pragmatic strategy. Consequently, possible responses to environmental dynamics should be linked to changes in socioeconomics. Sustainability has been regarded as one of the main strategic agenda items during the 4th industrial revolution. In particular, sustainability is the efforts to meet an organization's current and future socio-economic expectations, as well as the ability to provide a competitive advantage to withstand the ever-changing market environment (Ismail et al. 2019; Ismail et al. 2019).

Furthermore, many authors and scholars have defined sustainability as the use of various approaches to address environmental, socio-cultural, and economic problems in unique ways, as well as to meet the direct and indirect needs of the organizations, stakeholders, customers, and employees (e.g. Dyllick and Hockerts 2002; Whiteman et al. 2013). Cooperative institutions are involved in cooperative developments, as an alternative model that increases economic activity at the local level. This is based on the potentials of cooperative institutions in fostering the spirit of cooperation among community members. During the industrial revolution in Europe in the eighteenth century, cooperative institutions began to arise. The society was subjugated at the time by an aristocracy whose money was dispersed unequally. The traders raised their pricing as a result of this predicament. The scenario had a negative influence on the community's living standards, particularly among the poor. Such an event generated the idea of a cooperative movement in Europe in the nineteenth century to combat poverty (Ortmann and King 2007). By their dual nature (economic and social), cooperatives are directly devoted to a sustainable development, as claimed by Castilla-Polo and Sanchez-Hernandez (2020). Encouragement of entrepreneurs to engage in businesses increases their chances of surviving in a competitive market (Abd Aziz et al. 2020; Abd Aziz et al. 2021; Abd Aziz et al. 2019).

When it comes to determining an effective organizational management, strategic management practices are critical in ensuring that an organization is successful in all

aspects of its operations. The cooperative sector is one of the sectors that receives the least amount of study attention from the perspective of strategic management, and this is especially true in the United States. In a developing country like Malaysia, the cooperative sector ranks third in importance behind the public and private sectors, but its importance is now more visible in the country's economic and social element growth in the recent years (Veer Singh 2020; Veer Singh et al. 2021). By fostering the possibility for collaboration among communities, cooperative institutions can play a significant role in the enhancement of local development (Sarmila et al. 2017). Prominently, a cooperative is an organization established to benefit its members by producing goods and delivering services. In addition, the purpose of the establishment of cooperatives is to fulfil the promotions of cooperation, relationships, participations, and interpersonal relationships (Abd Rahman and Zakaria 2018; Shamsuddin et al. 2018).

Veer Singh et al. (2020) recommended that cooperative-related studies need to be further conducted in other geographical areas to explore other factors that are related to management aspects. Moreover, a past research was done by Castilla-Polo and Sanchez-Hernandez (2020), and they developed a theoretical framework that connects all relationships in a tiered analysis, which is a new approach in explaining cooperative relationships. However, it is limited because the research is just a theory, and future studies are still needed to explore other factors related to cooperatives and sustainable development. With reference to Malaysia, businesses such as cooperatives are required to have a sustainable business model due to the high number of them and in order to guide them in learning and developing simple managerial and entrepreneurial strategies, as well as in strengthening both new and existing business ideas (Schaltegger et al. 2012). Presently in Malaysia, commercial entities grouped together under the umbrella of cooperatives are constantly expanding and attracting the government's attention because of their significant contributions to the country's socio-economic development. Cooperatives have a core purpose of increasing the economic well-being of their members while also making a concerted effort to meet their socio-cultural ambitions and protect the environment (Nooraslinda et al. 2018; Whiteman et al. 2013). Although the operations of cooperatives are causing an increasing concern, the issue of sustainability is still being addressed adequately (Nooraslinda et al. 2018). Therefore, this present study will explore the determinants of sustainable development based on the following overarching research question:

*“What are the determinants that lead to a sustainable development for cooperatives in Malaysia?”*

## **2 Literature Review**

### ***2.1 Sustainable Development Concept***

Although the concept of sustainable development has gained a considerable acceptance and importance, the theory and history of the growth of this concept are often



overlooked or underestimated (Pigou 1920). While evolution may appear to be inconsequential to some, it can nonetheless aid in predicting future trends and defects—as a result, serving a practical guide for both now and in the future, as claimed by Elkington and Rowlands (1999). According to Shi et al. (2019), sustainable development has emerged as a key concept in guiding the global social and economic changes. In the history of Sustainable Development Theory, there are three distinct periods: (i) the embryonic period (before 1972); (ii) the moulding phase (1972–1987); and (iii) the developing period (1987–present).

Furthermore, sustainable development is being transformed from a nebulous notion to a global activity, with growing practical wisdom being adopted along the way. In its evolution from pursuing a single aim of sustainable use of natural resources to the Millennium Development Goals and Sustainable Development Goals, the goal of sustainable development has become more complex. In addition, sustainable development practice serves as a foundation for a sustainable development theory, based on the principles of relational dialectics and infinity of the cognition process between practice and cognition, as well as the principles of repetition and perpetuity of the cognition process (Niu 2012; Steer and Wade-Gery 1993). Moreover, sustainable development theory supports implementation and is continually examined and improved in practise as highlighted by (Steer and Wade-Gery 1993).

Besides that, sustainability produces theories that are born out of the practical experiences, and the study of sustainable development cannot be isolated from the implementation of appropriate policies (Stagl 2007; Steer and Wade-Gery 1993). Olawumi and Chan (2018) emphasized that sustainable development has gone through the stages of concept generation, followed by creating a succession of sustainable development strategies. Many developments have occurred, and sustainability has progressed from addressing environmental challenges to addressing the global strategic issues of sustainable development. Sustainability reporting is an essential instrument for communicating to shareholders about the unique nature and structure, together with its ideals, human values, and contributions to sustainability (Yuill 2015). Cooperatives can use the Sustainable Development Goals (SDGs) to develop their strategies, goals, and activities under the changing conditions. As a result, sustainability reporting could be a valuable tool for simultaneously documenting both commitments to cooperative ideals and applications for sustainable development (International Cooperative Alliance 2016).

## ***2.2 Overview of Cooperative***

Various definitions of cooperatives can be found in the literature, and each scholar's definition takes a different approach. Monteiro and Stewart (2015) defined cooperative as the ownership and control of rights based on the ownership structure of the cooperative and the participation of members in the decision-making process. Meanwhile, Othman et al. (2014) described cooperative enterprises' owners, how to

exercise power, and how to get rewards. According to United Nations (2011), cooperatives provide various socio-economic benefits, including poverty reduction, job creation, and the decrease of social inequities. Cooperatives contribute to alleviating poverty by discovering economic opportunities for their members, enabling the poor to protect their interests, transforming specific risks into common risks, and facilitating member access to assets that may be used to earn a living. Another intriguing feature of cooperatives is their ability to withstand economic downturns.

Furthermore, cooperatives have become less vulnerable due to the responsibility of promoting members' worth and a long-term corporate model that is not focused on short-term profit (Araya et al. 2014). Their goal of meeting members' demands creates a steady and risk-averse business model. Cooperatives tend to grow slowly because they are more concerned with long-term viability than short-term profits. As a result, the cooperative approach can help to alleviate crisis-related issues (Douvitsa and Kassavetis 2014). The first cooperative in Malaysia was established in 1907, and it was introduced as a "cooperative company" to help farmers. The cooperative movement grew in the 1980s, when the Ministry of National and Rural Development launched the "New Era of Cooperatives". This launch was an initiative to make the cooperative movement in Malaysia becoming more progressive, dynamic, and developed (Idris and Safaai 2012). Zeuli et al. (2004) characterized the cooperative as a distinctive business model that engages in various group activities geared towards a shared interest. The recognition of the cooperative as a distinct business model adds to the advancement of society.

According to Hendriani (2016), discovering the concept of success in cooperatives is more complicated than examining the success of other kinds of organizations. This is because cooperative success is measured based on two core perspectives: (i) social, and (ii) economic—compared to other types of organizations (Dejene and Getachew 2015). According to Shamsuddin et al. (2018), cooperatives are acknowledged as democratic organizations. The financial statement is prepared for both internal and external users. Pezzini (2006) claimed that cooperatives are a type of social enterprise controlled by international rules that set them apart from other types of businesses. Cooperatives differ in three ways: (i) purpose, (ii) control structure, and (iii) profit distribution. The purpose of the entity is to meet the needs of its members. Cooperatives are democratic in their governance, ownership, and control, with each member having one vote. These have been the distinguishing characteristics of cooperatives, as membership is available to anybody, and members play an active role in determining the entity's direction, which includes profit distribution (Ismail et al. 2019; Ismail et al. 2019; Pezzini 2006).

### 3 Methodology

#### 3.1 *Qualitative Methodology*

Qualitative methodology is used in this case study approach to answer the research question. Qualitative methodology is defined as any study that demands the researcher to explore, comprehend, illuminate, and extrapolate to a similar scenario without statistical processes or other ways of quantification (Strauss and Corbin 1990). In comparison to the quantitative approach, the qualitative technique produces a distinct form of knowledge (Strauss and Corbin 2015). Researchers use qualitative methods to analyse things in their natural environments, attempting to make sense of, or explain the phenomena in terms of their assigned meanings by other people (Denzin and Lincoln 2011). In addition, Berg (2008) highlighted that a qualitative research investigates various social environments and the people who live in them to find answers to the questions. Researchers can use qualitative methodologies to share other people's perceptions and understandings and investigate how people create and provide meanings to their daily lives. Some researchers use qualitative methods to explore how people learn about and make sense of themselves, while some others choose to use quantitative methods (Berg 2004).

#### 3.2 *Case Study Approach*

A case study is an empirical research that studies an obscure phenomenon (Yin 2003, 2009, 2018). Neuman (2014) emphasized that the focus of a case study is to obtain in-depth information about a phenomenon or situation. Besides, case studies have many advantages like allowing the researchers to link the observed information in detail (Neuman 2000, 2011, 2014). Also, Creswell (2014) supported that a case study is a comprehensive and in-depth study of an issue using one or more cases in the phenomenon under investigation.

This study adopted a qualitative approach in which it involves a case study with four selected cooperatives (Yin 2009, 2018). According to Creswell (2014), a case study is a qualitative approach in which the researcher explores a case by collecting information from various sources. Moreover, a case study is also a common method used in business research (Merriam and Tisdell 2016; Yin 2013, 2018). Also, according to Brasileira et al. (2015), a case study is used when the researchers want to provide an understanding of a particular phenomenon by providing in-depth explanations to it. Therefore, the use of case study approach is accurate to objective of this study.

**Table 1** Profile of respondents

Code	Nature of cooperative	Informant
P1	Credit	Manager
P2	Trading	Manager
P3	Agriculture	Chairman
P4	Retail/Jewellery	BOC/Advisor

### 3.3 *Sampling and Profile of Participants*

Purposive sampling techniques were used to identify the participants in this study. Purposive sampling is a common technique used in qualitative studies to identify cases that can provide a detailed information (Patton 2002, 2015). According to Creswell and Clark Plano (2011), the selected participants should have experience and knowledge related to the studied phenomenon. Prominently, purposive sampling is intended to be used to ensure that the selected sample meets all the criteria required in the study (Creswell 2008; Silverman 2016). Palinkas et al. (2016) stated that purposive sampling is widely used in qualitative research to identify and select cases that can provide information related to the studied phenomena. The following is the profile of respondents of this study (Table 1):

Interview sessions using a semi-structured protocol were conducted for 40 to 60 min for each informant. The session was also recorded with the consent of the participants. Also, important information was recorded during the interviews to facilitate the data analysis process. Yin (2013) supports that semi-structured interviews allow the researchers to tailor questions to the interview flow. Moreover, semi-structured interviews are appropriate in exploring new issues in a research.

### 3.4 *Data Analysis*

Thematic analysis was used to analyse the data obtained in this study. The thematic analysis allows the researchers to accurately identify and organize the themes and subthemes (Braun and Clarke 2006). Labra et al. (2019) highlighted that thematic analysis offers a flexible and subjective approach, and it is well suited for research in the social field. Atlas.ti 9 was used to support the data analysis process. This software also provides several tools to analyse unstructured data that cannot be analysed using formal or statistical methods (Friese 2019; Othman 2019). Smit (2002) claimed that Atlas.ti could analyse immense servings of texts, audio, and video data. This software also helps the researchers to analyse the data by coding and annotating documents. In addition, this software provides a comprehensive description of a research initiative known as the Hermeneutic Unit in Atlas.ti, with quick search and retrieval capabilities.

## 4 Findings and Discussion

The present study has discovered five themes as the determinants of sustainable cooperative namely: (i) members' participation; (ii) governance management; (iii) business strategy; (iv) resource management; and (v) leadership. The explanation and discussion of all themes are presented below:

### 4.1 Theme 1: Members' Participation

Based on the grounded data, the first driver discovered in this study is members' participation. A cooperative's foundation is built on the contributions of its members. This organization exists to meet its requirements. In the form of protection and capital investment, their assistance contributes to the country's economic health. The cooperative's destiny is shaped by the changing demands of its members. Based on the statutory law and the fundamental legal documents of the cooperative articles, members are given the tools they need to control the cooperative and have the obligation to use those tools for the benefit of the entire membership. This aligned with these quotes:

*"Members involved need to work well... involved sincerely... happy... example I return to work at 6.30 pm... after office hours... I do not expect a claim... must be sincere. As a cooperative entrepreneur must be sincere... must be honest... must trust..."-P1.*

*"We provide unsecured credit loans to our members..... we only charge RM 70... once the charge only... anyone can become a member..... become a member in our cooperative is very flexible... even if there are members who no longer live and work in Terengganu, have moved to Kelantan, can still be a member... so when members want to make a loan, they don't need a guarantor..... many of our members who have a membership of 15 years... 20 years... members will also be involved in our activities..... this shows how much they contribute when to join our cooperative"-P2.*

Additionally, the members have general responsibilities towards the cooperative to work together for a sustainable development. In contrast to the passive investor in a regular commercial organization, the member-owner-user of a cooperative is responsible for patronizing and guiding the initiative for it to prosper. The cooperative's management team must be aware of these members' responsibilities and assist them in fulfilling those responsibilities. Indeed, the cooperative organization is built on the foundation of its members. For the cooperative to exist, its members must require its services. As per stated:

*"... 98% of cooperatives in Malaysia are small cooperatives... usually we call as micro... so we rebranding back this cooperative... the impact is a lot... we focus on team, we get a lot of members... trust is already there... strategy to sustain is to start with members ... when I create a professional as first layer, graduate as second layer... if we have professional members, members willing to give fund... fee... we take them because they can contribute ... they can donate, join the offer us and be active ..."P3.*

The contribution of the members to the goals and objectives of the cooperative will enable it to achieve its goals and objectives and have a good strategic plan. The

involvement or state of participation of the members in the activities of the organization is described as participation. Furthermore, the participation of the members in cooperative activities, especially in cooperative governance, is vital for the long-term viability and sustainable development of the cooperatives. As per claimed:

*“Our members are educated to be active, understand our vision and mission... they need to understand what their purpose is to join this cooperative. They are also committed and always contribute...”-P4.*

To support this point, the members are an important element in driving cooperative sustainability development (Ismail et al. 2019; Ismail et al. 2019). A past study by Azhari et al. (2017) found that cooperatives develop a member-economic business, not non-member economic business, as a part of their day-to-day operations. This is because the cooperative's primary goal is to improve its members' well-being. Meanwhile, another empirical study by Hao (2018) discovered that affective commitment, continuity commitment and normative commitment are positively related to trust, but social pressure is favourably associated with normative commitment. Partially moderating the relationship between trust, social pressure, and member commitment is participation.

Furthermore, members' involvement in their cooperatives is critical to the survival and development of the cooperatives as member-based organizations. Strong member participation in cooperative management is a vital aspect in ensuring the cooperatives' success. Because the members found that the cooperatives meet their common economic and social requirements, collective ownership is likely to instil a sense of belonging, which stimulate active participation in cooperative activities (Amini and Ramezani 2008; Lluch et al. 2006). In general, active member participation through cooperative administration manifests itself in attendance at annual general meetings and support the cooperative's products or services. Cooperatives' unique functioning qualities are reflected in their members' attendance at annual general meetings and support their cooperatives' products and services. The members' attendance at annual general meetings and their support for their cooperatives' products or services are two relevant variables included in the current study to demonstrate active member participation in the administration of cooperatives in Malaysia (Rajaratnam et al. 2010). Likewise, Apostolakis and Van Dijk (2018) highlighted that a cooperative's members have both the rights and responsibilities. Membership carries a certain amount of responsibility. A cooperative's members profit from it, but they should also contribute by taking the responsibility, committing time, and most importantly, exchanging information. Therefore, this study posits:

**P1: The higher the involvement of the members, the greater the possibility of sustainable development of cooperatives in Malaysia.**

## 4.2 Theme 2: Governance Management

Next, the second driver discovered in this study is governance management. A cooperative's business management is a team effort involving its members, the board of directors, managers, and staff. Each group is responsible for specific tasks and responsibilities. An organization's direction, administration, and control are influenced by a network of processes, practices, policies, regulations, and institutions that are part of the cooperative's governance system. Additionally, cooperative governance encompasses the relationship between the many stakeholders and the company's goal to achieve through its management. On the other hand, the performance of cooperative governance is the non-financial information about the cooperative that is reviewed to determine the cooperative's long-term sustainability and development. Undoubtedly, the excellent performance of cooperative management, especially in term of governance is crucial to encourage the public to get involved in the cooperative sector. As a basic guideline, cooperatives are encouraged to ensure that effective governance is implemented because it is a vital aspect in the success of the cooperative movement. This is associated with this quote:

*"In a cooperative... the main thing is good governance... how do we manage ... if a member wants to make a loan and so on, we process...manage the loan in stages... follow the member's ability as a borrower... our governance is flexible ... if a member makes a loan, we set the number of years for repayment... but if the member as a borrower wants to pay the settlement within that period, we have no problem... our management is flexible and easy for members"-P1.*

Cooperative governance is a management style that encompasses a wide range of functions. One of the most important management tasks in cooperative governance is accountability and mandate responsibilities, namely the execution of standards and methods to ensure good conduct and defend the members' interests. Economic efficiency is a primary focus since it asserts that a cooperative governance system should be designed to maximize economic outcomes while emphasizing the well-being of its members. Aspects of cooperative governance such as the stakeholders' point of view require a greater attention and accountability from groups other than the shareholders, such as employees or the environment. They are addressed by cooperative governance. A good cooperative administration, particularly in terms of governance, is essential to encourage the public to become involved in the cooperative sector. This is aligned with these quotes:

*"There are 5 concepts that I hold as cooperative owner... first location... then in terms of manpower... then capital...cooperatives usually have unlimited capital... we have fees and member shares... which can be added..... there is always capital... after that in terms of products... then marketing...all these related to governance management... al these must manage well, have proper planning and manage properly"-P2.*

*"The second is management... for governance management, we will manage by finding high profile projects... high income generation and there is a support system... we go for large-scale commercial... manage members well with the expertise we have... we help by designing strategy... we will try to solve the market problem, funding... ..."-P3.*

To support this point, Abd Rahman and Zakaria (2018) claimed that due diligence inspection controls the cooperative's performance from the financial and governance management aspects. These inspections fall under the regulatory outcomes and strategic indicators for compliance with cooperative organizations' governance and financial management. A past study by Othman et al. (2016) found that cooperative governance is relational, based on reciprocal accountability and trust. The ramifications of this circumstance may be different from those of contractual governance, which is shown to improve operations, management, and the bottom line. Importantly, Babalola (2014) highlighted that high-level commitment to the sustainability of the cooperative, and that the organization should apply good corporate principle governance that is capable of fostering total accountability, adequate transparency, internal sound controls, and full disclosure of their activities. According to Othman et al. (2013), governance management is of primary interest in the context of a cooperative organization because its purpose is to uphold the integrity of the organization in fulfilling its previous established objectives. Being an important part of the cooperative's purpose, therefore called "cooperative governance" is the maintenance of cooperative identity. This goal includes the adequate preparation and delivery of products and services requested by the members of the cooperative, in the context of their shared communities. Hence, this study suggests:

**P2: The better the governance management of the cooperatives, the higher the possibility of sustainable development of cooperatives in Malaysia.**

### 4.3 Theme 3: Business Strategy

Business strategy is another theme discovered by the data grounded in this study. Generally, business strategy refers to the outline of actions and decisions planned by the cooperative to achieve the goals and objectives of its establishment. This strategy determines what the cooperative needs to do to achieve its goals, which can help drive the decision-making process for the recruitment and allocation of resources. As highlighted by the participants, the business strategy creates a vision and direction for the entire cooperative organization. It is vital that everyone in the cooperative has a clear purpose and follows its instructions or missions. Strategies can provide this vision and prevent cooperatives from losing their company objectives. As per stated:

*"We plan the development of this cooperative... we set targets... we come out with a strategy... we don't simply take such members... as top management, we need to plan a strategy well, backup plan... we will do research first... we learn from the past ... We will educate the members who join our cooperative..."-P3.*

Likewise, the participants also revealed that business strategy is a powerful tool for the cooperatives to achieve their goals and objectives by determining organizational strategies and tactics. Many cooperative organizations' decisions, such as employing new members, are guided by their business strategies. It takes time and effort to design a business strategy that suits the cooperative's vision. Business strategy is an outline



of actions and decisions that need to be planned by a cooperative to achieve the goals and objectives of its establishment. Additionally, the strategy determines what the cooperative's top management needs to do to achieve its goals, which can help, benefit, and allocate resources to its members in need. Moreover, business strategies help the cooperative and members to work together and support each other as a whole. This is aligned with these quotes:

*“We have our strategies to focus on the retail business... indeed we will focus really on the retail business... our online strategy... advertising we also have strategies... we really plan the development of strategies to market our products.”-P4.*

*“We plan the development of this cooperative... we set targets...we plan the good strategy, we come out with a strategy... not that we simply take such members... as top management, we need to plan well, backup plan... we will do research first... we learn from the past... we will educate the members who come into our cooperative... ..”-P2.*

In line with this, Wakili et al. (2017) highlighted that instead of focusing on never-ending personal loan facilities, business strategies and other support mechanisms could help cooperatives with income generation. Finally, the study discovered that cooperatives prosper when essential drivers of sustainability such as vision, objective, attitude, culture, dedication, and trust are present. A past study by Setianingsih et al. (2020) on three cooperatives in Ciamis Regency, West Java by using the phenomenological approach found that the cooperative's core business strategy is focused on maintaining business continuity that encompasses development strategies in its management, human resource development, capital increase, and the type of business development of strategies to achieve sustainability. Furthermore, another previous study was done by Moskovich (2020) on Kibbutz Industry Cooperative, revealing that business sustainability strategy consists of three main components: (i) socialist concern for the well-being of society, (ii) external strategies that focus on expansion and making of a global industry, with many alliances and corporate acquisitions; and (iii) internal strategies covering self-criticism, professionalism, creativity, and organizational learning. The top management strategies could integrate opposite methods into their method of strategy while promoting innovation and originality and increasing economic success and persuasion for the continuity of the business and society. Therefore, the present study recommends:

**P3: Structured business strategy leads to high possibility of sustainable development of cooperatives in Malaysia.**

#### **4.4 Theme 4: Resources Management**

From the finding, the present study also Resource management is the practice of structuring an organization's resources to optimize usage. As a result, the business can achieve more extraordinary performance while also being more competitive than competitors. Resources in a cooperative can be derived from various sources, including physical, human, and financial assets. Furthermore, managing resources

efficiently allows the cooperative to give the greatest quality service to members quickly. This is because improved resource management helps increase visibility into resource availability while also improving timeline projections in cooperative operations. Additionally, every cooperative must use its resources efficiently because they are the most expensive firm investment. Furthermore, cooperative must ensure that its members' well-being is not compromised. As a result, when skills and abilities in resource management are fully exploited, the overall efficiency and profitability of the organization will increase. This related to these quotes:

*“... and in terms of focus, we focus on resources... like RBV [Resource Based View] ... we see not many agricultural -related cooperatives... and we see the need... this is food security, so we combine to make the cooperative.... .... Why we should stand for crowd... we want to encourage our members to generate income instead of debt.... we focus on agricultural and livestock resources...”-P3.*

*“In terms of resources, we have people, namely staff. Our own members... we also build networking. We also have our advisors... since then we have built this cooperative with the resources of experienced people that we have”-P4.*

When it comes to resource management, transparency is essential so that the cooperative management can observe, monitor, and achieve the required results to deliver its services. This also enables the cooperative to reduce idle time and wasteful resource consumption to a minimum. The cooperatives can schedule, coordinate, and manage their resources more successfully if they have a comprehensive view of their work and resources. As a result, this allows them to coordinate their resources promptly. Ultimately, the most significant benefit of cooperative resource management is the effective and efficient service delivery to the members by the organization. Members' satisfaction increases when the cooperative's administration meets their needs on time, and as what they expect them to. The confidence in the ability to offer services develops momentum, serves as a difference, and provides the cooperative with a strategic advantage in the business. As per revealed by these quotes:

*“Cooperative resources accumulated... so far are shares... membership fees... and asset resources... our headquarters in our own building... play resources and our activities are credit cooperatives... other than that we also do trading... our resources are also we become authorized dealer for one brand of electrical goods... we have also ventured into other fields as a source it is [Ar-Rahnu] ... we have travel agencies, we have optometrists..... we also go to the properties branch”-P2.*

*“Our financial resources consist of cash.... loans... we really understand the needs of our members... we offer various levels of loan amount... and cash financing is three times savings... for example if a member has RM 5, times 3 is equal to RM 15 thousand ...follow the fee...but five shares we manage as sources efficiently so that the member can benefit from being a member of our cooperative...”-P1.*

To support this point, Mohamad Sabri et al. (2017) claimed that resource management is one of the important elements in measuring the performance of cooperative governance in Malaysia. According to Abd Rahman and Zakaria (2018), The Malaysia Co-operative Societies Commission of Malaysia uses a quality management system to ensure continuous performance improvement. The system assesses the organization's performance based on management responsibilities, resource

management, and product production. Furthermore, outstanding company results and long-term competitive advantage require substantial organizational resources (Fahy 2002; Galbreath 2005). Content analyses of Malaysian cooperative annual reports show that internal resources are a feasible business approach for sustainable competitive advantage based on a past study done by Othman et al. (2018). Accordingly, this study posits:

**P4: The more the efficiency of the resource management, the more the possibility of sustainable development of cooperatives in Malaysia.**

#### 4.5 Theme 5: Leadership

Finally, the last theme discovered in the present study is leadership. In general, numerous scholars have provided various definitions of leadership in the context of management. However, all these critically acclaimed formulations have a common understanding of what leadership is. Consequently, no commonly accepted definition of leadership exists. Leadership can be interpreted in a variety of ways. In the context of leadership in a cooperative, the leader is responsible in determining the objectives, goals, and policies of the operational or management level, selecting members, and preparing the budget. They also organize strategies and resource management to achieve the specified goals. This is aligned with these quotes:

*“Already attended the course many times already... so we want to add our experience such as the use of computers... real estate. We go and then there are various... these courses contribute to knowledge and leadership. It is important to show leadership attitude in cooperatives... and there must be ability and knowledge to manage... we must always improve our knowledge for better leadership... ..”-P1.*

*“We are directly involved with the existing cooperative managers... we will take any profitable business.... We run... we help our other members... we don't just rely on commercials today we will look further... we will plan better”-P2.*

Obviously, there is no distinction between membership and ownership in a cooperative, and leadership is derived from that sense of ownership. Because all members are owners, they should be leaders, regardless of their daily operations tasks. Cooperative leadership is more facilitative than prescriptive, focusing on bringing out the best in others instead of telling them what to do. Cooperatives are formed when a group of people bands together to meet a shared need, such as financial capital. Great leaders think similarly, focusing on their team members, stakeholders, and the communities' specific needs. Employee-led innovation is a critical component of cooperative leadership since those closest to the task will have the best idea of what is required to contribute the most value. This is associated with these quotes:

*“I first got involved with a university cooperative, I became the director of an entrepreneurship centre, then I got involved with a Malaysian small entrepreneur cooperative, while I was working in a bank... .. Then I became a MARA consultant and got a project to train small entrepreneurs... I became a leader and set up several cooperatives because I saw an advantage when setting up this cooperative... one of them is support~~~~”-P3.*

*“Our chairman... The idea to open this cooperative was... at that time he was still studying... he did not have knowledge about cooperatives, but he was interested in learning... he had a story where it inspired his passion to help people... with business... he wanted to help people. After finishing his studies, he was determined to open a cooperative with the intention of helping people.... In our mission vision, we also emphasize the spirit to do business among our cooperative members... we who lead this cooperative do not forget about welfare... for the good and benefit of our cooperative members, staff and the public... we have set our goals”-P4.*

To support this point, Sultan et al. (2018) said that the type of leadership style chosen for an organization has an impact to the development of the purpose and the strategy’s implementation. According to Nahum and Carmeli (2020), the leader’s style is believed to be essential in achieving organizational goals. A past study by Nyide (2020) revealed that the transformational leadership style and its effectiveness in moving job-related needs have a substantial link. Evidence demonstrates that transformative leadership is effective in ensuring that the investigated cooperative achieves its organizational objectives. This research adds to the body of knowledge on identifying and evaluating effective leadership styles for cooperative banks in emerging economies.

Meanwhile, other empirical studies done by Martinez-Leon et al. (2020) on 114 Spanish Cooperative firms found leadership styles such as transformational and transactional being extensively used. There are no substantial differences in leadership styles between men and women, and the composition of management teams causes major differences in leadership style. In addition, transformational leadership is applied less frequently in mixed teams with a male majority and a female president, and more regularly in homogeneous teams. Transactional leadership is used more commonly in all-female teams than in mixed-gender teams with a female president. These findings describe women’s leadership styles in cooperatives, highlighting their challenges and proposing innovative solutions to help them succeed and meet the Sustainable Development Goals in cooperatives. Indeed, cooperatives have a high social capital, which means high trust between leaders and members (Dave 2021). Hence, this study suggests:

**P5: The higher the level of leadership possessed by cooperative members, the higher the possibility of sustainable development of cooperatives in Malaysia.**

## 5 Limitation and Conclusion

Generalization may not be possible because this study used qualitative methods rather than statistical analysis (Koppe et al. 2021; Smith 2018). However, several limitations such as the sole focus on some business natures in cooperative organisations may not yield a significant evidence on the determinants of sustainable development by other types of cooperatives in various industries. Next, this study’s sample case was relatively small, which could affect the result. Finally, due to the case study’s nature,

no conclusions can be made to other businesses that are unrelated to Malaysian cooperatives. As a result, further similar research utilizing different approaches must be conducted on various cooperative company industries. Additionally, this study also suggests some propositions, and future studies to test it by statistical analysis. In brief, this study shows the underlying determinants in cooperatives for a sustainable development. In brief, all the determinants discovered in this study are vital for the sustainable development of cooperative organizations. Member participation concerns the viability of the cooperative, and active member participation can produce a better cooperative performance and promote a sustainable development. Good governance is at the heart of any successful cooperative. Cooperatives need to achieve their objectives, drive improvement, maintain organizational position, and defend their members' welfare. Meanwhile, strategies must be in place to support the functions and operations of the cooperative. Managing resources effectively helps cooperatives provide services on time. This is because a better resource management helps improve the perception of resource availability and improve the cooperative's operational performance. Also, leadership is an essential factor in making a cooperative a successful organization. This is the process of influencing people to perform a given task willingly, efficiently, and competently. This study significantly contributes to the existing sustainable development literature and provided the foundation for future research in the context of cooperatives. This research contributes to the current literature on sustainable development and lays the groundwork for future research. Finally, the outcomes of this study will assist the government in improving policy, governance, and programmes to support Malaysian cooperatives. Also, an effective compliance with the Malaysian Cooperative Societies Commission Act will promote franchise growth and development, promoting Malaysian cooperatives' long-term sustainability.

## References

- Abd Rahman, N., Zakaria, Z.: Kecekapan Pengurusan Koperasi Di Malaysia. *J. Nusantara Stud.* **3**(2), 134–146 (2018). <https://doi.org/10.24200/jonus.vol3iss2pp134-146>
- Abd Aziz, N.A., Hanafiah, M.H., Abd Latif, M.N.: Supply chain management in franchising literature review: synthesis of conclusions. *LogForum* **16**(4), 521–534 (2020). <https://doi.org/10.17270/J.LOG.2020.513>
- Abd Aziz, N.A., Hanafiah, M.H., Hussin, N.S.N., Latif, M.N.A., Aziz, Z.A.: Franchising relationship: Malaysian franchisees' perspectives. In: Alareeni, B., Hamdan, A., Elgedawy, I. (eds.) *The Importance of New Technologies and Entrepreneurship in Business Development: In The Context of Economic Diversity in Developing Countries*. ICBT 2020. LNNS, vol. 194. Springer, Cham (2021). [https://doi.org/10.1007/978-3-030-69221-6\\_23](https://doi.org/10.1007/978-3-030-69221-6_23)
- Abd Aziz, N.A., Hanafiah, M.H., Abd Hamid, H., Mat Isa, R.: Survival of franchising firm: a study of self-service laundry franchisor. *Int. J. Entrepreneurship* **23**(4), 1–6 (2019)
- Amini, A., Ramezani, M.: Investigating the success factors of poultry growers' cooperatives in Iran's western provinces. *World Appl. Sci. J.* **5**(1), 81–87 (2008)
- Apostolakis, G., Van Dijk, G.: Cooperative Organizations and Members' Role: A New Perspective (2018)

- Araya, H.M., Mas, E., Garrido, F.: Sustainability reporting in European cooperative banks: an exploratory analysis. *Revesco* **115**, 30–56 (2014)
- Azhari, M.N.S., Hasan, I., Abd Majid, M.S.: The role of cooperative in the Indonesian economy. *Int. J. Humanit. Soc. Sci. Innov.* **6**(10), 43–46 (2017)
- Babalola, A.: Corporate governance and cooperative societies: a survey of tertiary institutions in Oyo, Nigeria. *Dev. Country Stud.* **4**(12), 8–18 (2014)
- Berg, B.L.: Qualitative research methods for social the sciences. In: Jeff Lasser, A.C. (ed.) *Addiction*, 5th edn. Pearson Education Inc., Boston (2004). [https://is.muni.cz/el/1423/jaro2013/MVZ453/um/Berg\\_-\\_Qualitative\\_research\\_methods.pdf](https://is.muni.cz/el/1423/jaro2013/MVZ453/um/Berg_-_Qualitative_research_methods.pdf)
- Berg, B.L.: *Qualitative Research Methods*, 7th edn. Allyn and Bacon, Pearson Education Inc., Boston (2008)
- Brasileira, R., Gestão, D., Negócios, D.: A distinctive analysis of case study, action research and design science research. *Rev. Bus. Manag.* **17**(56), 1116–1133 (2015). <https://doi.org/10.7819/rbgn.v17i56.2069>
- Braun, V., Clarke, V.: Using thematic analysis in psychology. *Qual. Res. Psychol.* **3**, 77–101 (2006). <https://doi.org/10.1191/1478088706qp063oa>
- Brehmer, M., Podoyntsina, K., Langerak, F.: Sustainable business models as boundary-spanning system of value transfers. *J. Clean. Prod.* **172**, 4514–4531 (2018)
- Castilla-Polo, F., Sanchez-Hernandez, M.I.: Cooperatives and sustainable development: a multilevel approach based on intangible assets. *Sustainability* **12**, 4099 (2020). <https://doi.org/10.3390/su12104099>
- Creswell, J.W.: Qualitative inquiry and research design: choosing among five traditions. In: Deborah Loughton, C. (ed.) *Narrative, Phenomenology, Grounded Theory, Ethnography, and Case Studies*. Sage Publication Inc., Thousand Oaks (2008). [https://www.sagepub.com/sites/default/files/upm-binaries/22780\\_Chapter\\_1.pdf](https://www.sagepub.com/sites/default/files/upm-binaries/22780_Chapter_1.pdf)
- Creswell, J.W.: *Research Design: Qualitative, Quantitative and Mixed Methods Approaches*, 4th edn. Sage Publication Ltd., Thousand Oaks, New Delhi (2014)
- Creswell, J.W., Clark Plano, V.L.: *Designing and Conducting Mixed Methods Research*, 2nd edn. Sage Publication Inc., Thousand Oaks (2011)
- Dave, M.: Resilient to crises: how cooperatives are adapting sustainably to overcome COVID-19- Induced challenges. *Int. J. Rural. Manag.* **17**(1), 13–39 (2021). <https://doi.org/10.1177/0973005221991624>
- Dejene, E., Getachew, D.: Factor affecting success of agricultural marketing cooperatives in Becho Woreda, Oromia regional state of Ethiopia. *Int. J. Coop. Stud.* **4**(1), 9–17 (2015)
- Denzin, N.K., Lincoln, Y.S.: *The SAGE Handbook of Qualitative Research*. In: Knight, V. (ed.), 4th edn. Sage Publication Inc., Thousand Oaks (2011)
- Douvitsa, I., Kassavetis, D.: Cooperatives: an alternative to water privatization in Greece. *Soc. Enterp. J.* **10**(2), 135–154 (2014)
- Dyllick, T., Hockerts, K.: Beyond the business case for corporate sustainability. *Bus. Strateg. Environ.* **11**(2), 130–141 (2002). <https://doi.org/10.1002/bse.323>
- Elkington, J., Rowlands, I.: Cannibals with forks: the triple bottom line of 21st century business. *Altern. J.* **25**(4), 42 (1999)
- Fahy, J.: A resource-based analysis of sustainable competitive advantage in a global environment. *Int. Bus. Rev.* **11**(1), 57–78 (2002)
- Friese, S.: *Qualitative Data Analysis with Atlas.ti*. Sage Publication Ltd., London, Thousand Oaks, New Delhi and Singapore
- Galbreath, J.: Which resources matter the most to firm success? An exploratory study of resource-based theory. *Technovation* **25**(9), 979–987 (2005)
- Hao, J.: Cooperative Member Commitment, Trust and Social Pressure- The Role of Members' Participation in the Decision-Making. In: 30th International Conference of Agricultural Economist, pp. 1–21. Wageningen University, Netherlands (2018)
- Hendriani, S.: The role of cooperative development strategy to improving the success of village cooperative (KUD) in Riau Indonesia. *Int. J. Law Manag.* (2016)

- Idris, I., Safaai, S.: *Pengenalan Koperasi*. Utusan Publications and Distributors Sdn Bhd (2012)
- International Cooperative Alliance: *Sustainability Reporting for Co-operatives: A Guidebook*. Sustainability Solutions Group, 26 July 2021. <https://www.ica.coop/sites/default/files/publication-files/ica-sustainability-reporting-guidebook-%0A1497476007.pdf>
- Ismail, M., Zainol, F.A., Yusoff, M.N.H., Che Rusuli, M.S.: The driving force of the business sustainability model among co-operatives in Malaysia. *J. Soc. Sci. Res.* **5**(3), 2413–6670 (2019). <https://doi.org/10.32861/jssr.53.826.829>
- Ismail, M., Zainol, F.A., Yusoff, M.N.H., Owosu, J., Wan Ibrahim, W.K.: Developing a co-operative sustainability model (CSM) in Malaysia: what's driving them? *Int. J. Innov. Creativity Change* **7**(10), 209–218 (2019)
- Koppe, S., Levin, K., Hansen, J.M., Jensen, T.B., Roald, T.: Why do we always generalize in qualitative research. *Qual. Psychol.* **8**(1), 69–81 (2021). <https://doi.org/10.1037/qup0000138>
- Labra, O., Castro, C., Wright, R., Chamblas, I.: Thematic analysis in social work: a case study. In: *Social Work Education*, pp. 1–20. IntechOpen (2019). <https://doi.org/10.5772/intechopen.89464>
- Lluch, D.B., Gomis, F.J., Jimenez, F.: A management model for the evaluation of cooperative success with special reference to member objective setting and satisfaction. *Int. J. Coop. Manag.* **3**(1), 44 (2006)
- Martinez-Leon, I.M., Olmedo-Cifuentes, I., Matinez-Victoria, M.C., Arcas-Lario, N.: Leadership style and gender: a study of Spanish cooperatives. *Sustainability* **12**(5107), 1–23 (2020). <https://doi.org/10.3390/su12125107>
- Merriam, S.B., Tisdell, E.J.: *Qualitative Research*, 4th edn. Wiley, New York (2016)
- Mohamad Sabri, S., Saad, R.A.-J., Abu Bakar, A.: A research model of cooperative governance performance in Malaysia. *J. Humanit. Lang. Culture Bus.* **1**(3), 131–144 (2017)
- Monteiro, N., Stewart, G.: Scale, scope and survival: a comparison of cooperative and capitalist modes of production. *Rev. Ind. Organ.* **47**(1), 91–118 (2015). <https://doi.org/10.1007/s11151-015-9464-1>
- Moskovich, Y.: Business sustainability strategy in cooperative kibbutz industry. *Sustainability* **12**(1), 9172 (2020). <https://doi.org/10.3390/su12219172>
- Nahum, N., Carmeli, A.: Leadership style in a board of directors: implications of involvement in the strategic decision-making process. *J. Manag. Gov.* **24**(1), 199–227 (2020)
- Neuman, W.L.: *Social Research Methods: Qualitative and Quantitative Approaches*, 4th edn. Pearson Education Limited, Boston (2000). <https://cleavermonkey.files.wordpress.com/2015/10/w-lawrence-neuman-social-research-methods-qualitative-and-quantitative-approaches-pearson-education-limited-2013.pdf>
- Neuman, W.L.: *Social Research Methods: Qualitative and Quantitative Approaches*, 7th edn. Pearson Education Limited, Boston (2014)
- Neuman, W.: *Social Research Methods Qualitative and Quantitative Approaches*, 7th edn. Pearson Education Limited, New York (2011)
- Niu, W.: Theory and practice of China's sustainable development. *Bull. China Acad. Sci.* **27**, 280–289 (2012)
- Nooraslinda, A., Marziana, M., Rohana, O., Safawi, A., Norashikin, H.: Designing indicators for cooperative sustainability: the Malaysian perspectives. *Soc. Responsib. J.* **14**(1), 226–248 (2018)
- Nyide, C.J.: Effective leadership styles for cooperatives banks in an emerging economy. *J. Legal Ethical Regul. Issues* **23**(4), 1–14 (2020)
- Olawumi, T.O., Chan, D.W.: A scientometric review of global research on sustainability and sustainable development. *J. Clean. Prod.* **183**, 231–250 (2018). <https://doi.org/10.1016/j.jclepro.2018.02.162>
- Ortmann, G., King, R.: Agricultural cooperatives, history, theory and problems. *Agrekon* **46**, 40–68 (2007). <https://doi.org/10.1080/03031853.2007.9523760>
- Othman, T.: *Analisis Data Kualitatif Dengan Atlas.ti 8*. Penerbit Universiti Putra Malaysia (2019)
- Othman, A., Mansor, N., Kari, F.: Assessing the performance of co-operatives in Malaysia: an analysis of co-operative groups using a data envelopment analysis approach. *Asia Pac. Bus. Rev.* **20**(3), 484–505 (2014). <https://doi.org/10.1080/13602381.2014.933065>



- Othman, I.W., Mohamad, M., Abdullah, A.: Cooperative movements in Malaysia: the issue of governance. *World Acad. Sci. Eng. Technol.* **7**(6), 1488–1492 (2013)
- Othman, R., Arshad, R., AbdulArif, N., MohdArif, S.M.: Exploiting resources for competitive advantage of cooperative organizations in Malaysia. *Asian J. Behav. Stud.* **3**(12), 63–71 (2018)
- Othman, R., Embi, R., Abdul Arif, N., Mohd Arif, S.M., Choo, H.C., Ismail, N.: Board governance and performance: an exploratory study of Malaysian cooperative organizations. *J. Southeast Asian Res.* **1–12**, 59 (2016). <https://doi.org/10.5171/2016.430025>
- Palinkas, L.A., Horwit, S.M., Green, C.A., Wisdom, J.P., Duan, N., Hoagwood, K.: Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Adm. Policy Mental Health* **42**(5), 533–544 (2016). <https://doi.org/10.1007/s10488-013-0528-y>
- Patton, M.Q.: *Qualitative Research and Evaluation Methods*, 3rd edn. Sage Publication Inc., Thousand Oaks (2002)
- Patton, M.Q.: *Qualitative Research and Evaluation Methods*, 4th edn. Sage Publication Inc., Thousand Oaks (2015)
- Pezzini, E.: Cooperatives, good companies ‘by definition’? In: *The Sixth International Conference on Catholic Social Thought and Management Education*, pp. 1–24, Rome (2006)
- Pigou, A.: *The Economics of Welfare*. Macmillan, London (1920). <https://doi.org/10.2307/2224491>
- Rajaratnam, S.D., Noordin, N., Said, M.A.S., Juhan, R., Mohd Hanif, F.: Success factors of cooperatives in Malaysia: an exploratory investigation. *Malays. J. Co Oper. Stud.* **6**, 1–18 (2010)
- Sarmila, M., Che Rose, R.A., Selvadurai, S., Ramly, R.: Peranan Koperasi Dalam Meningkatkan Pendapatan Pekebun Kecil: Kajian Kes Koperasi Penanaman Sawit Mampam (KPSM). *Geografi* **5**(3), 64–71 (2017)
- Schaltegger, S., Ludeke-Freund, F., Hansen, E.: Business cases for sustainability: the role of business model innovation for corporate sustainability. *Int. J. Innov. Sustain. Dev.* **6**(2), 95 (2012)
- Setianingsih, W., Mulyatini, N., Herlina, E., Abdul Kader, M., Lisara, A.: the retention strategy of cooperative business in industrial revolution era 4.0. *Int. J. Innov. Creativity Change* **10**(10), 594–608 (2020)
- Shamsuddin, Z., Mahmood, S., Ghazali, P.L., Salleh, F., Md Nawi, F.A.: Indicators for cooperative performance measurement. *Int. J. Acad. Res. Bus. Soc. Sci.* **8**(12), 577–585 (2018). <https://doi.org/10.6007/IJARBSS/v8-i12/5056>
- Shi, L., Han, L., Yang, F., Gao, L.: The evolution of sustainable development theory: types, goals and research prospects. *Sustainability* **11**(24), 1–16 (2019)
- Silverman, D.: *Qualitative Research*, 4th edn. Sage Publication, Thousand Oaks (2016)
- Smit, B.: Atlas.ti for qualitative data analysis. *Perspect. Educ.* **20**(3), 65–75 (2002). [https://repository.up.ac.za/bitstream/handle/2263/4813/Smit\\_Atlas\(2002\).pdf](https://repository.up.ac.za/bitstream/handle/2263/4813/Smit_Atlas(2002).pdf)
- Smith, B.: Generalizability in qualitative research: misunderstandings, opportunities and recommendations for the sport and exercise sciences. *Qual. Res. Sport* **10**(1), 137–149 (2018). <https://doi.org/10.1080/2159676X.2017.1393221>
- Stagl, S.: Theoretical foundations of learning processes for sustainable development. *Int. J. Sustain. Dev. World* **1**, 52–62 (2007). <https://doi.org/10.1080/13504500709469707>
- Steer, A., Wade-Gery, W.: Sustainable development: theory and practice for a sustainable future. *Sustain. Dev.* **1**, 23–25 (1993). <https://doi.org/10.1002/sd.3460010306>
- Strauss, A.L., Corbin, J.M.: *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. In: Strauss, A.L. (ed.). Sage Publication Inc., Thousand Oaks (1990)
- Strauss, A.L., Corbin, J.M.: *Basics of Qualitative Research*. Knight, V. (ed.), 4th edn. Sage Publication Inc., Boston (2015)
- Sultan, Y.A., Al-Shobaki, M., Abu-Naser, S., El-Talla, S.: The style of leadership and its role in determining the pattern of administrative communication in Universities-Islamic university of Gaza as a model. *Int. J. Acad. Manag. Sci. Res.* **2**, 626–642 (2018)
- United Nations: *Cooperatives in Social Development and Implementation of the International Year of Cooperatives*. United Nations, New York (2011)



- Veer Singh, G.S., Che Senik, Z., Hanafiah, M.H.: The relationship between management functions and the success of school cooperatives. *Int. J. Manag.* **11**(7), 226–235 (2020). <https://doi.org/10.34218/IJM.11.7.2020.022>
- Veer Singh, G.S.: Pengaruh Inovasi Terhadap Kejayaan Koperasi Di Malaysia. In: National Research Seminar 2020. Universiti Pendidikan Sultan Idris, Tanjung Malim, Perak (2020)
- Veer Singh, G.S., Che Senik, Z., Hanafiah, M.H., Abdul Hamid, R.: The effects of strategic management practices on cooperatives performance: the Malaysian insight. *Acad. Strateg. Manag. J.* **20**(3), 1–10 (2021)
- Wakili, B., Nsofor, G., Suleiman, Y.: Effects of anthropogenic activities and eutrophication along River Chanchaga, Minna, Nigeria. *Asian Rev. Environ. Earth Sci.* **4**(1), 58–64 (2017)
- Whiteman, G., Walker, B., Perego, P.: Planetary boundaries: ecological foundations for corporate sustainability. *J. Manag. Stud.* **50**(2), 307–336 (2013)
- Yin, R.K.: *Case Study Research: Design and Methods*, 3rd edn. Sage Publications, Thousand Oaks (2003)
- Yin, R.K.: *Case Study Research Design and Methods*, 4th edn. Sage Publication Inc., Thousand Oaks (2009)
- Yin, R.K.: *Case Study Research Design and Methods (5th Revise)*. Sage Publication Inc., Thousand Oaks (2013)
- Yin, R.K.: *Case Study Research: Design and Methods*. Sage Publications, Thousand Oaks (2018)
- Yuill, H.: Leadership in hegemony: sustainability reporting and cooperatives. In: *Co-operatives for Sustainable Communities: Tools to Measure Cooperative Impact and Performance*, pp. 294–310 (2015)
- Zeuli, K., Cropp, R., Erickson, D., Nadeau, E., Trechter, D., Vilstrup, R.: Cooperatives: principles and practices in the 21st century. In: *Principles and Practices in the 21st Century* (2004)

# Impact of Employee's Engagement and Task Identity on Employee's Retention Strategy Mediated by Job Satisfaction



**Ishaq Ibrahim, Kalsom Ali, Ibrahim Azzam Alzoubi, Mohammad Mahmoud Alzubi, Ali AL-Tahitah, and Kadhim Ghaffar Kadhim**

**Abstract** This study aims to examine factors expected to be effective on employee retention strategy in the Malaysian industries. Employee engagement and task identity are tested for its' direct impact on employee retention, while job satisfaction will be examined as mediator of the relationships between the independent and dependent variables. the study follows the quantitative method of data collection, the survey distributed among employees in the Malaysian industries and 463 surveys collected as valid questionnaires for data analysis. The collected data analysed descriptive analysis via Social Package for Social Science SPSS and hypothesis testing via Analysis of a Moment Structure AMOS. The study found a direct significant impact of employee engagement, task identity and job satisfaction on employee retention, and job satisfaction significantly playing the role of mediating the relationship between employee engagement and employee retention and insignificant mediating role on the relationship between task identity and employee retention. Accordingly, these factors should be implemented by the Malaysian industries toward a successful employee retention in the country.

**Keywords** Employee's retention · Task identity · Employee engagement · Job satisfaction · Retention strategies

---

I. Ibrahim (✉) · K. Ali · A. AL-Tahitah  
Faculty of Leadership and Management, Universiti Sains Islam Malaysia, Nilai, Malaysia  
e-mail: [ishaq@usim.edu.my](mailto:ishaq@usim.edu.my)

I. A. Alzoubi · M. M. Alzubi  
Department of Finance and Management, Al-Madinah International University, Kuala Lumpur, Malaysia

K. G. Kadhim  
Faculty of Technology Management and Business, Universiti Tun Hussein Onn, Batu Pahat, Malaysia

## 1 Background

Nowadays employees looking for consistence job and jobs for life. Acikgoz (2019) indicated that employment reflects more than just hiring. Accordingly, researchers shall concentrate further on how to retain employees but not why they turnover toward improvement of the industries, understanding the reasons of making employees decide to stay is more important (Melhem 2019).

Ibrahim et al. (2019) concluded that there is lack of awareness about the employee's situation in Malaysia, while there are the worthiest source in the firm. The business world competition on the skillful, experts, and productive workforce making the employee retention as the crucial strategy to win the competitors in the market (Jimad 2020).

Employee retention strategies were discussed previously and concluded that there are several factors effect the employee's retention according to the organizational culture, employee age range, working place environment, and industry (Murtiningsih 2020). In addition, Kurdi and Alshurideh (2020) confirmed stuff retention as an essential factors toward consistency and sustainability. This study is exploring the Malaysian manufacturing industry. In the manufacturing industries employees had been expected to demonstrate greater level of loyalty within the time. Meanwhile, Ibrahim et al. (2019) discussed the obstacles and barriers of getting fit in a new job, which it supposedly to be considered by both employees and employers. Thus, there is a high competition amongst the employees as well toward getting a stable job. The poor details and clarifications of the giving tasks was one of the crucial issues reported in the organizations, which is negatively effecting the employees intention to remain due to confusion and inconveniency (Ibrahim et al. 2021a).

Mainly, Datuk Seri Dr S. Subramaniam, the former minister of human resource in Malaysia announced in 2012, there is existed issue related to employees and employment rates, including turnover, working environment, working conditions, and employees security. The mentioned earlier will definitely influence the future of the employment in the country as well as the culture and believe of the upcoming generations (Ghazali et al. 2018). In addition, there is a strong connection between satisfaction and retention of the employees in the Malaysian industries especially the manufacturing industry (Ibrahim et al. 2021b). Ashraf and Siddiqui (2020) stated that engagement was among the factors that predict the intent of employees to either stay or leave. Tajuddin et al. (2015) found that engagement is crucial to retain talented employees. On the other hand, it was reported by some studies that lack of engagement led to less loyalty, learning, and knowledge exchange. Wang et al. (2015) stated that the given tasks shall be turned into clear and interesting tasks instead of complicated to be successfully achieved. As reported in previous studies (Ghazali et al. 2018; Ismail and Shaari 2019) there is a problem of retaining employees in Malaysian industries.

## 2 Literature Review

This section contains the overview of the variables would be studied. Innovation performance, innovation open mindset, human resource management and knowledge management will be separately explained in details.

Retention strategies approved to be a process started by retaining to fitting job to achieve the employee satisfaction in the firms (Al Mamun and Hasan 2017). These strategies are different from country to another (Deery and Jago 2015), in this study Malaysian industries would be explored. Turnbull et al. (2020) targeted the engagement of staff toward their jobs and organizations. In this research paper the authors explore the managerial functions which it might enhance the employee's belongingness and engagement to their jobs. Therefore, managers working on create suitable environment and develop suitable strategies for such vision. Higher productivity and efficiency appear to be existed in the firms with satisfy employees, this feelings could convince the staff to stay in their firms (Ibrahim 2021). In the Malaysian manufacturing industry there are several and certain factors influencing the employees performance and intentions, there are financial and non-financial factors but it's all lead to achieving the stability and afford the employee's needs, which are the most important and concerned aspects by the employees (Hajian and Kaliappan 2018).

The engagement of the employees in the working place has been explored as an effective factor in the firms affected by the leadership style, which it's about pattern of treatment in the workplace (Decuypere and Schaufeli 2019). Delina (2020) stated that there shall be high engagement amongst the employees in the Malaysian manufacturing industries. Teo et al. (2020) explained engaged employee as measure of employees commitment, physically and mentally involved into their organizations goals and achievements. Such details in the working place enriches the employee's performance and encourage the staff to come up with ideas and abilities. Such employees are more likely to talk constructively about the organization, stay with the organization, and assist the organization in achieving better performance. As reported in several past studies (Boyd and Nowell 2020; Guo et al. 2020), the more the staff engaged reflected on their individual and group performance, and improve their skills, knowledge, and developing culture of achievement and achievement. As revealed by a recent meta-analysis by Gupta et al. (2017), there is a positive link between work engagement and in-role and extra role performance. According to the authors, work engagement encompasses an investment of personal resources and energy in the completion of work tasks. The effect of interaction of work engagement and task identity can be reflected on job performance and retention of employees (Wang et al. 2015). As mentioned in Resh and Sabbagh (2014), employee engagement is vital in generating better outcomes and job satisfaction.

Task identity is more likely to access the employees to their tasks and giving them full control on the details of achieving the task (Ali et al. 2014). As well as Hauff et al. (2015) reported the connection of task identity toward achieving job satisfaction. In Österberg et al. (2017), the researchers defined task identity as being in charge to select the optimal method and certain details to finish up the tasks in the

best timing and getting the best expected results of it. In Choudhary (2016) stated that knowledge, experience and knowledge will surely influence the ability of the employees in implementing task identity, and identify either positive or negative consequence of the concept practicing. Yuen et al. (2018) described task identity as among the factors of job characteristics with a positive impact on job satisfaction. Acikgoz (2019) indicated that employees would feel more acknowledged for their accomplishments. Furthermore, the author added that the provision of challenging tasks to employees will enhance their confidence and motivation, which in turn will fortify their decision to stay at their job. Pandey et al. (2016) additionally described task identity as a dimension of challenging work which could predict job satisfaction and employee retention. In the literature relevant to the population of the study the researcher found task identity to be the most possible effective factor on employee retention due to the compliment of the employees about the tasks have given to them, meanwhile there is no prior studies explore task identity impact on employee retention in the population of the study.

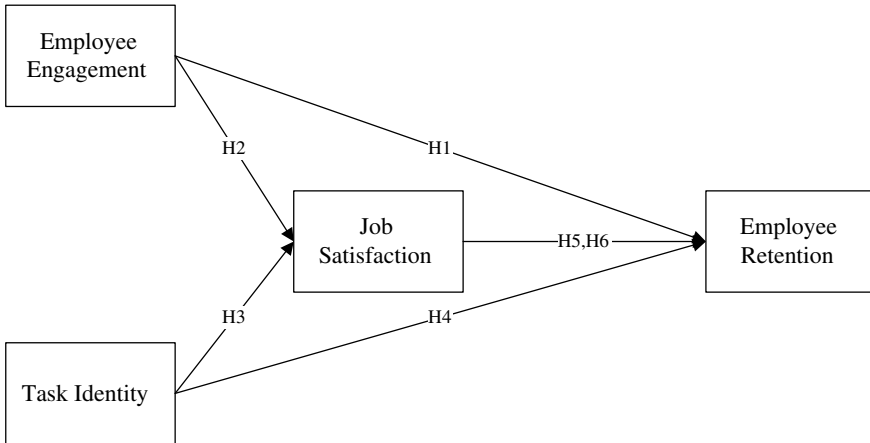
Tziner et al. (2014) stated that job satisfaction encompasses the pleasant emotional status in assessing the job experience of a person resulting in internal rewards or external rewards from the organization. Abdul et al. (2018) provided the details of the construct as follows: job satisfaction relates to the customarily predominant positive attitude towards numerous job aspects. In the context of work, job satisfaction denotes the customarily predominant positive attitude towards a person's work as whole, whereas in the context of organization, job satisfaction refers to the customarily predominant positive attitude towards a person's organizations as whole. Bacea and Bordean (2016) indicated that the fulfilment of the levels of job satisfaction of employees may reduce turnover rates and may lead to organizational success. Among Malaysian organizations, Huey Yiing and Zaman Bin Ahmad (2009) examined job satisfaction generally.

### 3 Study's Framework

In this study, the authors attempted to ascertain the significance of testing the effect of job satisfaction on the organizations through direct and indirect impact. The researcher established this conceptual model based on three theoretical model including Herzberg's two factor theory and selection of motivational factors toward increasing the job satisfaction in the industry, and Maslow's hierarchy needs support the existence of employee engagement in the model and Job characteristics model is supporting the existence of task identity. Thus, this theoretical model has been turned into a conceptual framework as below (Fig. 1).

H1: There is a significant impact of employee engagement on employee retention in the Malaysian manufacturing industry.

H2: There is a significant impact of employee engagement on job satisfaction in the Malaysian manufacturing industry.



**Fig. 1** Conceptual framework

H3: There is a significant impact of task identity on job satisfaction in the Malaysian manufacturing industry.

H4: There is a significant impact of task identity on employee retention in the Malaysian manufacturing industry.

H5: There is a significant mediating role of job satisfaction on the relationship between employee engagement and employee retention in the Malaysian manufacturing industry.

H6: There is a significant mediating role of job satisfaction on the relationship between task identity and employee retention in the Malaysian manufacturing industry.

## 4 Methodology

This study is following the quantitative method to collect the data of the employees in different Malaysian industries as the population of the study. To accomplish the quantitative method there is a survey has been adapting items to present the variables of the study. The researcher adapted items to present each variable. Thus, to avoid lack of representing items in case any elimination needed in the data analysis stages. The survey distributed among the employees in several cities located in different states Selangor, Putrajaya, Cyberjaya, Negeri Sembilan and Klang. As these places among the most attractive foreign investment which made Klang Valley area as the most vital area in the country, as well to encourage the investors the Malaysian government pumped it by millions to contribute more in the Malaysian economy and being the center of the prosperity, while its currently contains approximately 60% of employment in the country. According to the experts in the Ministry of Domestic

**Table 1** Questionnaire's sources

Section	Source	No. of items
Employee retention	Njoroge (2007), Alsaad (2016), McKay et al. (2007)	7
Employee engagement	Schaufeli et al. (2002)	5
Task identity	Hackman and Oldham (1980)	7
Job satisfaction	Armstrong-Stassen and Ursel (2009), Yip et al. (2013), Sabbagha (2016)	6

Trade the number of the employees in these areas reach to  $N = 1,075,849$  employees which it should be sampled by 384 (Krejcie and Morgan 1970). It is recommended to have large sample size because Creswell (2009) stated that huge simple random sampling design targets a bigger population without specific characteristics. The researcher targeted firms employed more than 100 employees and distribute 750 survey among employees in 25 firms to avoid a smaller number of surveys returned (Hair et al. 2013). 480 surveys returned from 18 firms while only 463 were fit to be analyzed. The researcher adapted the questionnaires from previous researcher (see Table 1) with some edition according to the industries and environment of the current study and the type of employees.

The survey designed to fit the Malaysian employees, the employees in the Malaysian industries mostly are able to read and speak English either they are foreigners so they just speak Bahasa Malaysia but don't read it, the managers of the firms recommended the researcher to use English so the management could afford assistance to fill up the surveys. It's been designed as five Likert scales starting by 1 = strongly disagree to 5 = strongly agree.

## 5 Findings and Discussion

The collected data has been analyzed via SPSS for the descriptive analysis and via AMOS for the hypothesis testing. The first step of the descriptive analysis including demography, normality, reliability and factor loading sections. Moving to the confirmatory factor CFA analysis and exploratory factor analysis via AMOS.

The response rate of 76% described below in Table 2 shows that the highest present of the participants in the age range of 31–40 Years old in 35.4% of the total participants while the lowest present of 6.7% in the age range of more than 40 Years old. Most of the employees were men in a percent of 81.4%. Furthermore, the participants indicate the highest period of working in the current firm in the range of 1–3 years with a percent of 51.6% as the majority of the sample, which is showing the presence of the problem of having lack in retention in the Malaysian industries, while only 1.9% of them work in the current firm for more than 10 years.

Most of the participants were high school education holders of 30.5% and only 3.6 are postgraduate holders. The participants mostly are married of 68.5% out of

**Table 2** Respondent profile

Variable	Group	Number	Percent
Age	19–22	49	10.6%
	23–25	72	15.6%
	26–30	147	31.7%
	31–40	164	35.4%
	More than 40	31	6.7%
Gender	Woman	86	18.6%
	Man	377	81.4%
The period in the present Job (year)	1–3	239	51.6%
	3–5	135	29.2%
	5–10	80	17.3%
	More than 10	9	1.9%
Education background	High school	141	30.5%
	Diploma	97	21%
	Degree	80	17.3%
	Postgraduate	17	3.6%
	Others	128	27.6%
Marital status	Single	146	31.5%
	Married	317	68.5%

**Table 3** Cronbach’s alpha

Section	Cronbach’s alpha
Employee retention	0.803
Employee engagement	0.916
Task identity	0.884
Job satisfaction	0.892

total sample number. The reliability test of the questionnaire’s items was all accepted with a score of Cronbach’s Alpha above 0.7 as shown in Table 3.

The next step will show the results of normality test includes valid and missing data, mean, median, mode, skewness, standard error of skewness, kurtosis, and standard error of kurtosis, variance inflation factor VIF and tolerance. the mean, median and mode of the data scored the values as the table shows with accepted skewness and kurtosis values  $-2$  to  $+2$  for both according to Hair et al. (2013).

The Multicollinearity Test including VIF values were in the accepted range of above 1 and tolerance values were accepted as well above 0.5 (Hair et al. 2010). While the factors loading for each shall be removed if below 0.4 and greater than 1, either its loading on more than a variable (Garson 2012; Hair 2010; Huck 2012). The factor’s loading for this study as shown in Table 5 indicates accepted loading for all the variables above 0.6 while only the item ER4 was eliminated due to the dual loading on two factors which it could impact the goodness of the model in the next step of analysis. The experts recommended eliminating such items to be able to proceed the CFA and EFA.



**Table 4** Normality and multicollinearity test

Normality test		ER	TI	EE	JS
N	Valid	463	463	463	463
	Missing	0	0	0	0
Mean		2.7206	2.6311	2.4012	2.4498
Median		2.5000	2.4000	2.3000	2.3000
Mode		1.00	1.00	1.00	1.00
Skewness		-0.991	0.052	0.593	-0.297
Std. error of skewness		0.255	0.255	0.255	0.255
Kurtosis		-0.988	-0.436	-0.790	-0.905
Std. error of kurtosis		0.208	0.208	0.208	0.208
Multicollinearity test					
VIF		-	1.721	1.883	1.740
Tolerance		-	0.751	0.795	0.841

**Table 5** Pattern matrix

Factors					
Items	ER	TI	EE	JS	
ER1	0.803				
ER2	0.842				
ER3	0.726				
ER5	0.815				
TI1		0.830			
TI2		0.691			
TI3		0.711			
TI4		0.738			
TI5		0.862			
EE1			0.884		
EE2			0.692		
EE3			0.726		
EE4			0.934		
EE5			0.745		
JS1				0.904	
JS2				0.792	
JS3				0.669	
JS4				0.813	
JS5				0.743	

The next analysis proceeded is the CFA after the elimination of ER4 for the goodness of the analysis, the model includes all the model's variables to test the correlation among them and ensure the validity of the variables to be in the same model. The results of the data analysis needed also to eliminate one item EE2 which contributes to the goodness of the measurement model scores. The scores of the measurement model after the elimination as in Table 6 were RMSEA scores 0.013 less than 0.08 which is an accepted value according to the accepted scores of the structural equation modeling criteria. The value of CMIN/DF is 2.539 which is less than 3 and has been accepted in the criteria of the analysis, these two values measured with acceptance values referred to Hair et al. (2010). The scores of CFI, TLI, IFI shall always be more than 0.9 (Hu and Bentler 1999). This study stated the values 0.974, 0.968, 0.987 respectively which its accepted, and PCLOSE value of 0.314 which is higher than 0.05 as acceptance value referred to Hu and Bentler (1999).

These results of CFA indicate the illegibility of the variables of the model to proceed toward the EFA. There is a significant correlation among the variables and items and accepted model fit qualifying the model to do the hypothesis testing in the EFA and find the indications of the structural model. The EFA tested the hypothesis of the study, the direct relationship between the independent variables and dependent variable, the model included the mediator for the necessarily presence of all the variables and relationships in the structural model. While there would be a separated test for the mediator after the structural model. The structural model eliminated TI 2 for the goodness of the analysis which it's been reflected positively on the results as shown in Fig. 2 the scored values of the structural model using the same measurement fit criteria in CFA, the results stated RMSEA (0.057), CMIN/DF (1.935), CFI (0.952), TLI (0.916), IFI (0.972). These values are all accepted indicate the goodness of the

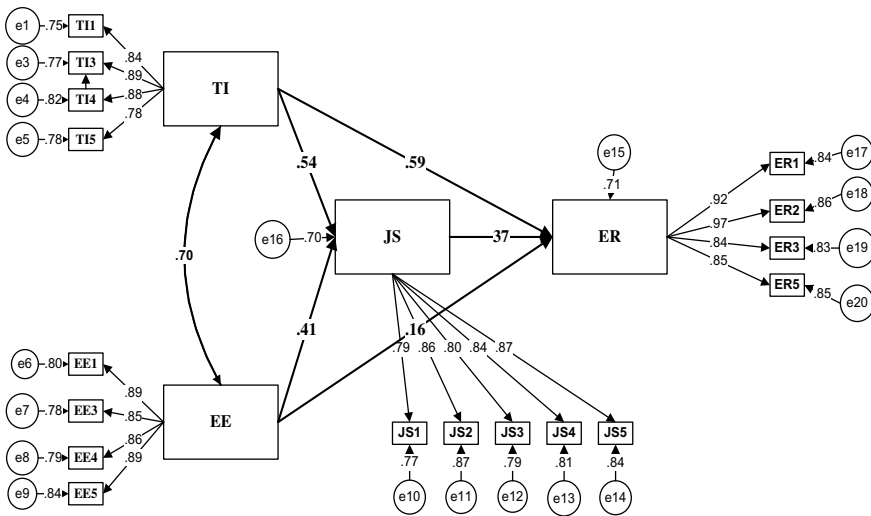


Fig. 2 Structural model

model with CHISQUARE score of 84.094 the figure below shows the structural model of the study.

This figure shows the test and the estimation and correlation scores, which its all accepted and indicate a significant impact of the independent variables on the dependent variable for the hypothesis 1, 2, 3 and 4 are all accepted which it will be discussed at the end of this section. The mediator test for the hypothesis five and six will be comparing between the estimation and significant of the relationship before and after the mediator job satisfaction enter to the model. The first hypothesis testing the influence of employee’s engagement on employee retention directly stated a significant P value 0.012 and coefficient estimate of 0.693, standard error 0.172 and critical ratio of 2.742. This indicates the acceptance of the hypothesis and approve the present of the significant impact of employee engagement on the employee retention in the Malaysian industries. The second hypothesis tested the impact of employee engagement on the mediator job satisfaction with significant value 0.037, coefficient estimate 0.662, standard error 0.471 and critical ratio of 2.518 indicating a significant impact of employee engagement on job satisfaction in the Malaysian industries as the hypothesis accepted. The third hypothesis tested the direct effect of task identity on employee retention results as a significant value of 0.000, coefficient estimate 0.704, standard error 0.822 and critical ratio 3.093 indicates the acceptance of the hypothesis and presence of direct impact of task identity on employee retention in the Malaysian industries. The fourth hypothesis expect the effect of task identity on job satisfaction with significant value 0.023, coefficient estimate 0.817, standard error 0.095 and critical ratio 3.854 found the presence of the relationship between task identity and job satisfaction among the employees in the Malaysian industries as shown in Table 7.

After the mediator enter the model it’s been tested and found hypothesis five accepted that job satisfaction mediates the relationship between employee engagement and employee retention in the Malaysian industries with significant 0.021, coefficient estimate 0.332, standard error 0.077 and critical ratio 3.552. while the direct estimation of employee engagement on employee retention before the mediator was 0.851 and after the mediator is 0.813, the decrease of the estimation indicates the partial mediation of job satisfaction in the relationship (Tables 8 and 9).

Hypothesis six examined the mediation effect of job satisfaction on the relationship between task identity and employee retention, the hypothesis rejected due to the

**Table 6** Results of CFA (measurement model)

Fit measurement criteria	Score	Accepted score
RMSEA	0.013	≤0.08
CMIN/DF	2.539	≤3
CFI	0.974	≥0.9
TLI	0.968	≥0.9
IFI	0.987	≥0.9
PCLOSE	0.314	>0.05

**Table 7** Results of EFA (structural model)

Fit measurement criteria	Score	Accepted score
RMSEA	0.057	≤0.08
CMIN/DF	1.935	≤3
CFI	0.952	≥0.9
TLI	0.916	≥0.9
IFI	0.972	≥0.9
PCLOSE	0.504	>0.05

**Table 8** Results summary

	Path	Sig	Coefficient estimate	Standard error	Critical ratio
H1	EE > ER	0.012	0.693	0.172	2.742
H2	EE > JS	0.037	0.662	0.471	2.518
H3	TI > ER	0.000	0.704	0.822	3.093
H4	TI > JS	0.023	0.817	0.095	3.854

**Table 9** Mediator results

The results before the mediator enter the model					
	Path	Sig	Coefficient estimate	Standard error	Critical ratio
H5	EE > ER	0.000	0.851	0.352	3.663
H6	TI > ER	0.000	0.679	0.118	2.732
The results after the mediator enter the model					
H5	EE > ER	0.000	0.813	0.091	7.514
	EE > JS	0.000	0.770	0.062	8.373
	EE > JS > ER	0.021	0.332	0.077	3.552
H6	TI > ER	0.000	0.790	0.082	6.137
	TI > JS	0.009	0.752	0.171	9.714
	TI > JS > ER	0.064	0.551	0.263	3.115

insignificant value 0.064, coefficient estimate 0.551, standard error 0.263 and critical ratio 3.115. There is insignificant mediation of job satisfaction on the relationship between task identity and employee retention in the Malaysian industries.

Ahsan et al. (2013) suggested the employee engagement to be examined in the Malaysian manufacturing industries. In discussing the retention factors in Malaysia Mustapha and Zakaria (2017) expected employee engagement to be among the useful factors toward higher retention in the country. This study approved the existence of the relationship between employee engagement and employee retention in the Malaysian industries. Furthermore, Mustapha and Zakaria (2013) expected factors to increase satisfaction among employees, recommending employee engagement to

be examined, this study examined the impact of employee engagement on job satisfaction in the Malaysian industries and found with a significant impact on it. This argue results of Ahmad and Abdurahman (2015) stated that there are other results more effective on job satisfaction in Malaysia. Fauzi et al. (2013) reported the lack of studies in job characteristics model impact including task identity on employment in the country. This study found task identity as one of the model's content effect employee retention in the Malaysian industries. Abdul et al. (2010) state the needs of the Malaysian industries for factors controlling employee satisfaction, this study found task identity as one of the factors significantly and positively effect satisfaction in the Malaysian industries. Previously, approved that job satisfaction should be playing a turn on betterment of the Malaysian industries performance (Choi et al. 2016). This study found a fact of mediation effect of job satisfaction on the relationship between employee engagement and employee retention. Finally, the study found that there is insignificant mediation of job satisfaction on the relationship between task identity and employee retention.

Toward an optimal retention strategy in the Malaysian industry this study contributes to add employee engagement and task identity to be among the factors of the formed strategy. As well as, job satisfaction as a construct could effect positively the employee retention ratio either through mediating the relationships or directly as it's shown in the current study. Which indicates the different turns of job satisfaction according to the used variables. This study recommended the future studies to examine further factors such as organizational justice, autonomy, employee involvement, recognition and reward impact on employee retention to enable the future research establishing a complete strategy could work professionally on the employment rate and increase the retention ratios. In addition, this strategy would enhance the industry's performance and contribute in the development of the country's economy.

## 6 Conclusion

This study concludes that toward an employee retention strategy in Malaysia, employee engagement and task identity were examined and found as significant positive factors effecting the employee retention in the country's industry. Thus, job satisfaction is directly significantly impact employee retention and indirectly mediating the relationship between employee engagement and employee retention, while insignificantly mediating the relationship between task identity and employee retention. Such studies could successfully participate in establishing employee retention strategy in the country to develop the country's economy and increase the employment as one of the government concerns in 2030 plan for the goodness of the country. Finally, the research area still lacking knowledge body and needed for further researches to develop the best strategy to solve the problem of lacking retention in the Malaysian industries.

## References

- Acikgoz, Y.: Employee recruitment and job search: towards a multi-level integration. *Hum. Resour. Manag. Rev.* **29**(1), 1–13 (2019)
- Melhem, I.I.A.B.: The mediating effect of job satisfaction on the relationship between belongingness and challenging work towards employee retention (Doctoral dissertation, Universiti Sains Islam Malaysia) (2019)
- Ibrahim, I., Ali, K., Zumrah, A.R.: An empirical study: the mediating role of job satisfaction on the relationship between belongingness and employee retention in Malaysian manufacturing industry. *Int. J. Emerg. Technol.* **10**(1), 11–21 (2019)
- Jimad, H.: Competition among banks and its psychological effect on employee retention and supply chain management in Indonesia. *Int. J. Supply Chain Manag.* **9**(3), 742–749 (2020)
- Murtiningsih, R.S.: The impact of compensation, training & development, and organizational culture on job satisfaction and employee retention. *Indones. Manag. Account. Res.* **19**(1), 33–50 (2020)
- Kurdi, B., Alshurideh, M.: Employee retention and organizational performance: evidence from banking industry. *Manag. Sci. Lett.* **10**(16), 3981–3990 (2020)
- Lelchumanan, B., Ismail, R., Sulaiman, N.: Manpower requirements for selected services subsectors in Malaysia: an input-output analysis. *Int. J. Econ. Manag.* **13**(1) (2019)
- Ibrahim, I., Ali, K., Al-Suraihi, W.A., Al-Suraihi, A.H.A.: The impact of COVID-pandemic and media on sustainability and employee retention, in Malaysian industries. *Int. J. Manag. Hum. Sci.* **5**(2), 1–6 (2021a)
- Ghazali, H., Jules, N.J., Othman, M.: Examining the influence of perceived organizational support towards job-hopping behaviour: a case of casual dining restaurant employees' in Klang Valley Area, Malaysia. *Int. J. Account.* **3**(12), 101–108 (2018)
- Ibrahim, I., Ali, K., Al-Suraihi, W.A., Al-Suraihi, A.H.A.: The impact Of COVID-19 pandemic on sustainability, employee retention, and innovative performance in the Malaysian manufacturing industry. *Asian J. Res. Bus. Manag.* **3**(2), 132–139 (2021b)
- Ashraf, T., Siddiqui, D.A.: The impact of employee engagement on employee retention: the role of psychological capital, control at work, general well-being, and job satisfaction. *Control at Work, General Well-Being, and Job Satisfaction* (2020)
- Tajuddin, D., Ali, R., Kamaruddin, B.H.: Developing talent management crisis model for quality life of bank employees in Malaysia. *Procedia Soc. Behav. Sci.* **201**, 80–84 (2015)
- Wang, H.J., Lu, C.Q., and Siu, O.L.: Job insecurity and job performance: the moderating role of organizational justice and the mediating role of work engagement. *J. Appl. Psychol.* **100**(4) (2015)
- Resh, N., Sabbagh, C.: Justice, belonging and trust among Israeli middle school students. *Br. Edu. Res. J.* **40**(6), 1036–1056 (2014)
- Ali, S.A.M., Said, N.A., Kader, S.F.A., Ab Latif, D.S., Munap, R.: Hackman and Oldham's job characteristics model to job satisfaction. *Procedia Soc. Behav. Sci.* **129**, 46–52 (2014)
- Ismail, H., Shaari, S.M.: Retention factors of Malay male architects in Malaysian architectural design consultant firms in the Klang Valley, Malaysia. In: *MATEC Web of Conferences*, vol. 266, p. 01010. EDP Sciences (2019)
- Al Mamun, C.A., Hasan, M.N.: Factors affecting employee turnover and sound retention strategies in business organization: a conceptual view. *Probl. Perspect. Manag.* **15**(1), 63–71 (2017)
- Deery, M., Jago, L.: Revisiting talent management, work-life balance and retention strategies. *Int. J. Contemp. Hosp. Manag.* **27**(3), 453–472 (2015)
- Turnbull, J.W., Johnston, E.L., Kajlich, L., Clark, G.F.: Quantifying local coastal stewardship reveals motivations, models and engagement strategies. *Biol. Conserv.* **249**, 108714 (2020)
- Ibrahim, I.: factors effecting employees retention in the Malaysian manufacturing industry during the pandemic Covid-19: the mediating role of job satisfaction. *Asian J. Res. Bus. Manag.* **3**(3), 24–39 (2021)
- Hajian, H., Kaliappan, S.R.: The Impact of government debt on output growth, private investment and human capital in Malaysia. *Int. J. Econ. Manag.* **12**(2) (2018)

- Decuyper, A., Schaufeli, W.: Leadership and work engagement: exploring explanatory mechanisms. *German J. Hum. Resour. Manag.* **34**(1), 69–95 (2019)
- Delina, G.: A study on the interrelationships between employee engagement, employee engagement initiatives and job satisfaction. *Int. J. Bus. Excell.* **20**(2), 242–268 (2020)
- Teo, S.T., Bentley, T., Nguyen, D.: Psychosocial work environment, work engagement, and employee commitment: a moderated, mediation model. *Int. J. Hospit. Manag.* **88**, 102415 (2020)
- Boyd, N.M., Nowell, B.: Sense of community, sense of community responsibility, organizational commitment and identification, and public service motivation: a simultaneous test of affective states on employee well-being and engagement in a public service work context. *Public Manag. Rev.* **22**(7), 1024–1050 (2020)
- Guo, J., Qiu, Y., Gan, Y.: Workplace incivility and work engagement: the chain mediating effects of perceived insider status, affective organizational commitment and organizational identification. *Curr. Psychol.* 1–12 (2020)
- Gupta, V., Singh, S., Bhattacharya, A.: The relationships between leadership, work engagement and employee innovative performance: empirical evidence from the Indian R&D context. *Int. J. Innov. Manag.* **21**(07), 1750055 (2017)
- Hauff, S., Richter, N.F., Tressin, T.: Situational job characteristics and job satisfaction: The moderating role of national culture. *Int. Bus. Rev.* **24**(4), 710–723 (2015)
- Österberg, J., Rydstedt, L.W., Kleiven, J., Brandebo, M.F.: The path to job satisfaction. applying the theory of purposeful behavior to military conditions. *J. Def. Resour. Manag.* **8**(1) (2017)
- Choudhary, D.S.: Job enrichment: a tool for employee motivation. *Int. J. Appl. Res.* **2**(5), 1020–1024 (2016)
- Yuen, K.F., Loh, H.S., Zhou, Q., Wong, Y.D.: Determinants of job satisfaction and performance of seafarers. *Transp. Res. Part A Policy Pract.* **110**, 1–12 (2018)
- Is'haq Ibrahim, K.A.: The Impact of challenging work on employee's retention in the manufacturing industry in Klang Valley. *Int. J. Psychol. Cogn. Sci.* **5**(1), 1–8 (2019)
- Pandey, P., Singh, S., Pathak, P.: Achieving retention through human resource information system: developing a framework. In: 2016 3rd International Conference on Recent Advances in Information Technology (RAIT), pp. 700–704. IEEE (2016)
- Tziner, A., Ben-David, A., Oren, L., Sharoni, G.: Attachment to work, job satisfaction and work centrality. *Leadersh. Organ. Dev. J.* **35**, 555–565 (2014). <https://doi.org/10.1108/LODJ-08-2012-0102>
- Abdul, M., et al.: The nexus between job satisfactions and human resource management (HRM) practices: a perceptual analysis of commercial banks in Bangladesh. *Int. J. Econ. Manag.* **12**(S2) (2018)
- Bacea, A., Bordean, O.N.: Employee job satisfaction and retention factors in outsourcing companies. *Manag. Challenges Contemp. Soc. Proc.* **9**(2), 97–101 (2016)
- Huey Yüing, L., Zaman Bin Ahmad, K.: The moderating effects of organizational culture on the relationships between leadership behaviour and organizational commitment and between organizational commitment and job satisfaction and performance. *Leadersh. Organ. Dev. J.* **30**(1), 53–86 (2009)
- Krejcie, R.V., Morgan, D.W.: Determining sample size for research activities. *Educ. Psychol. Measur.* **30**, 607–610 (1970)
- Creswell, J.W.: Mapping the field of mixed methods research. *J. Mixed Methods Res.* **3**(2), 95–108 (2009)
- Hair, J.F., Ringle, C.M., Sarstedt, M.: Partial least squares structural equation modeling: rigorous applications, better results and higher acceptance. *Long Range Plan.* **46**(1–2), 1–12 (2013)
- Garson, G.D.: *Structural Equation Modeling*. Statistical Associates Publishing, Asheboro (2012)
- Hair, J.F., Anderson, R.E., Babin, B.J., Black, W.C.: *Multivariate Data Analysis: A Global Perspective*, vol. 7. Pearson, Upper Saddle River (2010)
- Huck, S.W.: *Reading Statistics and Research*, 6th edn. Pearson, Boston (2012)

- Ahsan, N., Fie, D.Y.G., Foong, Y.P., Alam, S.S.: Relationship between retention factors and affective organisational commitment among knowledge workers in Malaysia. *J. Bus. Econ. Manag.* **14**(5), 903–922 (2013)
- Shonubi, O.A., Abdullah, N., Hashim, R., Hamid, N.B.: Appreciation: an empirical review on the colossal impact on telecom industry employee retention in Malaysia. *PEOPLE: Int. J. Soc. Sci.* **3**(1) (2017)
- Mustapha, N., Zakaria, Z.C.: Measuring job satisfaction from the perspective of interpersonal relationship and faculty workload among academic staff at public universities in Kelantan, Malaysia (2013)
- Ahmad, W.I.W., Abdurahman, S.M.: Job satisfaction among academic staff of Universiti Utara Malaysia: a work environment perspective. *Medit. J. Soc. Sci.* **6**(3 S2), 251 (2015)
- Fauzi, N.F.B., Ahmad, F., Gelaidan, H.M.: The employee retention status in paddy and rice industry in Malaysia. *Middle-East J. Sci. Res.* **18**(5), 642–650 (2013)
- Abdul, M., Ismail, H., Jaafar, N.I.H.: Job satisfaction among executives: case of Japanese electrical and electronic manufacturing companies. *Malaysia J. Glob. Bus. Manag.* **6**(2), 1 (2010)
- Choi, S.L., Goh, C.F., Adam, M.B.H., Tan, O.K.: Transformational leadership, empowerment, and job satisfaction: the mediating role of employee empowerment. *Hum. Resour. Health* **14**(1), 73 (2016)
- Sabbagha, M. F.: A model of employee motivation and job satisfaction for staff retention practices within a south african foreign exchange banking organisation (Doctorate desecration). University of South Africa (2016)
- Njoroge, S. W.: A Survey of factors that influence employee retention in manufacturing firms in Nairobi (Doctoral dissertation, University of Nairobi) (2007)
- Schaufeli, W.B., Salanova, M., González-Romá, V., Bakker, A.B.: The measurement of engagement and burnout: a two sample confirmatory factor analytic approach. *J. Happiness Stud.* **3**(1), 71–92 (2002)
- McKay, P.F., Avery, D.R., Tonidandel, S., Morris, M.A., Hernandez, M., Hebl, M.R.: Racial differences in employee retention: Are diversity climate perceptions the key? *Pers. Psychol.* **60**(1), 35–62 (2007)
- Hu, L.T., Bentler, P.M.: Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives. *Struct. Equ. Model. Multi. J.* **6**(1), 1–55 (1999)
- Yip, P.S., Zhang, H., Lam, T.H., Lam, K.F., Lee, A.M., Chan, J., Fan, S.: Sex knowledge, attitudes, and high-risk sexual behaviors among unmarried youth in Hong Kong. *BMC Public Health* **13**(1), 1–10 (2013)



# Corporate-Community Engagement—The Case Study of Malaysian Palm Oil Companies in Indonesia



Mohd Rafi Yaacob, Siti Amaliya Mohd Radyi, Azwan Abdullah, Juliansyah Noor, Ahmad Firdause Fadzil, and Faizu Hassan

**Abstract** Corporate-community engagement is one of the integral components of Corporate Social Responsibility (CSR), this is especially challenging in international business endeavour where a company is considered a foreign entity and any negative encounter against a local community would easily backfire its existence as well as portrays negative image of its home country. By and large, any business' CSR initiatives in whatever forms and shapes would positively contribute to the triple-bottom-line of business, namely profit, people and planet. Apart from looking after its employees, engaging local community is inevitably included under the people bottom line. Malaysian Palm Oil Companies over the last three decades have expanded their activities in Indonesia to gain competitive edges by tapping attractive land's price and relatively cheaper labour resources. Notwithstanding of socio-economic contribution of Malaysian Palm Oil Companies in their host country through job opportunities, improvement in infrastructure as well as economic gains by Indonesian government through tax payment, not much has been studied about their benefits to local communities who live within the vicinity of the palm oil plantations. Against this academic lacuna, this study aims to investigate level of engagement of Malaysian Palm Oil Companies in Indonesia with local communities by using six companies as the case study. Utilising on qualitative method where interviews were conducted with the community leaders and palm oil companies' management in various provinces in Sumatra and Kalimantan. The results of the study found that majority of those companies hardly engage with their local communities. These findings are instructive where Malaysia Palm Oil Company needs to proactively embrace and engage community engagement through a deeper, meaningful and continuous collaboration

---

M. R. Yaacob (✉) · S. A. M. Radyi · A. Abdullah  
Universiti Malaysia Kelantan, Kota Bharu, Malaysia  
e-mail: [rafi@umk.edu.my](mailto:rafi@umk.edu.my)

J. Noor  
STIE, La Tansa Mashiro, Rangkasbitung, Indonesia

A. F. Fadzil  
Universiti Sultan Zainal Abidin, Kuala Terengganu, Malaysia

F. Hassan  
Malaysian Space Agency, Kuala Lumpur, Malaysia

the local communities in order to gain minds and hearts of their existence which in turns can contribute to the sustainability of their companies and also the palm oil industry.

**Keywords** Corporate-community engagement · Sustainability · Malaysian Palm Oil Companies

## 1 Background of the Study

Since the introduction and scientifically propagation of oil palm plantations in the South East Asia in the late nineteenth century by Western colonials, palm oil production has increased exponentially and has been consistently outperformed all other edible oils. It has a huge range of uses in foods—particularly biscuits, margarine, frying oil, sauces, ice cream, mayonnaise, chips and chocolate. It is also used in other derivative products—including soaps, shampoo, cosmetics, paints, detergents, and grease in the metal and leather industries. Although Indonesia has overtaken Malaysia in terms land acreage of oil palm plantation and volume of production of crude oil palm, Malaysia palm oil industry (MPOI) has competitive advantages in terms of high crude oil productivity per hectare as well as development in palm oil industry due to the continuous R&D in both upstream and downstream sectors of the industry.

In general, the MPOI has undergone four developmental phases: first, during the colonial time when the crop was first introduced in the country, second, from the early independent in 1957 to the 1980s where oil palm plantation expanded leaps and bound in Peninsular Malaysia due to government scheme—FELDA. Third, in the 1990s where the expansion of large scale of oil palm plantations especially in Sabah and Sarawak by private sectors. Fourth phase, in the end of the 1990s and the early 2000s MPOI extended its upstream operations off-shore, particularly to Indonesia. The international expansion of the industry has been largely justified. In Indonesia, there is adequate supply of workers and availability of lands for plantation development and cost of production relatively lower than in Malaysia. But nevertheless, expanding overseas, has its own downside. Apart from complying with the nitty-gritty of the host country's laws and regulations, winning the minds and hearts of relevant stakeholders is also crucial to ensure its presence is positively welcomed and meaningfully felt.

Unlike in the past where the bottom line of business was always and solely about financial profit, nowadays it has expended to the welfare of staff and well-being of the local communities as well as looking after the natural environment through environmental conservation and preservation. In short, any businesses' sustainability relies on those 'triple bottom line'. While, financial profit is always on the top priority, no business will ignore it and would level its best to maintain its survival. Environmental and social issues are yet to be fully embraced by businesses especially when pressure exerted by stakeholders are not strong enough for them to do so. As far as literature is concerned, this also rings true for players in the palm oil industry. As

for MPOI, its existence in its neighbouring country, Indonesia represents the image of its own country Malaysia. Unlike, operating in the home country, any negative impacts associated with Malaysian Palm Oil Companies (MPOC) will have negative consequences to them as far-reaching impacts to Malaysia. Realising this, MPOC could not help but to comply with the laws and regulations of its host country. But complying with the laws and regulations is considered the least MPOC can do. It should go beyond compliance by doing something beyond its responsibility.

In this case proactively, continuously and meaningfully engages with local communities where their plantations are established is essential to say the least. In the era of IR4.0 where news spread 'like wildfire' where in just a click of a mouse, any good or bad deeds will be locally and internationally exposed. It has a far-reaching consequence to the MPOI and Malaysia's image. Indeed, the existence of MPOI in Indonesia is a litmus test of its international expansion, by being at a forefront and a champion in corporate engagement with local communities in the said industry ensure positive and favourable international reputation and in turns create competitive edge and sustainability.

Notwithstanding of socio-economic contribution of Malaysian Palm Oil Companies in their host country through job opportunities, improvement in infrastructure as well as economic gains by Indonesian government through tax payment, not much has been studied about their benefits to local communities who live within the vicinity of the palm oil plantations. Against this academic lacuna, this study aims to investigate level of engagement of Malaysian Palm Oil Companies in Indonesia with local communities.

## 2 Issues Related with Palm Oil Industry

Many scholars and activists have widely expressed their concerns and dissatisfaction pertaining to the expansion of palm oil industry in the Southeast Asia, amongst others its association with deforestation of tropical rainforests, forest fire and haze, erosion and sedimentation, local climate change and also the extinction of many species of flora and fauna (Gunarso et al. 2013; UNEP 2007; World Bank Group 2011; Zahari et al. 2005). Consequently, affecting the quality of life of the communities who live in and surrounding the plantations and conflicts occur when local communities react against the players of the industry. While it cannot be denied that palm oil industry expansion has brought many positive impacts to the local economy, but inequitable of benefits between the organization and local communities is usually observed and adverse impacts to the indigenous people have been highlighted by many researchers, academicians and non-governmental organisations (Yaacob and Wong 2007, WBG 2011).

But nevertheless, this industry up until today is the most important industry for Malaysia, Indonesia and other countries in South East Asia and Africa since it has been the main contributor for the countries' economy. Unsurprisingly, oil palm is called as the 'golden crop'. Hence, to increase and justify the national economy through this industry, palm oil companies should ensure that their business activities sustain over the time in the global market. Yet, sustainability cannot be achieved without a good community engagement. It goes without saying that more and more of the palm oil companies, especially the big ones now are taking into consideration of CSR activities to show they are socially responsible. Amongst others they engaged in various forms of donations, philanthropic activities including offering scholarship and organising events with communities. However, these programmes have no or little everlasting impacts to communities they engaged with because these activities are piecemeal in nature and ad hoc in their practices. Communities are treated as outsiders and passive receivers rather than strategic partners and collaborators. In short, community is still perceived as an externality and it is not included in the company's account, rendering it unrelated when making strategic decision and action.

As far as literature in corporate social responsibility and corporate engagement are concerned, palm oil companies are expected to expand their social responsibility horizon, to do more to empower, address and resolve social, environmental and economic issues such as poverty, climate change and to name but a few. In so doing community engagement which is part of the CSR has to be inclusive, to become one of the strategic initiatives and important agendas, need to strategize and discuss together with business related issues which contribute directly and positively to its financial coffer. Sadly speaking, now CSR has failed to be seen by businesses that it has a long-term benefit. It is considered as a mere publicity program which is exercised rather than gaining positive lights and attention from the stakeholders. In reality, CSR includes deep and meaningful community engagement that acts as a double-edged sword, not only it gives perpetual benefits to society involved but it also helps companies to achieve good reputation which in turns attract quality workers from communities, reduce negative publicity and create loyalty amongst consumers. From this point of view, CSR itself is as a valuable mechanism and platform for companies including MPOC to gain profit through the stakeholder interests.

Stakeholder's interest is very important for MPOC and it requires the players to deeply and meaningfully engage with local communities (Yaacob and Wong 2007). As previously mentioned, stakeholder's engagement is one of the integral components of CSR. This serves as a platform for communication between the companies and the stakeholders that involved directly or indirectly with the company's business activities and also as viable means for their business sustainability. Words of mouths from local communities will spread far and wide in the era of IR4.0 where social media plays crucial roles. In the era where all information can be assessed on the webs, positive images of MPOC add as an advantage.

While proactive community engagement is strongly laudable and welcome, first ones must understand and fully grasp the very concept of it. Community engagement is part of a wider company's stakeholder engagement (SE). It lays the very concept and practice of commitment to ensure a company behaves ethically. Simply put, any corporation may be deemed as responsible by a society when it acts beyond the limits of the law and regulations. As quoted by Davis (1973), a corporation is not being socially responsible if it merely complies with the minimum requirements of the law, social responsibility begins where the law ends. The management of a corporation should attempt to go to the horizon of its social responsibility, maximising the positive impacts and minimising the negative impacts of its routine business activities on society. At the end of the day, it has nothing to lose but some things to gain.

SE, logically has a function to increase positive impacts and at the same time reduce negative effects of MPOC because it acts as a catalyst to reduce social gap between the newcomers in the host country and the communities. They dealt with not only through the provision of employment opportunities, but also with coaching and mentoring program that is offered by the companies to the local communities they live and deal with. SE propagates engagement with a community through a two-way communication and continuous dialogue with their stakeholders, including local community. This augurs well with the SE which can be defined as a process that an organisation involves and engages with a stakeholder in a positive manner in the organized activities including a process of developing, establishing, and maintaining stakeholder relation that also can be included in stakeholder's identification, communication, dialogue, consultation and partnership (Greenwood 2007; O'Riordan 2011). This context of engagement is as a mechanism for consent, control, co-operation, accountability, it is as a form of employee involvement, as a method to gain trust or as a substitute for true trust, as a discourse to enhance fairness, and also as a mechanism of corporate governance (Greenwood 2007).

In the study on companies' exploration by Eerola (2013), she said that because SE is one of the CSR components at the beginning of the exploration, companies should communicate and inform the local community about the business activities so that it can help companies to establish a good relationship with the community. But it is not only about a good relationship. It is also about a good long-term relationship where business is accepted by the community since the company undergo their business for a long-term basis so this is justifiable.

Eerola's evaluation (2013) also can be a proper and viable mechanism for business to gain support from local community that an organization is engaged with. In the case of MPOC, SE guides and provides opportunities for MPOC to engage with local communities in Indonesia in its efforts to gain a win-win situation where well-being of a community is looked after and at the same time MPOC move towards sustainability. This engagement also offers the company an opportunity to seek, to listen to and to address concerns raised by the community regarding plantation activities and to meet their expectations. Both the company and community would equally benefit if such engagement is properly implemented in an effective manner.

### 3 Data Collection

The researchers deliberately applied qualitative approach method because it allowed in-depth and detailed information than the quantitative method. Hence it provided a better way of collecting data in natural setting which is viewed as natural rather than artificial. In this study, the researchers adopted case study approach. According to Carson et al. (2001) and Yin (2014) in social science study, a case study is the best method to be applied to answer the question and issues or problems which are relatively complex and little is known. Albeit it is time consuming and costly, the researchers found that case study was the most appropriate research strategy for this study since it offered a holistic view of the subject matter under the study.

While, face to face interview is usually the most expensive survey method since an interviewer needed to spend a large amount of time and costly because they needed to pay for travelling to and from interviews (Gray 2013). In this research, most of the data collection costs involved air travelling, accommodation and local logistics from airports to oil palm plantations, companies' office and place of settlements of local communities. Fortunately, in this study, travelling for data collection was possible because parts of the costs were covered by the allocation of the research grant provided by the Ministry of Higher Education of Malaysia. In order to minimise the cost incurred, the researchers scheduled the interviews accordingly and bought cheap return tickets from no-frill regional and local airlines in advance and as for the accommodations and logistics a few MPOC generously provided accommodation and ferried the researchers from airports to their oil palm plantations and vice-versa at no cost.

Altogether five MPOC, all Government Link Companies (GLCs) which operated in two provinces in Sumatra and one province in Western Kalimantan voluntarily agreed to participate. The researchers collected data through 30 in-depth interviews with staff at managerial level of MPOC, head villages and representatives of selected communities and a government officer through face-to-face meeting. Three major themes of community engagement involved were: i) Capacity Building, ii) Building Relationship and iii) Social Economic Development. In each and every interview, a permission was asked to audio-record the conversation. A semi-structured interview questions were used to facilitate the interviews. It was also helpful to ensure consistency and smooth flow of the questions. Prior to the interviews, the researchers prepared the interview protocol to ensure efficiency, consistency and validity of the interview's process. The interviews were conducted in the four visits, January 2016, March 2016, December 2016 and March 2017. The informants for this study came from multiple demographic backgrounds. The youngest informant was age 28 years old, and the oldest informant was 68 years old. Majority of them have between 20 to 40 years of experience in dealing with palm oil plantation. As far as education level was concerned, the informants' education level varies, but most of them had completed schooling at the secondary level. Data were transcribed shortly after the interviews and were analysed using ATLAS.ti software according to research themes and subthemes which were identified through extensive literature review.

## 4 Findings

This section deliberates CCE involved between MPOC and local communities. The researchers examined each of the company's engagement with its local communities based on the code and subcodes appearing in the analysis. Overall, there were two groups of companies in relation of CCE of MPOC. They were classified based on the similarity of their engagement with the community. Group A which consists of company B, D and E is known as the positive group engagement. In terms of capacity building, Company B and E show a low CSR awareness, but moderate for Company D. However, none of the companies was involved in any sort of training and education with local communities. When it came to building relationship, even though all companies did not appoint anyone as a personal contact, effective two-way communication and cultivating relationship were identified and observed with the local communities. As far as a socio-economic development with the local communities was concerned, only Company D engaged in collaboration or partnership. But the project failed due to lack of monitoring and regulating by the said company. All local communities in Group A were satisfied with the employment opportunities provided by all companies.

On the other hand, Group B, in which consists of Company A and C were categorised as the negative group. From the information gathered from the interviews, it seems there was a lack capacity building of this group. The result also shows neither local communities aware of the concept of CSR now nor CSR activities conducted by MPOC. As far as the education outreach was concerned, the researchers found no training and exposure provided to the local communities pertaining to oil palm plantation. Even though the companies were aware of the importance of training and education for local communities who had their own plantations and would rely on them to process their fresh fruit bunches upon harvesting in terms of implementation, it was yet to be implemented. In terms of building relationship, none of these companies appointed someone as a personal contact when dealing with local communities. In addition, the finding showed no effective two-way communications occurred with the communities and the companies also failed to cultivate relationship with local communities. As far as social-economic development was concerned, no collaboration or partnership in any project or activities were engaged with the local communities. When this did not exist, expectedly, no monitoring and regulating involved between both parties. While companies in this category provided job opportunities to the local communities, it was rather small and unequal compared to the outsiders (Table 1).

**Table 1** Corporate-community engagement of the Malaysian Palm Oil Corporation

		Group B		Group A		
Code	Sub-Code	Company A	Company C	Company B	Company D	Company E
Capacity building	CSR awareness	Low	Low	Low	Moderate	Low
	Training and education	x	x	x	x	x
Building relationship	Personal contact	x	x	x	x	x
	2-way comm	x	x	/	/	/
	Cultivating relationship	x	x	/	/	/
Socio-economic development	Collaboration or partnership	x	x	x	/	x
	Monitoring or regulating	x	x	x	x	x
	Employment opportunities	Small	Small	/	/	/

## 5 Discussion and Conclusion

CSR has gained traction over the last two decades as more and more businesses have realised the importance of it. As for stakeholders socially and environmentally responsible business be their paramount concerned (Delannon et al. 2016). With the situation where stakeholders are more educated, companies should be more sensitive towards local communities and be more proactive in CSR approaches, and one of them is through deeper, meaningful and sustainable engagement with local communities to gain favourable images and reputations (Greenwood 2007). Due to their sheer size and visibility, international companies inevitably need to practice more CCE activities than smaller companies. Afterall, as they have the upper hand of better financial support and tend to have a greater impact on society (Haniffa and Cooke 2005; Russo and Tencati 2009). On the other hand, many studies had shown that international companies proactively engaged with local communities were welcome as perceived as part of them and they managed to resume their activities as no conflict against them that could distract their daily operations. On the other hand, failure to gain minds and hearts of the local communities will in turn create conflict and their establishment and presence will be frowned upon and will surely give negative knee-jerk reaction. When locals found that they have no or little opportunities to prosper and develop with the existence of the so-called foreign companies, they will have a mindset that these companies are going to colonise them. Supposedly, companies and local communities' development go hand in hand.



In general, the findings of this study show MPOC was rather reactive in their CCE to say the least. Capacity building was rather weak due to the absence of strong understanding of CSR amongst the management. It comes as no surprise no training and education was engaged with the locals. Although building relationship was observed through effective two-way communication and cultivating relationship was initiated in some MPOC, the absence of personal contact shows companies were not serious enough to build perpetual relationship. In terms of socio-economic development, not all local communities felt they had an advantage of employment opportunities. The clear absence of collaboration or partnership (except for one company) as well as lack of monitoring and regulating to ensure long lasting relationship clearly shows MPOC was rather preoccupied with their daily operations which directly related to their financial bottom line.

The findings of this study are instructive. In order to ensure that company practices CCE, the MPOC should first understand the very concept of CSR. Rather than taking it as in passing, it should be deeply thought in their top management minds and concrete strategies should be charted and implemented to ensure CCE is taken seriously through the involvement of frontline staff (Dobela et al. 2013). CCE should have better understanding of their locals' plights and difficulties as well as the strengths. By having such kind of mental map, appropriate initiatives can be made to ensure community needs and wants can be fulfilled. With better two ways communication and continuous supports that involved in appropriate collaboration in agreeable activities and projects added with monitoring of MPOC to ensure their success, local communities will feel the benefits of MPOC presence. Because the SE concept cover various aspect in society, whereby the community around the plantations shall have the right to enjoy a better life other than wages received each month for fellow communities who worked with MPOC. The intended requirements for local communities are easily recognised such as better accommodation facilities, new technology development into the villages, offer learning and knowledge outreach to educate community and also provide an equal quality of living environment. So that there is no more maxim the richest become richer and the poor will always be poor. Over time, the presence of international companies which in this case is MPOC in the hearts of provinces in Indonesia can address social and environmental issues. This directly and indirectly project positive image and reputation of MPOC in specific and Malaysia in general internationally.


In conclusion, CCE of MPOC in Indonesia was rather reactive. Their presence should make locals felt and have a noticeable effect and influence for the betterment of the said communities. In order to do so, MPOC needs to strategize and their strategies should be inclusive. Developing local communities through meaningful engagement and collaboration is a win-win situation which have a better consequence for MPOC even though their commitments not necessarily translated in monetary terms in a short term. After all, the very essence of business is to serve the community, in this case, local communities in Indonesia.

## References

- Carson, D., Gilmore, A., Perry, C., Gronhaug, K.: *Qualitative Marketing Research* (2001)
- Davis, K.: The case for and against business assumption of social responsibilities. *Acad. Manag. J.* **16**(2), 312–322 (1973)
- Delannon, N., Emmanuel, R., Baba, S.: Corporate community engagement strategies and organizational arrangements: a multiple case study in Canada. *J. Clean. Prod.* **129**, 714–723 (2016)
- Dobela, A.R., Westberg, K., Steel, M., Kris, F.: An Examination of corporate social responsibility implementation & stakeholder engagement: a case study in the Australian mining industry. *Bus. Strateg. Environ.* **23**(3), 145–159 (2013)
- Eerola, T.: A model for stakeholder engagement in mineral exploration in Finland. *Sustainable Development in Minerals Industry (SDIMI)*, Milos, Greece, July, pp. 232–237 (2013)
- Gray, D.E.: *Doing Research in the Real World* (2013)
- Greenwood, M.: Stakeholder engagement: beyond the myth of corporate responsibility. *J. Bus. Ethics* **74**(4), 315–327 (2007)
- Gunarso, P., Hartoyo, M.E., Agus, F., Killeen, T.J.: Oil Palm and Land Use Change in Indonesia, Malaysia and Papua New Guinea. Report From the Technical Panels of the 2nd Greenhouse Gas, Working Group of Roundtable on Sustainable Palm Oil (RSPO) (2013)
- Haniffa, R.M., Cooke, T.E.: The impact of culture and governance on corporate social reporting. *J. Account. Public Policy* **24**(5), 391–430 (2005)
- O’Riordan, L.: Perspective on Corporate Social Responsibility: Corporate Approaches to Stakeholder Engagement in the Pharmaceutical Industry in the UK and Germany (2011)
- Richardson, C.L.: Deforestation due to Palm Oil Plantations in Indonesia: Towards Sustainable Production of Palm Oil. Research Report of the Palm Oil Action Group (2010)
- Russo, A., Tencati, A.: Formal vs. informal CSR strategies: evidence from Italian micro, small, medium-sized, and large firms. *J. Bus. Ethics* **85**(SUPPL. 2), 339–353 (2009)
- UNEP: United Nations Environment Programme (2007)
- WBG: The World Bank Group Framework and IFC Strategy for Engagement in the Palm Oil Sector (2011)
- World Bank Group: The World Bank Group Framework and IFC Strategy for Engagement in the Palm Oil Sector (2011)
- Yaacob, M.R., Wong, L.: Stakeholders activism: indigenous peoples of Sarawak resistance against the State Government and Corporations. *Soc. Responsib. J.* **3**(2), 39–51 (2007)
- Yin, R.K.: *Case Study Research Design and Method*, 5th edn. Sage, Thousand Oaks (2014)
- Zahari, Z., McCarthy, J., Barlow, C.: Environmental issues in an age of regional autonomy: the case of pollution in the plantation sector of North Sumatra. *Oil Palm Ind. Econ. J.* **5**(2), 23–36 (2005)

# Does Environmental, Social, and Governance (ESG) Disclosure Add Firm Value? Evidence from Sharia-Compliant Banks in Jordan



Ammar Daher Bashatweh , Thaer Ahmad Abutaber, Mohammed Jamal AlZu'bi, Laith Faris Abu KHader, Saad Ahmed Al-Jaghibir, and Islam Jamal AlZoubi

**Abstract** This study aims to determine to investigate the relationship between ESG disclosure and bank value measures in Islamic banks listed on ASE in the period 2013 to 2019. The independent variable is Environmental, Social, and Governance Disclosure (ESGD) and the dependent variables are the banks' value measures (ROA, ROI, EPS, M/B). This study using two control variables as leverage and board size. The findings deduced the empirical results that there is a significant impact of ESGD on Firms Value, and the disclosure of governance in Islamic banks is better.

**Keywords** ESG disclosure · Firm value · Islamic banks · Sharia-compliant banks · Environmental · Social · Governance · ROI · ROA · EPS · M/B ratio

## 1 Introduction

Jordan's economy is dependent on a variety of key sectors, including the financial sector (Banking, Insurance, Diversified Financial Services, Real Estate), industry

---

A. D. Bashatweh (✉)

Faculty of Business and Finance, Accounting Department, The World Islamic Science and Education University, Amman, Jordan

T. A. Abutaber

School of Business, Jadara University, Irbid, Jordan

e-mail: [thaer@jadara.edu.jo](mailto:thaer@jadara.edu.jo)

M. J. AlZu'bi

Faculty of Business, Accounting Department, Al-Balqa Applied University, Salt, Jordan

L. F. A. KHader

Arab International Bureau for Auditing, Amman, Jordan

S. A. Al-Jaghibir

Islamic International Arab Bank, Amman, Jordan

I. J. AlZoubi

Department of Islamic Economics & Banking, Al-Yarmouk University, Irbid, Jordan

sector (Pharmaceutical and Medical Industries, Chemical Industries, Food and Beverages, Tobacco and Cigarettes, Mining and Extraction Industries, Engineering and Construction, Electrical Industries, Textiles, Leathers and Clothing's) and services sectors (Commercial Services, Utilities and Energy, Media, Technology and Communication, Transportation, Hotels and Tourism, Educational Services, Health Care Services).

The voluntary disclosure enables to cherry-pick information positive and avoid negatively related to ESG information, it uses positive information to creating value, and negative information to avoid negative developments. So If investors are to inspire and press businesses into focusing on long-term returns, they must use ESG information as part of their investing strategy (Sakuma-Keck and Hensmans 2013). Non-financial data, such as Sustainability reports, corporate social responsibility (CSR), and environmental, social, and governance (ESG) data, have become increasingly available and have attracted investors' attention (Bax et al. 2021). Everyone's attention was on environmental, social, and governance (ESG) in the age of achievement of strategic growth and sustainable development. On the one hand, business sustainability is one of the primary areas of research topics. In the past few years, there has been an increasing focus on sustainable financing for banks, the financial markets, and public agencies. Environmental, social, and governance (ESG) activities are being included in the business models from this perspective. Stakeholders including shareholders, investors, governments, and regulatory authorities have demonstrated rapidly increasing ESG interests. (Murè et al. 2021; Ruan and Liu 2021; Alareeni 2018).

How does ESG affect the firm's value? The origins of such a relationship might come from two various directions. A first correlation might be shown between ESG and future cash flows of businesses. ESG performance might predict financial success and company value, for example, if customers prefer to acquire items from socially or environmentally responsible enterprises. ESG is used in investment choices by many of the major institutional investors, mentioning that ESG could predict financial performance and companies value. The second correlation, ESG issues will be included in investment analysis and decision-making processes if many of the major institutional investors are really adopting ESG in their investment decisions (Gillan et al. 2010).

The main aim of this study is to investigate the relationship between ESG disclosure and banks value measures in Islamic banks listed on ASE. According to the

**Table 1** Presents information related to the sector (ASE 2020)

Trading information	2019	2018	2017	2016
Financial sector				
Value traded (JD)	1,039,445,248	1,113,491,923	1,891,480,677	1,202,107,859
No. of shares traded	798,046,895	755,368,686	1,040,827,022	1,077,313,987
No. of subscribed shares	4,278,979,948	4,326,947,674	4,293,687,620	4,271,135,102
Market capitalization (JD)	9,252,731,752	10,622,439,660	10,857,070,843	11,065,061,330

Jordanian Association of Banks report entitled “The Most Prominent Banking Development”, performance measures for banks have dropped, and our study suggests that ESG disclosure has influenced Islamic banks’ value throughout the period 2013–2019.

This article is structured as follows: The second section of the report reviews relevant literature. The methods and measurements of the variables are presented in Sect. 3. After the data analysis and results, the study comes to a close in Sect. 5.

## 2 Literature Review

### 2.1 ESG Disclosure

ESG’s efficacy is better understood within the institutional framework of economic governance when it is seen in the context of institutional theory it is assumed under this theory that the conduct of business organizations is impacted by social structures (Baldini et al. 2018).

**Elements of ESG:** (Henisz et al. 2019).

1. Environmental standard, comprises the energy input and trash that firm disposes of, its resources, and, as a result, its effects on living creatures. (E) includes emissions of carbon and climate change, The energy and resources of every firm are used; every company is environmentally influenced and affected.
2. Social standard, handles business relationships and reputation for individuals and institutions in the communities you conduct business. social standard covers employment relations, diversity, and inclusion Within a wider and more varied society.
3. Governance is a company’s internal system of policies, controls, and activities that manage itself, take effective choices, respect legal requirements and satisfy the demands of external stakeholders.

A value-enhancing theory approach suggests that ESG Disclosure may have a beneficial impact on organizations’ performance, improving both their competitive advantages and shareholder value. Engagement in ESG Disclosure appeared to improve inter-organizational efficiency and improve a firm’s reputation in the capital market (Albitar et al. 2020).

Society’s approval of a corporation is emphasized under the legitimacy theory. Societal expectations must be met for a company to succeed, according to the legitimacy theory. Stakeholder expectations are met when firms provide ESG information and the idea of legitimacy, which emphasizes the significance of reputation and societal approval in the performance of the business, managers are therefore using sustainable initiatives to restore the reputation and societal approval. The institutional theory claims that businesses are affected by institutional and social national

structures, such as the law, with authorities that control the conduct of businesses influencing and altering their strategies and business models. If society believes that a firm is not functioning in an appropriate manner, however, this legitimacy might be at risk (Castillo-Merino et al. 2018).

In Jordan, A high level of regulation and government oversight is inherent to the banking sector; thus, effective governance is a prerequisite to long-term viability. When it comes to reporting mechanisms, budgeting, accountability, and commitment, proper corporate governance provides a solid foundation. Supervisory roles would have a clear scope, monitoring and evaluation would be clear to all stakeholders, and decision-making would be more efficient and easier to follow. For many years, banks in Jordan have been praised for their services to the community. As a result of this practice, which is based mostly on the discretion of bank management, human rights organizations that approach banks every year for financial help have grown to anticipate it. A total of 35,691,279 JD was donated or sponsored to Jordanian charities in 2012, 2011 and 2010, representing 3.48% of the banks' three-year post-tax profit of 1,026,319,000 JD. The banking industry has a reputation for being less polluting than other industrial sectors. When it comes to the environmental impact that a bank has, by adopting an environmental strategy and applying for environmental certification, such as ISO 14001, banks may limit their negative environmental effect in a methodical manner. Additionally, they can minimize their costs by maximizing the efficiency of their resources. They can also cut costs by utilizing resources more efficiently and incorporating their policy into day-to-day activities and individual practices (Association of banks in Jordan 2013).

There have been several studies that have examined the impact of ESGD on business performance, but the results have been mixed. Several investigations, including (Qiu et al. 2016), found no relationship between environmental disclosures and profitability. ESG Disclosure and company performance were positively correlated in the study (Albitar et al. 2020), which also indicated that ESG Disclosure might lead to increased firm value. ESG Disclosure information is positively associated with business efficiency, according to a study by Xie et al. (2017). The majority of ESG Disclosure activities have a non-negative connection with Financial Performance. Finally, Alareeni and Hamdan (2020) shows the higher level of ESG disclosure the higher ROA and ROE.

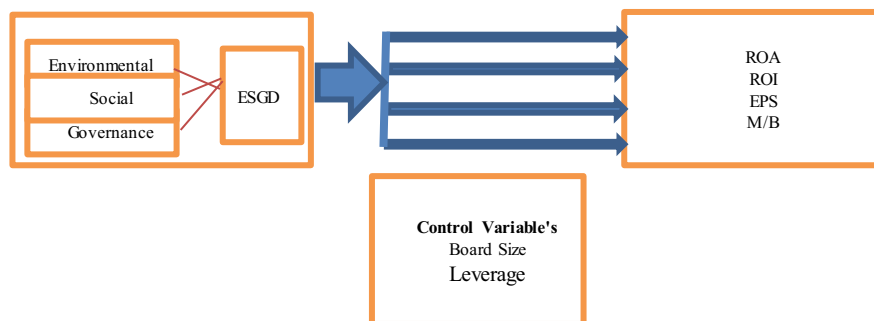
The article links the ideas of institutional, value-enhancing, and legitimacy theories to obtain the likely knowledge of the connection ESG Disclosure—firms value. This article shows that firms with ESG Disclosure may obtain a reputation and higher firm value. Thus, the hypothesis to test is:

**HO: There is statistically significant impact at sig  $\alpha \leq 0.05$  for Environmental, Social, and Governance (ESG) Disclosure on Islamic Banks Value.**

### 3 Methodology

Based on secondary quantitative data, the paper's design was selected to be quantitative in nature.

#### 3.1 Conceptual Framework



#### 3.2 Hypotheses of the Study

HO1: There is statistically significant impact at sig  $\alpha \leq 0.05$  for Environmental, Social, and Governance (ESG) Disclosure on ROA.

HO2: There is statistically significant impact at sig  $\alpha \leq 0.05$  for Environmental, Social, and Governance (ESG) Disclosure on EPS.

HO3: There is statistically significant impact at sig  $\alpha \leq 0.05$  for Environmental, Social, and Governance (ESG) Disclosure on ROI.

HO4: There is statistically significant impact at sig  $\alpha \leq 0.05$  for Environmental, Social, and Governance (ESG) Disclosure on M/B.

#### 3.3 Sample, Data Collection, Regression Model, and Variables Measurement

In this study, two Islamic banks listed on ASE were examined from 2013 to 2019. A variety of sources are used to obtain data: Annual reports, CSR reports, and sustainability reports of 2013 to 2019, which are available and gathered from banks websites. In this investigation, the following models were tested:

Model 1:  $ROA_{i,t} = \alpha_0 + \beta_1 ESGD_{i,t} + \beta_2 \ln \text{Board size}_{i,t} + \beta_3 \text{Lev}_{i,t} + E_{i,t}$

Model 2:  $EPS_{i,t} = \alpha_0 + \beta_1 ESGD_{i,t} + \beta_2 \ln \text{Board size}_{i,t} + \beta_3 \text{Lev}_{i,t} + E_{i,t}$

Model 3:  $ROI_{i,t} = \alpha_0 + \beta_1 ESGD_{i,t} + \beta_2 \ln \text{Board size}_{i,t} + \beta_3 \text{Lev}_{i,t} + E_{i,t}$

Model 4:  $M/B_{i,t} = \alpha_0 + \beta_1 ESGD_{i,t} + \beta_2 \ln \text{Board size}_{i,t} + \beta_3 \text{Lev}_{i,t} + E_{i,t}$

Where:

ROA: return in assets = Net Income/Total Assets.

EPS: Earning Per Share = Profit (loss) attributable to ordinary shareholders/weighted average number of ordinary shares.

ROI: Return on Investment = Net Income/Total Investments.

M/B: Market to Book value = Market Value/Book Value Per Share.

Board Size = Natural Logarithm of Total Board Size at given year.

Leverage = Total liabilities/Total Assets.

**Banks Value:** Financial indicators that measure the value of banks have been shown through modern studies (Madobi and Umar 2021; Crespi and Migliavacca 2020; Di Tommaso and Thornton 2020; Bashatweh and Ahmed 2021; Al Momani et al. 2020; Bashatweh and AlMomani 2020; AlZou’bi et al. 2020; Castillo-Merino and Rodríguez-Pérez 2021) such as ROA, EPS, ROI, M/B, Board size, Leverage. They were chosen because they reflect banks’ current and future worth, as well as their ability to be relied upon by stakeholders and investors alike. ESGD: Over the period 2013–2019 ESG disclosure score data has been collected using Content analysis was utilized by researchers based on prior studies.

### 3.4 Empirical Results

#### 3.4.1 Descriptive Analysis

Table 1 shows the mean, max, min and std. Dev. For variables in this study.

Table 2 shows, ESGD ranges from a minimum of 0.567 to a maximum of 0.720 and the standard deviations from 0.048. The data show that banks give higher governance disclosures of 98,8% and social 50,2%. In comparison, the least revealed variety is 50% for the environment. This indicates different disclosure policies between banks.

**Table 2** Descriptive analysis

	Board size	Leverage	Social	Environmental	Governance	ESGD	EPS	M_B	ROI	ROA
Mean	2.367	87.696	0.502	0.500	0.988	0.663	0.183	1.050	0.896	0.895
Maximum	2.400	92.215	0.720	0.571	1.000	0.720	0.361	1.375	1.375	1.370
Minimum	1.950	75.530	0.430	0.429	0.833	0.567	0.015	0.650	0.278	0.280
Std. Dev.	0.120	5.157	0.109	0.072	0.044	0.048	0.139	0.251	0.417	0.417



**Table 3** VIF test

VIF	SIZE	Governance	Environmental	Social	Correlation
1.832				1.0000	Social
1.104			1.0000	-0.0916	Environmental
1.134		1.0000	0.2799	0.1646	Governance
1.766	1.0000	0.0628	-0.0690	0.6569	SIZE

Islamic Jordanian banks still need to be increased the level of ESGD. For a firm, value measures the ROA ratio: The maximum score obtained is 1.370%, and the min. the score is 0.280. EPS ratio: The max. score obtained is 0.361% and the min. the score is 0.015%. ROI ratio: The max. score obtained is 1.375% and the min. the score is 0.278%. M/B ratio: The max. score obtained is 1.375% and the min. the score is 0.650%. For control, variables measure the Board Size: The max. value obtained is 2.40, and the min. value is 1.950. Leverage ratio: The max. score obtained is 92.215% and the min. the score is 75.530%.

### 3.4.2 Multicollinearity Test

The matrix of correlations between independent (Environmental, Social, and Governance) and control variable (size) is shown in the Table 3 social and size have a correlation coefficient of 0.6566, which is lower than 0.80, while other independent and control factors have a correlation coefficient of less than 0.80. Thus, the sample is free from the problem of multiple linear correlations.

According to Table 3, VIF values between 1.104 and 1.1832 suggest that the inflation variance factor was all larger than number 1 and less than 10. which confirms the correlation matrix findings,

### 3.4.3 Model Estimation

Panel data it is mixes time series and cross-sectional data by evaluating the outputs of three models (Pooled, Random, and Fixed model). The Hausman was used in this study, The Hausman Test is used to evaluate whether to use FEM or REM. As, REM has a higher consistency than FEM and the following results were obtained (Table 4):

## 4 Hypothesis Testing

For our hypothesis we have utilized regression based analyzes:

The findings for 2 models are shown in Table 5.

**Table 4** Hausman test

Model	Hausman		Appropriate mode
	Ch <sup>2</sup>	Sig	
1 (ROA)	0.091	0.091	Random
2 (EPS)	3.036	0.386	Random
3 (ROI)	6.017	0.117	Random
4 (M/B)	9.762	0.020	Fixed

**Table 5** Regression analysis of model 1 and 2

Variables	Model 1 (ROA)		Model 2 (EPS)	
	Coef.	p-value	Coef	p-value
C	-6.226	0.002	-2.116	0.009
ESG	3.334	0.021	1.152	0.061
Lev	0.078	0.001	0.026	0.006
Board size	-0.851	0.164	-0.336	0.245
Adj R <sup>2</sup>	92.80		83.90	
F	19.264		8.561	
Sig F	0.005		0.026	

Model 1 (ROA) exhibits ESGD results on ROA, suggesting that ESGD had a significant impact on ROA by Islamic banks. Table 5 shows that the Significant model is at the level (0.005) with an F (19.264) value and an adjusted R square of (92.8%). The variance in the ROA can be explained by the variation in the variables in total with all other factors residual constant. As for the regression coefficients, the value of  $\beta$  for the ESGD was 3.334 by a significance of sig = 0.002 this confirms the Positive significance of this aspect. Furthermore, the  $\beta$  value of the Leverage, which was 0.078 showed the significant effect of this aspect where the sig = 0.000, which confirms the significance of this aspect. The  $\beta$  value for the Board size was -0.851, which showed the insignificant impact of this aspect, where the sig = 0.164, which confirms the insignificance of this aspect. So we accept HO1 based on the findings.

**HO1: There is statistically significant impact at sig  $\alpha \leq 0.05$  for Environmental, Social, and Governance (ESG) Disclosure on ROA.**

Model 2 (EPS) exhibits ESGD results on EPS, suggesting that ESGD had a significant impact on EPS by Islamic banks. Table 5 shows that the significant model is at the level (0.026) with an F (8.561) value and an adjusted R square of (83.90%). The variance in the EPS can be explained by the variation in the variables in total with all other factors residual constant. As for the regression coefficients, the value of  $\beta$  for the ESGD was 1.152 by the insignificance of sig = 0.061 this confirms the insignificance of this aspect. Furthermore, the  $\beta$  value of the Leverage which was 0.026 showed the significant effect of this aspect where the sig = 0.006 which confirms the significance of this aspect. The  $\beta$  value for the Board size was -0.336

**Table 6** Regression analysis of model 3 and 4

Variables	Model 3 (ROI)		Model 4 (M/B)	
	Coef.	p-value	Coef	p-value
C	-6.252	0.002	-3.105	0.000
ESG	3.309	0.022	1.495	0.023
Lev	0.078	0.001	0.046	0.000
Board size	-0.830	0.174	-0.377	0.238
Adj R2	92.50		86.10	
F	19		27.998	
Sig F	0.006		0.000	

which showed the insignificant impact of this aspect, where the sig = 0.245, which confirms the insignificance of this aspect. So we accept HO2 based on the findings.

**HO2: There is statistically significant impact at sig  $\alpha \leq 0.05$  for Environmental, Social, and Governance (ESG) Disclosure on EPS.**

The findings for 2 models are shown in Table 6.

Model 3 (ROI) exhibits ESGD results on ROI, suggesting that ESGD had a significant impact on ROI by Islamic banks. Table 6 shows that the Significant model is at the level (0.006) with an F (19.00) value and an adjusted R square of (92.50%). The variance in the ROI can be explained by the variation in the variables in total with all other factors residual constant. As for the regression coefficients, the value of  $\beta$  for the ESGD was 3.309 by a significance of sig = 0.022 this confirms the Positive significance of this aspect. Furthermore, the  $\beta$  value of the Leverage, which was 0.078 showed the significant effect of this aspect where the sig = 0.001, which confirms the significance of this aspect. The  $\beta$  value for the Board size was -0.830, which showed the insignificant impact of this aspect, where the sig = 0.174, which confirms the insignificance of this aspect. So we accept HO3 based on the findings.

**HO3: There is statistically significant impact at sig  $\alpha \leq 0.05$  for Environmental, Social, and Governance (ESG) Disclosure on ROI.**

Model 4 (M/B) exhibits ESGD results on M/B, suggesting that ESGD had a significant impact on M/B by Islamic banks. Table 6 shows that the Significant model is at the level (0.000) with an F (27.998) value and an adjusted R square of (86.10%). The variance in the M/B can be explained by the variation in the variables in total with all other factors residual constant. As for the regression coefficients, the value of  $\beta$  for the ESGD was 1.495 by a significance of sig = 0.023 this confirms the Positive significance of this aspect. Furthermore, the  $\beta$  value of the Leverage, which was 0.046 showed the significant effect of this aspect where the sig = 0.000, which confirms the significance of this aspect. The  $\beta$  value for the Board size was -0.377, which showed the insignificant impact of this aspect, where the sig = 0.238, which confirms the insignificance of this aspect. So we accept HO4 based on the findings.

**HO4: There is statistically significant impact at sig  $\alpha \leq 0.05$  for Environmental, Social, and Governance (ESG) Disclosure on M/B.**

## 5 Conclusion

This study aims to determine to investigate the relationship between ESG disclosure and bank value measures in Islamic banks listed on ASE in the period 2013 to 2019. The independent variable is Environmental, Social, and Governance Disclosure (ESGD) and the dependent variables are the banks' value measures (ROA, ROI, EPS, M/B). This study using two control variables as leverage and board size.

The results of the descriptive study suggest that in Islamic banks ESGD must be higher. In addition, the disclosure of governance in Islamic banks is better.

ESGD was shown to impact banks' value (ROA, EPS, ROI, and M/B). This shows that ESGD enhances the market value of the banks, therefore, increasing their market share and strengthening market competitiveness. This shows that a greater ESGD level plays a significant role in improving the bank's value for stockholders and other stakeholders, and in enabling banks to continuity. Lastly, For the control variables, Board size was found to be insignificant with ROA, ROI, EPS. M/B. For the Leverage, we found that the positively significant with ROA, ROI, EPS. M/B. signaling theory has demonstrated that banks with higher ESGD are more efficient and so attract investment and shareholders, thereby enhancing the bank's value.

There have been several studies that have examined the impact of ESGD on business performance, but the results have been mixed. Several investigations, including (Qiu et al. 2016), found no relationship between environmental disclosures and profitability. ESG Disclosure and company performance were positively correlated in the study (Albitar et al. 2020), which also indicated that ESG Disclosure might lead to increased firm value. ESG Disclosure information is positively associated with business efficiency, according to a study by Xie et al. (2017). The majority of ESG Disclosure activities have a non-negative connection with Financial Performance.

## References

- Al Momani, K.M.D.K., Jamaludin, N., Abdullah, W.Z.W., Nour, A.N.I.: The effects of intellectual capital on firm performance of industrial sector in Jordan. *Humanit. Soc. Sci. Rev.* **8**, 184–192 (2020)
- Alareeni, B.A., Hamdan, A.: ESG impact on performance of US S&P 500-listed firms. *Corp. Gov.* **20**(7), 1409–1428 (2020). <https://doi.org/10.1108/CG-06-2020-0258>
- Albitar, K., Hussainey, K., Kolade, N., Gerged, A.M.: ESG disclosure and firm performance before and after IR: the moderating role of governance mechanisms. *Int. J. Account. Inf. Manag.* (2020)
- AlZou'bi, M.J., KHader, L.F.A., Ahmed, E.Y., Bashatweh, A.D.: The integrative relationship between traditional and modern performance measures: an applied study on commercial banks listed in amman stock exchange. *Acad. Account. Financ. Stud. J.* **25**(4), 1–10 (2021)

- Association of banks in Jordan. Corporate Responsibility Disclosure and Practices in the Banking Sector of Jordan – 2013 (2013). [https://www.abj.org.jo/echobusv3.0/systemassets/cr\\_in\\_the\\_banking\\_sector\\_of\\_jordan\\_by\\_schema.pdf](https://www.abj.org.jo/echobusv3.0/systemassets/cr_in_the_banking_sector_of_jordan_by_schema.pdf)
- Baldini, M., Dal Maso, L., Liberatore, G., Mazzi, F., Terzani, S.: Role of country-and firm-level determinants in environmental, social, and governance disclosure. *J. Bus. Ethics* **150**(1), 79–98 (2018)
- Bashatweh, A.D., Ahmed, E.Y.: The effect of voluntary risk disclosure on assets quality, capital adequacy, and sensitivity to market risk – an empirical study on commercial banks in Jordan. In: Alareeni, B., Hamdan, A., Elgedawy, I. (eds.) *ICBT 2020. LNNS*, vol. 194, pp. 1328–1340. Springer, Cham (2021). [https://doi.org/10.1007/978-3-030-69221-6\\_99](https://doi.org/10.1007/978-3-030-69221-6_99)
- Bashatweh, A.D., AlMomani, S.N.: The effect of accounting disclosure about sustainability reports on the ability of banks to going concern- Case Study of Arab Bank. *Bus. Econ. Res.* **10**(2), 234–249 (2020). <https://doi.org/10.5296/ber.v10i2.17006>
- Bax, K., Sahin, Ö., Czado, C., Paterlini, S.: ESG, Risk, and (tail) dependence (2021). SSRN 3846739
- Castillo-Merino, D., Rodríguez-Pérez, G.: The effects of legal origin and corporate governance on financial firms' sustainability performance. *Sustainability* **13**(15), 8233 (2021)
- Crespi, F., Migliavacca, M.: The determinants of ESG rating in the financial industry: the same old story or a different tale? *Sustainability* **12**(16), 6398 (2020)
- Di Tommaso, C., Thornton, J.: Do ESG scores effect bank risk taking and value? Evidence from European banks. *Corp. Soc. Responsib. Environ. Manag.* **27**(5), 2286–2298 (2020). <https://doi.org/10.1002/csr.1964>
- Gillan, S., Hartzell, J.C., Koch, A., Starks, L.T.: Firms' environmental, social and governance (ESG) choices, performance and managerial motivation. Unpublished Working Paper, p. 10 (2010)
- Henisz, W., Koller, T., Nuttall, R.: Five Ways that ESG Creates Value. McKinsey & Company (2019). <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/five-ways-that-esg-creates-value>
- Madobi, S., Umar, S.: Enterprise risk management practices and banks value: moderating effect of industry competition. *Adv. Account. Manag. Bus. Econ. J.* **1**(1), 37–50 (2021)
- Murè, P., Spallone, M., Mango, F., Marzioni, S., Bittucci, L.: ESG and reputation: the case of sanctioned Italian banks. *Corp. Soc. Responsib. Environ. Manag.* **28**(1), 265–277 (2021)
- Qiu, Y., Shaikat, A., Tharyan, R.: Environmental and social disclosures: link with corporate financial performance. *Br. Account. Rev.* **48**, 102–116 (2016)
- El Khoury, R., Nasrallah, N., Alareeni, B.: ESG and financial performance of banks in the MENAT region: concavity–convexity patterns. *J. Sustain. Finance Invest.* (2021). <https://doi.org/10.1080/20430795.2021.1929807>
- Ruan, L., Liu, H.: Environmental, social, governance activities and firm performance: evidence from China. *Sustainability* **13**(2), 767 (2021)
- Sakuma-Keck, K., Hensmans, M.: A motivation puzzle: can investors change corporate behavior by conforming to ESG pressures? *Institutional Investors' Power to Change Corporate Behavior: International Perspectives (Critical Studies on Corporate Responsibility, Governance and Sustainability*, vol. 5), 367–393. Emerald Group Publishing Limited, Bingley (2013). [https://doi.org/10.1108/S2043-9059\(2013\)0000005023](https://doi.org/10.1108/S2043-9059(2013)0000005023)
- Xie, J., Nozawa, W., Yagi, M., Fujii, H., Managi, S.: Do environmental, social, and governance activities improve corporate financial performance? *Bus. Strateg. Environ.* **28**(2), 286–300 (2019)
- Alareeni, B.: Does corporate governance influence earnings management in listed companies in Bahrain Bourse? *J. Asia Bus. Stud.* **12**(4), 551–570 (2018)

# Dynamics of Living Standards Based on Factors of the Remuneration System



Vasyl Brych , Nadiia Kalinichuk , Nataliya Halysh , Olena Borysiak ,  
Dmytro Shushpanov , and Oleksandr Zagurskyy 

**Abstract** The concepts “standard of living” and “quality of life” play an essential role in society. They are indicators of assessing the socio-economic situation in a country. In the paper the model the dynamics of living standards which makes it possible to substantiate management decisions on the formation of a remuneration system at enterprises, taking into account the financial security of employees is developed. The use of the model showed that the financial indicators of the salary system effectiveness at enterprises do not reflect its adequate impact on the living standard of employees. Namely, the positive tendencies of an increase in average salary and an increase in the salary bill do not fully ensure an increase in the level indicator reflecting the volume of consumption of basic food products. This is due to the fact that the level of the real salary index is insufficient to fully meet the needs of employees.

**Keywords** Modeling the dynamics · Interval model · Living standards · Remuneration system

---

V. Brych (✉) · N. Kalinichuk · N. Halysh  
Department of International Tourism and Hospitality Business, West Ukrainian National University, Ternopil, Ukraine  
e-mail: [v.brych@wunu.edu.ua](mailto:v.brych@wunu.edu.ua)

N. Kalinichuk  
e-mail: [o.kalinichuk@wunu.edu.ua](mailto:o.kalinichuk@wunu.edu.ua)

N. Halysh  
e-mail: [n.halysh@wunu.edu.ua](mailto:n.halysh@wunu.edu.ua)

O. Borysiak  
Department of Marketing, West Ukrainian National University, Ternopil, Ukraine  
e-mail: [o.borysiak@wunu.edu.ua](mailto:o.borysiak@wunu.edu.ua)

D. Shushpanov  
Department of Ecology and Healthcare, West Ukrainian National University, Ternopil, Ukraine  
e-mail: [d.shushpanov@wunu.edu.ua](mailto:d.shushpanov@wunu.edu.ua)

O. Zagurskyy  
Department of Management and Administration, West Ukrainian National University, Ternopil, Ukraine

## 1 Introduction

The main problems in the sphere of wages and their consequences are imperfect legislation, failure to fulfill such functions as motivating and reproducing, decrease in real wages, differentiation of wages by industry and type of economic activity, reduction in the share of wages in the structure of workers' incomes. The existing problems lead to such consequences as a decrease in interest in the quality of work performed, a devaluation of the labour force, a decrease in the qualifications of workers, a decrease in their living standards, an increase in migration, and a low level of consumption.

The system of formation of wages at the enterprise is the interaction of the subsystem of market and non-market regulation. The system of market regulation includes the socio-economic development of the country and its individual industries, the relationship between demand and supply in the labour market. The system of non-market regulation includes precisely state regulation, collective bargaining regulation, and individual determination of wages. The interaction of the two subsystems occurs on the basis of such principles as efficiency, taking into account the needs of the employee and the firm, the formation of wages from two parts of the main and variable, social protection of workers, purchasing power, guarantee and timeliness, fairness. As a result the main task in the sphere of living standards is to study the impact of factors of the remuneration system to the welfare of people.

The factors influencing the remuneration of labour at the enterprise have been determined and systematized and divided into three groups. In particular, state instruments of influence (setting the size of social standards, employment regulation, legislative activity, tax burden on the income of business entities), market factors (the ratio of supply and demand, market conditions, the size of wages formed in the labour market, the interchangeability of labour resources, prices for consumer goods and services, elasticity of demand for labour), intra-firm factors (form of ownership, performance, cost of production, wage formation policy, human factor, market position of the enterprise).

## 2 Literature Review

Among scientists, whose scientific interests are covers wages, should be noted: K. Aldelfer, O. Anisimov, M. Armstrong, D. Goddess, V. Vasilenko, M. Vedernikov, O. Vetluzhska, N. Volhyna, V. Honcharova, O. Grishnova, V. Diesperova, O. Doronin, A. Kalina, A. Klymchuk, A. Kolota, T. Kostyshyn, K. McConnell, P. Matyushko, A. Skull and others. Based on the research of the scientists' interpretations of the concept of need and classification of needs, it is suggested to classify them into: (1) essentials (food, clothing, water, basic necessities); (2) rational (household items, amenities); (3) psychological (communication, safety); (4) spiritual (cultural).

The main indicator of the standard of living of employees is the satisfaction of their needs. The level of development of needs is in direct proportion to the standard of living of the population. Satisfaction of needs is manifested in two expressions: external and internal. It has been established that the needs are individual for each person, but the consumption process can be traced by satisfying rational needs, which ensure the reproduction process and the proper level of consumption. In order to determine the satisfaction of rational needs, consumption rates are established at the legislative level.

The concepts “standard of living” and “quality of life” play an essential role in society. They are indicators of assessing the socio-economic situation in a country. In developed countries, ensuring a decent level and quality of life for the population is the main task of the state. The terms “standard of living” and “quality of life” and their increase are relevant at the moment. The term “standard of living” is considered as the level of material well-being, characterized by the volume of real income per capita and the corresponding volume of consumption (Kremlin 2000; Lapushnyak 2013).

In the modern scientific tradition, the concept “standard of living” of the population, as a rule, has three key aspects as the well-being of the population, accumulation of human capital, and level of human development. It is important to note that the term “quality of life” is interconnected with such concepts as lifestyle and standard of living of the population, which both are similar in origin and content. The way of life reflects the economic activity of people, the norms of behavior, and the practice of their activity in the production and consumption of various necessary goods, material and spiritual ones (Cherenko 2006; Revnitseva 2005). In the conditions of the implementation of sustainable development goals, in Brych et al. (2020a), Halysh et al. (2021), Brych et al. (2021a), Brych et al. (2021b), Standard of Living by Country - World Population Review (2021), Sadova and Semiv (2005) are considered the environmental aspects of the impact on the welfare of the population through the transition to the use of alternative energy sources, environmentally friendly transport, waste recycling, the use of energy efficient technologies.

### **3 Purpose of the Study**

The purpose of the article is to study the dynamics of living standards based on factors of the remuneration system.

### **4 Methodologies**

To study the influence of the main factors of the remuneration system on the standard of living, we use mathematical modeling. To conduct the study, it is necessary



to analyze the factors and indicators that adequately reflect the enterprise remuneration formation system, taking into account the consumer behavior of employees. Based on the analysis of factors and the synthesis of the indicator, it is necessary to construct a model of the dynamics dependence of the lifestyle indicator on indicators of the enterprise remuneration system in order to assess the effectiveness of the remuneration system at the enterprise based on the consumer behavior of employees.

## 5 Findings and Discussion

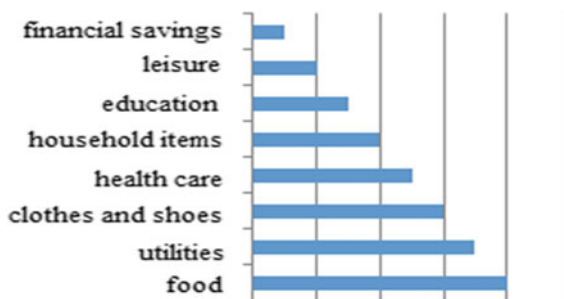
The level and quality of life can be assessed using a system of indicators, which includes integral indicators, differentiation indicators and natural ones. Integral level indicators include: real income per capita; real salary; income from the products sale; income from social payments; interest on deposits of the population (Uzunov 2002).

With the help of these indicators, the income level of the population from various sources is predicted. And also their dynamics and structure are studied. The real income of the population is the realized income or nominal income, adjusted for changes in the prices of goods or tariffs for services. The real incomes of the population differ, excluding services and taking into account services. Real income, excluding services, is a part of GDP used by the population to meet material and cultural needs. Real income including services is a part of GDP used by the population for consumption and accumulation of material goods and services. Real salary is the quantity of goods and services that can be purchased with nominal salary. Real salary depends on nominal salary and prices of goods and services. The percentage change in real salary can be defined as the difference between the percentage change in nominal salary and the percentage change in the price level. It is determined by dividing nominal salary by the consumer price index for goods and services (Dijkstra et al. 2011; Dyvak et al. 2018).

The size of salary, the regularity of its payments, largely determines the standard of living of the population and, especially, its part with low incomes. The needs achievement of the highest level occurs only on condition that the primary needs are satisfied, which are based on material security. Considering this, the level of material remuneration should fully meet the physiological needs; therefore, the factors of the remuneration system should ensure the purchase of food, non-consumer goods and services, as well as the satisfaction of safety needs, i.e. confidence in the future. An important indicator characterizing the standard of living from the side of income is the structure of the population's expenditures. After all, the higher is the share of spending on food products the lower is the human well-being. For many families of Ukraine, it is typical to spend a greater share of income, 90%, on consumer goods, and the expenditures for purchasing food products reached 58.4% (in the region) in 2018, in 2020—52.9. According to international standards, families that spend more than 50% of their income on food are the poor ones.

It can be traced that in the most developed countries the share of spending on food is quite low. In the Netherlands, Denmark, Switzerland and Belgium 20%,

**Fig. 1** The results of expenditure items ranking in the employees' family budget in the dairy industry of Ternopil region *Source* Compiled by the authors on the own research



in Finland, Hong Kong, the USA, the Czech Republic, Australia, Turkey, Great Britain, France—30%, in Korea, Cyprus, Hungary, Macau, Mexico, Croatia—up to 40% (Brych et al. 2019a). It proves the close connection between the economic development of the state and the consumption of the population. In order to clarify the structure of the average monthly expenses of employees in the dairy industry, a survey was conducted in which respondents estimated what share of their incomes they spend on vital needs from their total income. To obtain correct data, we applied the self-ranking method, in which the respondents had to independently determine the expenses from the budget and in what order they differentiate them according to the priority level. So, we can see from Fig. 1, first of all, employees spend their funds on purchasing food, paying for utilities and buying clothes and shoes. But there are not enough funds for receiving educational services and spending leisure time. Considering that most of the expenses are spent on meeting priority needs, the budget structure does not allow or significantly limits the ability of the respondents to save money and make financial savings.

The inadequate level of received payment is also evidenced by the dynamics of food consumption during 2015–2020. Table 1 clearly shows that there is a decrease in consumption of almost all categories of basic food products, except for meat and meat products, vegetables and melons, fruits and berries (consumption of which increased by 8.4; 13.8 and 7.2 kg, that is in 1.2; 1.14 and 1.2 times), etc. However, the actual consumption of these food groups differs from the rational norms developed by the Ministry of Health of Ukraine.

Thus, the rational rate of meat consumption per capita per year is 80 kg, and in 2020 its consumption was at the level of 53 kg; the rate of consumption of milk and dairy products is 380 kg, but in fact it was 198 kg. The consumption of fruits, berries, grapes and nuts is almost half of the norm—only 58 kg.

At the moment, the experience has been accumulated in the development and application of various systems of indicators and a generalized index of the living standard of the population. But the systems of indicators of the level and quality of life and generalizing indices, which are used now, are often imperfect or lose their relevance. The development of the system of indicators of the level and quality of life, as well as a generalizing (integral) indicator of the living standard of the population, is one of the modern humanitarian tasks. Any system of indicators should end

**Table 1** Dynamics of food consumption

The product's name	Rational consumption rate per year (Calculations of the Ministry of Health of Ukraine)	Consumption dynamics for the year						2020 to the consumption rate, %
		2015	2016	2017	2018	2019	2020	
Meat and meat products, kg	80	56	54	51	51	52	53	66,3
Milk and dairy products, kg	380	221	223	210	210	200	198	52,1
Eggs, pcs	290	309	310	280	267	273	275	94,8
Fish and fish products, kg	20	14,6	11,1	8,6	9,6	10,8	11,8	59
Sugar, kg	38	37	36	36	33	30	30	78,9
Oil and other vegetable fats, kg	13	13,3	13,1	12,3	11,7	11,7	11,9	91,5
Potatoes, kg	124	135	141	138	140	143	140	112,9
Vegetables and melons, kg	161	163	163	161	164	160	164	101,9
Fruits, berries, nuts, grapes, kg	90	56	52	51	50	53	58	64,4
Bread and grain products, kg	101	108	109	103	101	101	100	99

Source Compiled by the authors on the own research

with a generalizing indicator that ensures the methodological unity of all particular indicators of the system and an unambiguous assessment of the level and dynamics of the process under study.

To build a model, as an index of the living standard of employees in the industry, we will choose a natural index that reflects the volume of food consumption. To do this, we define it as the average relative volume of consumption:

$$L_i = \frac{1}{K} \sum_{j=1}^K \frac{l_{ij}}{l_{0j}}, i = 1, \dots, N, (1) \quad (1)$$

where  $l_{ij}$  is the annual consumption of the  $j$ -th product in the  $i$ -th period,  $l_{0j}$  is the rational consumption rate of the  $j$ -th product, calculated by the Ministry of Health,  $K$  is the number of products in the consumer basket,  $N$  is the number of studied periods (time series). This approach will provide normalized values for the indicator.

To study the influence of the main factors of the remuneration system on the standard of living, we use mathematical modeling. One of the most effective approaches to modeling the dynamics of economic processes is the set-theoretic approach, in which the models contain parameters and variables presented as sets of guaranteed or admissible values, or as fuzzy sets with known membership functions. The advantage of this approach is that it does not require large data samples (time series) to obtain adequate models and preliminary study of the statistical characteristics of the data, such as the law of data distribution, etc. (Dyvak and Manzhula 2008; Dluhopolskyi et al. 2021).

One of the subclasses of such models is interval models that describe indicators of economic processes by intervals of possible values.

$$[L] = ([L_i^-; L_i^+]), i = 1, \dots, N, \tag{2}$$

where  $L_i^- = L_i - \Delta$ ,  $L_i^+ = L_i + \Delta$ ,  $\Delta$  is a limited error with a known range of possible values.

Interval dynamics models are used, which are described by discrete difference equations in the following form (Krepych et al. 2015; Brych et al. 2020b):

$$L_{n+1} = a \cdot L_n + \sum_{i=1}^M b_i \cdot s_{in+1}, n = 0, \dots, N - 1, \tag{3}$$

where  $n$  is the time discrete,  $N$ —the number of rows of dynamics;

$L_n, L_{n+1}$ —the value of the modeled index of living standards in the  $n$ -th and  $(n + 1)$ -th series of dynamics, accordingly;

$\vec{s}_n = (s_{1n}, \dots, s_{Mn})^T$ —a vector of factors of influence (control) on the index of living standards at the  $n$ -th discrete moment of time  $i = 1, \dots, M$ , where  $M$  is the number of factors taken into account;

$a, b_i$ —unknown coefficients of the model.

Estimation of the coefficients of the model, make it possible to obtain interval forecast estimates of the studied indicators in the following form:

$$[\hat{L}_{n+1}] = \hat{a} \cdot [\hat{L}_n] + \hat{b} \cdot \vec{s}_{n+1}, \tag{4}$$

where  $[\hat{L}_{n+1}], [\hat{L}_n]$ —interval forecasts of the modeled indices;  $\hat{a}, \hat{b}$ —estimates of the coefficients of the model and factors influencing the living standards index, accordingly.

For modeling, we use statistical data for 2014–2018. For the interval error, we will take a value of 3%, which corresponds to the error in the formation of statistical data.

As factors influencing the living standard index, we will take indicators that reflect the main forming salary:

**Table 2** Internal data for building a dynamic interval model (management factors)

<i>n</i>	Management factors, $\vec{s}_k$		
	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>
0	0,2528	0,0964	0,0054
1	0	0,4525	0
2	0,1881	0,0284	0,0288
3	0,6208	0	0,0249
4	0,7446	1	0,4394
5	1	0,7871	1

Source Compiled by the authors on the own research

$s_{1,n}$ —average salary in the industry, UAH;  
 $s_{2,n}$ —index of real salary of employees at dairy processing enterprises in Ternopil region, %;  
 $s_{3,n}$ —an increase in the total volume of the salary fund, dairy processing enterprises of the Ternopil region., thousand UAH.;

where,  $n = 0, \dots, 5$  is the period corresponding to 2015–2020.

Table 2 shows the initial data of factors influencing the living standards index for the listed enterprises.

Let us construct an interval model of the dynamics of the living standards index of employees at dairy processing enterprises of the Ternopil region, which we describe with discrete difference equations in the following form:

$$L_{n+1} = a \cdot L_n + \sum_{i=1}^3 b_i \cdot s_{in+1}, \quad n = 0, \dots, 5, \tag{5}$$

where  $L_{n+1}$  is the value of the modeled index of the living standard in the  $(n + 1)$ -th row of dynamics and  $L_n$  is the index value of the living standard in the  $n$ -th row of the dynamics,  $\vec{s}_n = (s_{1n}, s_{2n}, s_{3n})^T$  is the vector of factors of influence (control) on the index of the living standard,  $a$  is the coefficient of the model, and  $b_i$  is the unknown coefficients of influence factors on the index of the living standar.

We can write the dynamics model in the following form:

$$\{L_{i+1} = a \cdot L_i + b_1 \cdot s_{i+1,1} + b_2 \cdot s_{i+1,2} + b_3 \cdot s_{i+1,3}, \quad i = 0, \dots, 5 \tag{6}$$

We find the solution of the system of equations using methods for analyzing interval data for such conditions.

$$L_n \in [L_n^-; L_n^+], \quad n = 0, \dots, 5 \tag{7}$$

where  $L_n^- = L_n - \Delta$ ,  $L_n^+ = L_n + \Delta$  are the lower and upper boundaries of the interval values of the level indicator, taking into account the statistical error.

**Table 3** Interval values of the life level indicator

$n$	Interval boundaries of the level indicator		
	$L_{0n}$	$L_n^-$	$L_n^+$
0	1,1129	1,057	1,169
1	1,1122	1,057	1,168
2	1,0509	0,998	1,103
3	1,0373	0,985	1,089
4	1,0345	0,983	1,086
5	1,0417	0,990	1,094

Source Compiled by the authors on the own research

Table 3 shows the initial data of the level of life indicator, which is given in interval form, for constructing a dynamic interval model.

Let us write down an interval system of linear algebraic equations, the solution of which is the coefficients of the model. To obtain a model of dynamics, it is enough to obtain a solution in the form of a point of the solution domain of a given system. This system is an interval system of interval equations. In practice, this problem is usually reduced to an optimization problem, the solution of which is sought by methods of linear programming and methods of random search (Darmorost et al. 2019; Pryimak 2020; Brych 2020c, 2019b).

After assessing the coefficients of the interval model of the dynamics of income of regional enterprises by means of the MatLab, we obtained the following results in the form of a point model:

$$L_{n+1} = 0,966 \cdot L_n + 0,039 \cdot s_{1,n+1} - 0,015 \cdot s_{2,n+1} + 0,01 \cdot s_{3,n+1} \quad (8)$$

The resulting model of dynamics allows the development of a set of management decisions aimed at improving the living standards of employees in the dairy industry based on the following factors: salary system as the average salary in the industry, the real salary index, which is formed taking into account the dynamics of prices for food products and an increase in the payroll labor.

In particular, the increase in the salary fund allows the accounting in the salary system to increase both salary and other types of financial remuneration for employees in the dairy industry to compensate for inflation and growing costs to ensure an adequate standard of living.

## 6 Conclusion

Thus, the developed model makes it possible to substantiate management decisions on the formation of a remuneration system at enterprises, taking into account the financial security of employees. In addition, it should be noted that the results of

modeling the indicator of the employees living standards at dairy processing enterprises in the Ternopil region have established the incapability and inconsistency of such indicators of living standards as the level of income, salary and other financial indicators of income in order to adequately reflect the real compliance of the salary system and the financial security of employees. Therefore, it is advisable to develop or improve the remuneration system at enterprises in the direction of compensation expenses and ensuring the financial security of employees on the basis of both salary and other factors of financial remuneration of employees of dairy enterprises.

## References

- Kremlin, N.D.: Problems of assessing the living standards of the population. *Quest. Stat.* **8**, 18–23 (2000). (in English)
- Lapushnyak, M.: Evolution of scientific views on the essence of the socio-economic category “living standards” and methods of its research. *J. Soc. Econ. Geogr.* **15**(2), 127–130 (2013). (in English)
- Cherenko, L.M. (ed.): *The Standard of Living of the Population of Ukraine*. NAS of Ukraine, Institute of Demographic and Social Research, State Statistics Committee of Ukraine, LLC “Publishing House” Consultant (2006). (in Ukrainian)
- Revnitseva, O.V.: Historical aspects of the study of living standards. *Bull. Zhstu Ser. Econ. Sci.* **31**, 228–235 (2005). (in Ukrainian)
- Brych, V., Manzhula, V., Borysiak, O., Liakhovych, G., Halysh, N., Tolubyak, V.: Communication model of energy service market participants in the context of cyclic management city infrastructure. In: *Proceedings of the X-th International Conference on Advanced Computer Information Technologies (ACIT 2020)*, Deggendorf, Germany, pp. 678–681 (2020a). <https://doi.org/10.1109/ACIT49673.2020.9208902>. Accessed 12 July 2021. (in English)
- Halysh, N., Borysiak, O., Brych, V., Korol, V., Vakun, O., Zaburanna, L.: Technical and economic analysis of implementation of standards for solid fuels. In: Alareeni, B., Hamdan, A., Elgedawy, I. (eds.) *ICBT 2020. LNNS*, vol. 194, pp. 931–942. Springer, Cham (2021). [https://doi.org/10.1007/978-3-030-69221-6\\_72](https://doi.org/10.1007/978-3-030-69221-6_72)
- Brych, V., Borysiak, O., Yushchenko, N., Bondarchuk, M., Alieksieiev, I., Halysh, N.: Factor modeling of the interaction of agricultural enterprises and enterprises producing green energy to optimize the biomass supply Chain. In: *Proceedings of the XI-th International Conference on Advanced Computer Information Technologies (ACIT 2021)*, Deggendorf, Germany, pp. 425–427 (2021a). <https://doi.org/10.1109/ACIT52158.2021.9548463>. Accessed 12 July 2021. (in English)
- Brych, V., Manzhula, V., Borysiak, O., Bondarchuk, M., Alieksieiev, I., Halysh, N.: Factor analysis of financial and economic activities of energy enterprises of Ukraine. In: *Proceedings of the XI-th International Conference on Advanced Computer Information Technologies (ACIT 2021)*, Deggendorf, Germany, pp. 415–419 (2021b). <https://doi.org/10.1109/ACIT52158.2021.9548358>. Accessed 12 July 2021. (in English)
- Standard of Living by Country - World Population Review. <https://worldpopulationreview.com/country-rankings/standard-of-living-by-country>. Accessed 10 Aug 2021. (in English)
- Sadova, U.Ya., Semiv, L.K.: Factor analysis of living standards in the region with low labor market capacity. *Reg. Econ.* **2**, 92–102 (2005). (in Ukrainian)
- Uzunov, F.V.: Theoretical bases of an estimation of level and quality of life of the population of regions. *Bus. Inf.* 11–12, 80–85 (2002). (in Ukrainian)
- Dijkstra, L., Annoni, P., Kozovska, K.: A new regional competitiveness index: theory, methods and findings. In: *European Union Regional Policy Working* (2011). (in English)

- Dyvak, M., Pukas, A., Oliynyk, I., Melnyk, A.: Selection the 'saturated' block from interval system of linear algebraic equations for recurrent laryngeal nerve identification. In: Proceedings of the 2018 IEEE 2nd International Conference on Data Stream Mining and Processing, DSMP, vol. 8478528, pp. 444–448 (2018). (in English)
- Brych, V., Manzhula, V., Halysh, N., Holubchak, O., Korol, S., Stetsko, M.: Management of enterprise assortment policy by solid biofuels production. In: 9th International Conference on Advanced Computer Information Technologies (ACIT), Ceske Budejovice, Czech Republic, 5–7 June 2019, pp. 370–373 (2019a). (in English)
- Dyvak, M.P., Manzhula, V.I.: The structural identification of interval models of static systems. *J. Autom. Inf. Sci.* **40**(4), 49–61 (2008). (in English)
- Dluhopolskyi, O., Brych, V., Borysiak, O., Fedirko, M., Dziubanovska, N., Halysh, N.: Modeling the environmental and economic effect of value added created in the energy service market. *Polityka Energetyczna Energy Policy J.* **24**(4), 153–164 (2021). (in English)
- Krepych, S., Dyvak, M., Stakhiv, P., Shevchuk, R.: The task of synthesis of analog filter with the specified admissible values of the output characteristics and computing complexity of the methods of their solution. In: Proceedings of the International Conference on "Experience of Designing and Application of CAD Systems in Microelectronics" (CADSM 2015), Lviv-Polyana, pp. 119–121 (2015). (in English)
- Brych, V., Manzhula, V., Brych, B., Halysh, N., Ursakii, Y., Homotiuk, V.: Estimating the efficiency of the energy service market functioning in Ukraine. In: 10th International Conference on Advanced Computer Information Technologies (ACIT), pp. 670–673 (2020b). <https://doi.org/10.1109/ACIT49673.2020.9208858>. Accessed 12 July 2021. (in English)
- Darmorost, I., Dyvak, M., Porplytsya, N., Shynkaryk, T., Martsenyuk, Y., Brych, V.: Convergence estimation of a structure identification method for discrete interval models of atmospheric pollution by nitrogen dioxide. In: 9th International Conference on Advanced Computer Information Technologies (ACIT), 117–120 (2019). <https://doi.org/10.1109/ACITT.2019.8779981>. Accessed 15 Aug 2021. (in English)
- Pryimak, V., Melnyk, B., Holubnyk, O., Kostyshyna, T., Brych, V.: A fuzzy assessment of the development of the national labor market of Ukraine. In: 2020 10th International Conference on Advanced Computer Information Technologies (ACIT), Deggendorf, Germany, pp. 682–686 (2020). <https://doi.org/10.1109/ACIT49673.2020.9208915>. Accessed 12 July 2021. (in English)
- Brych, V., Manzhula, V., Halysh, N., Zhekalo, G., Liakhovych, G., Vakun, O.: Strategy of effective pricing policy of biofuel enterprises. In: 2020 10th International Conference on Advanced Computer Information References 191 Technologies (ACIT), Deggendorf, Germany, pp. 674–677 (2020c). <https://doi.org/10.1109/ACIT49673.2020.9208815>. Accessed 12 July 2021. (in English)
- Brych, V., Dyvak, M., Porplytsya, N., Halysh, N., Tulai, O., Shpak, Y.: Modeling of dynamics of the company's share in the solid fuel market. In: 2019 9th International Conference on Advanced Computer Information Technologies (ACIT), Ceske Budejovice, Czech Republic, pp. 354–357 (2019b). <https://doi.org/10.1109/ACITT.2019.8779973>. Accessed 12 July 2021. (in English)



# Influence of the Changing Organizational Culture on the Work Outcomes of Agile Teams in the Pandemic Era



Badri Srinivasan  and Debarshi Mukherjee 

**Abstract** In a VUCA world, contemporary organizations are impacted by many triggers invoked due to government rules, external business environment, and at times by the interaction of people within the organization. This paper focuses on how the changing organizational culture impacts and influences the work outcomes of agile teams operating as complex adaptive systems (CAS) in pandemic situations. During the COVID19 pandemic, the organizational culture of organizations has undergone a remarkable change and more staff are working from home and this impacts the work outcome of the agile teams.

**Keywords** Organizational culture · Complex adaptive systems · Agile teams

## 1 Introduction

### 1.1 VUCA World

In a VUCA world, the current organizations are impacted by many stimuli which may be due to the external business environment, government rules, and the interactions among the people. Nevertheless, one of the most important factors affecting the internal operations of an organization is the organizational culture. Culture presents the biggest challenge as it focuses on social and behavioral expectations which are difficult to imitate and recreate and it is also difficult to monitor its effectiveness regularly, Sarkar (2016), Dhir (2019). However, one of the most important factors affecting the internal operations of an organization is the organizational culture. Culture presents the biggest challenge as it focuses on behavioral expectations which are difficult to copy and recreate and it is also difficult to monitor its effectiveness, Treven et al. (2008), Gregory et al. (2009), Saasongu Nongo and

---

B. Srinivasan (✉)  
Galgotias University, Noida, UP, India

D. Mukherjee  
Department of Business Management, Tripura University, Agartala, India  
e-mail: [debarshimukherjee@tripurauniv.ac.in](mailto:debarshimukherjee@tripurauniv.ac.in)

Ngutor Ikyanyon (2012). In totality, organizational culture is viewed as a set of values, habits, beliefs, organizational principles, leadership styles, symbols, memes in their associated context and which are brought together by purpose to achieve a goal. The effect of organizational culture also leads to a plethora of emotional interactions among the individuals in the organization. Culture is defined generally as a set of norms of behavior applying to teams/groups of behavior and the fundamental shared values that enable to retain these norms safely. Every organizational culture is a culture having many subcultures. Hence, every team/entity has a subculture that is a derivative or a holographic representation of the organizational culture, Ganta and Manukonda (2014), UKEssays.com (2018), Wang and Lounsbury (2021).

Hence, organizational culture is perceived as a set of values, beliefs, habits, organizational principles, leadership styles, symbols, memes in their associated context and which are brought together by a specific purpose to achieve a goal. Organizational culture is generally considered as a set of shared behavioral customs and values that impact interpersonal relationships, influence decisions, and also affect the allocation of resources, Kotter (2012), Silber and Kearny (2010). Hence, organizational change that happens daily is a very important aspect that impacts organizational culture and it needs to be handled very carefully apart from the impact of various organizational factors that impact agile teams, Srinivasan and Mukherjee (2015). Every organization is made up of subcultures within the overall organizational culture. These subcultures are engendered by various teams in the organization. Each team in the organization has a unique subculture and these set of subcultures make up the overall organizational culture of the organization. Within each team, a range of emotional and other interactions occur as each team is considered as a complex adaptive system (CAS), apart from the organization itself being considered as another CAS. Each team has a different way of operating its activities and a different approach to bring its products and solutions to the marketplace. Each team has its intergroup conflicts to arrive at the solution and social identity by which it recognizes itself and each individual in the team has a social identity by which they are identified in the team. The individuals working as part of the team are considered as agents operating in a complex environment as part of CAS and the team is considered as an entity having its boundary within which the agents interact as part of the team behavior and also interact at the boundary interface when dealing with entities external to the team. The social and psychological environment of the organization encapsulated in the organizational culture enables these subcultures to thrive, contribute to the emotional makeup of the team and their team members. Similarly, the organization is also considered as an entity that has internal and external interactions with the environment. Shoham and Hasgall (2005), McCarthy et al. (2006), Nolfi (2004), Elkington and Booysen (2015), Handy (1993), Bennet and Bennet (2003) and Kamo and Phillips (1997). Similarly, organizational culture is also impacted by the effectiveness of team leadership in technology-based project environments. In a VUCA world, the organization needs to manage its external and internal interactions as agents operating in a CAS environment and one of the most important aspects that enable these interactions is the organizational culture, Tajfel and Turner (1979), Tajfel and Turner (1986), Thamhain (2004), Ulloa and Adams (2004).

This paper is structured as per the following sections given below—

Objective

High Level Characteristics of Complex Adaptive Systems (CAS)

- Foundations of Complex Adaptive Systems

Impact of Organizational Culture on Agile Teams

Definition of Organizational Culture

Work Groups vs. Teams

Influence of Organizational Culture

Role of Leaders in influencing the Organization Culture

Focus Group Discussion

Conclusions and Recommendations

References.

## ***1.2 Objective***

This paper highlights the impact of organizational culture on agile teams operating as complex adaptive systems. The study deploys a series of focus group discussions to reveal that different teams have unique subcultures that enable them to deliver products and services to the customers in the best possible manner as per the requirement. The specific problem area that is focused is on the influence of the changing organizational culture on the work outcomes of agile teams in the pandemic scenario. The research questions focused are—

RQ1. What role does the organizational culture have on the working of the organization and teams as complex adaptive systems (CAS)?

RQ2. How does the organizational culture have an impact on the work outcomes of agile teams?

The research questions are important as they try to give an insight into the complex nature and influence of organizational culture which is itself influenced by many variable factors operating in the complex domain on the work outcomes of the agile teams in the pandemic scenario.

## **2 High-Level Characteristics of CAS**

### ***2.1 Foundations of Complex Adaptive Systems (CAS)***

A CAS is made up of a large number of agents who operate as per a set of rules. The rules necessitate that the agents adapt their behavior as per the other agents existing in the system as per the system context. The agents collaborate and are adaptive to the environment. The key attributes of CAS are—robustness, self-organization,

emergence, hierarchy, inter-connected autonomous agents, feedback loops, and operating at the edge of chaos, Lichtenstein et al. (2006). The agile team is considered to be made up of autonomous team members who have their schemata (values, standards, beliefs) and these are adopted by the individual team members, Srinivasan and Mukherjee (2018). These agile teams operate as subcultures within the overall organizational culture. Given the extreme complexities of the environment and the teams operating as CAS in a complex environment, organization culture forms a very important aspect that either enables or hampers the agile teams to deliver their solutions to the marketplace effectively.

### **3 Impact of Organizational Culture on Agile Teams**

#### ***3.1 Definition of Organizational Culture***

Organizational Culture is generally considered as a set of shared beliefs, values, and memes that influence interpersonal behavior, allocation of people, and decision-making among the teams within the organization, Ouchi and Wilkins (1985), Schein (1986), Schein (1990), Hatch (1993), Eisenberg and Riley (2001), Allaire and Firsirotu (1984), Restas et al. (2018), Dooley (1997), Palmberg (2009), Boal and Schultz (2007) and Nan (2011). It is critical that people understand the dynamics of organizational change and how it impacts the organization daily and how it is important to have a plan to change the culture if it is necessitated for organizational improvement. Otherwise, the change in the organizational culture may not be truly effective, Kotter (2012), Silber and Kearny (2010). Organizational culture is considered as the invisible glue that holds the organization structure together and binds the people which enables them to accomplish the organizational goals. The cultural values are linked to the cultural memes and symbols that contribute to the culture and keep it alive. Similarly, the leadership and management values and practices are also derived from the culture that embodies the organizational values. Hence, conflict resolution, negotiation, and healing that occurs also takes place within the cultural context, Bolman and Deal (2008). Organizational culture has a significant impact on the goals and the success/failure of the organization as evidenced by the case study of Delta Airlines, Coca Cola and Enron which could not manage their business strategies properly as their business strategies had changed as per the market requirements could not be aligned appropriately with their organizational culture change and their cultures could not match the strategies made by the organization as per the business requirements. Hence, organizational culture levies an invisible norm and values that impact the agile teams that operate within the organizational context and which determines the success/failure of the team to deliver to the customer as per the business requirements based on the alignment of the agile team as per the organizational culture and the business strategy. Due to the impact of the COVID19 pandemic, more members of the organization are working from home and this has an impact on the

work outcomes of the agile teams. The organizational culture which was prevalent during the pre-pandemic era has undergone a significant change currently and the organizational culture in the pandemic and post-pandemic era will be influenced by the operational work environment that includes the virtual work environment apart from the physical work environment. As the future of work changes on account of the pandemic, the organizational culture of the organization is also changing and this change is having an impact on the work outcome of the agile teams as members work from home and also from the office and the culture of the organization undergoes a change to manage this scenario. Various aids like better communication tools, video conferencing tools, and other tools are used to simulate an environment that is similar to the office culture. However, the impact of other environments like the home environment and other environments impacting the office environment needs to be managed appropriately. It is not a new phenomenon that people are working from home. However, in the pre-pandemic era, the proportion of the total population working from home was restricted to a handful of people who had specific requirements. However, in the pandemic and post-pandemic era, this proportion of people is going to significantly change and the increased percentage of staff working from home and other changes pertaining to direct communication has led to changes in the organizational culture and which impacts the work outcome of the teams. In order to further test this hypothesis to some level, a focus group discussion (FGD) was undertaken among a few organizations in the Information Technology (IT) domain to understand the impact of this pandemic, and the details are outlined in the future sections.

### **3.2 *Workgroups vs. Teams***

A discussion on organizational culture will always involve the concept of workgroups vs. teams and clarity on how they may be different in the organizational context. Workgroups and teams differ in their operational activity and their outcomes. Workgroups are generally formed to execute the instructions as a task-driven activity given by the leader. Within the group, all the members operate as individuals who complete the specific tasks as per their skill level and competence and contribute to the output of the workgroup. In contrast, the teams when they are formed always work towards a common goal and focus on delivering a larger outcome. They do not operate from activities that are focused on executing task-based outputs only. The team members use their skills and competencies to collaborate on the team as a CAS and deliver their outcomes which is not a simple addition of the various tasks with which the team is involved. Agile teams when formed are generally considered as long-lived feature teams that work on different assignments and applications and the individuals within the team may also work on different work areas and they also build their skills in different areas over a while. This makes them well-rounded individuals who can operate in a variety of different work areas as they continuously build their skills and competencies over time while operating within the team as

a CAS agent. Workgroups present in the organization operate independently of the common goals. They are more suited in organizations having a top-down hierarchical structure. The focus in a workgroup is on the individual performance of the member. Hence, the members in the workgroup compete with the other members in their quest for individual accomplishments. On the other hand, in a team, the members work collaboratively together to achieve the common goal or objective and the team operates as per the guidelines and rules of a CAS and the focus is on the collective outcome of the team even though each individual is focused on his area and also contributes to the team goal, Katzenbach and Smith (2003).

### ***3.3 Influence of Organizational Culture***

Organizational culture consists of three key features mainly—values, norms, and artifacts. Artifacts are the more visible differences in a culture like dress codes. Espoused values or stated values are things that are considered to be important by the management like “keep the customer first in mind”. Norms that are accepted by all the members in the organization are values, belief systems, and memes that are considered as embedded in the culture or taken for granted as “this is how we do things here”, Silber and Kearny (2010). Leaders mimic their behaviors and attitude patterns as observed in the organization. Organizational culture has its roots in the sociology of culture and the social movement theory, Morrill (2008), Scholl (2003). When cultural behaviors are challenged, fear may set in the organization if it is not managed properly by the leaders. Leaders must exemplify the culture of the organization and they must walk the talk and also help the members to manage the culture and resolve their fears when the cultural behaviors are challenged in the organization and seek out which is the appropriate way to move forward, Grenny et al. (2013). Individual cognition influences team interactions as every person processes the information as per the information assimilated by him from the environment and as per his mental models and the individual learning styles also influence how the information is adopted by the individual. Apart from this, the belief pattern of each individual is also transferred to the team through the interpersonal interactions that the team members have with one another. All this happens within the boundary of the team operating as a CAS. Further, individual cognition and memory influence the information that is recollected and how it is transmitted to the individual thought processes which thereby influences the individual team member perceptions. Based on the history of the past interpersonal relationships, the team members view the processed information from that perspective. Hence, team interactions improve or decrease based on the confidence level provided by the past historical information, Lucas (2010). For agile teams to operate within the purview of the CAS, they already follow the rules of CAS as they function as self-organizing teams. For the work to be aligned as a team, the work values are derived from the desired behaviors and specific team values and beliefs that are codified through the organizational culture and adopted by the team as specific team culture through alignment. The

alignment ensures that the team is aided by the organizational culture to deliver high-quality delivery to the customers as the team culture is not antagonistic to the existing organizational culture. The values prevalent in the organization are in turn derived from the bigger interfaces and the environmental system. Thus, the organizational culture is influenced by the team culture and the team culture is in turn influenced by the organizational culture. The individual cultural and team values and the codified behavioral patterns and memes prevalent in the team culture influence the organizational culture. In the same way, the broad codified cultural patterns and memes at the organizational level influence the teams and the individuals. The codified behavioral patterns are the common belief systems that are transferred across the teams and which are then embedded with the organization's rules and regulations as they become prevalent across the organization, Rosenblatt (2011).

This two-way interaction tries to maintain a status quo despite the environmental and other triggers impacting the organization. If the trigger is more than the organizational culture can absorb, then the culture begins to shift and it is incumbent on the leaders to observe these changes and focus on the status quo as the values and beliefs of the organizational culture are derived from the leaders who had set up these systems in the first place when the organization was created. Issues pertaining to cultural alignment within the organizational boundaries may need to be managed by the organizational leadership so that they could find out if the outcomes align with the goals and objectives of the organization, Silber and Kearny (2010). Teams impact the organizational culture in multiple ways as they take part in activities that impact their behaviors as they strive to drive their performance to the next higher level. If teams resist change by not adopting the same values as the organization, then they may not meet the organization's goals and objectives and this misalignment may need to be managed by the leadership Katzenbach and Smith (2003). As behaviors and attitudes are complex and subject to interpretation, the leadership must provide support to the teams and individuals so that they can align with the organizational culture. Some of the measures could be—a strong and purposeful vision for change, clear goals, and objectives, clarity of thought, managing the expectations of culturally diverse individuals, compensation and reward system, conflict resolution and management, sufficient training and development opportunities, team members who are not compliant may need to be taken care and may need to be removed if no other solutions work out and clear communication through tools and technologies, O'Donnell and Boyle (2008).

### ***3.4 Role of Leaders in Influencing Organizational Culture***

The relationship between the leaders and the followers in an organization is based on the principles of social identity theory and the leaders are successful to the extent they can influence and connect their cause or purpose to the identity of their followers Joshi et al. (2009). The leaders in the organization should trigger the intrinsic motivation of the team members and align them with their purpose to enable them to

participate in the mission of the organization, Bolman and Deal (2008). Organizational leadership should also focus on influencing the behavior of the team members and ensure that they are aligned with the organizational goals and objectives, Grenny et al. (2013). The leaders also help to connect the team members to the organizational vision in an emotional manner and this helps the leaders to align the members to the mission of the organization, Mitchell and Boyle (2009). The value addition that the team members bring to the team and the organization depends upon the individual processing and cognitive abilities of the members and their experience and knowledge. Further, the team members are expected to focus on managing the risk in their interactions as part of the CAS and each individual acting as an agent within the organizational boundary. The team members thereby challenge and boost each other in their interactions and build strong bonds over time which helps them to perform effectively. Over time, the team members gain respect and they respect each other during their daily interactions as agents operating within the organizational and team boundaries, Lucas (2010); Katzenbach and Smith (2003). Changing market opportunities and competitors may create a requirement in the organization to build high-performing teams that can deliver solutions rapidly to the marketplace. The teams also engage in social interactions within the team boundaries and across the team boundaries with other teams in the organization and all these teams operate within the organizational boundaries and these interactions enable and sustain the performance of the organization, Katzenbach and Smith (2003). Many teams struggle to become high-performing teams due to a variety of reasons and the leadership in the organization should strive to guide them and enable them to build their competencies and create a robust work ethic that will help them to become high-performing teams, Schyve (2009). There are different types of teams in the organization and these types of teams support each other to achieve the overall organizational goals. Executive-level teams help to facilitate the logic of the vision of the organization and they help other teams to become aligned with the vision of the organization and they also support the risk-taking ability of other teams. These teams have a very clear vision about what needs to be accomplished and they also have high emotional intelligence and this helps them to support other teams, Carillo (2015). Strategic organizational change programs and initiatives are managed by the change management teams. These teams are well versed in analyzing the positive and negative aspects of change and how it impacts the psychological well-being of the organization. They are also involved in measuring the impact of change and how it aligns with the strategy of the organization. The teams are also having the required competency in managing the socio-political landscape of the organization to ensure that the change programs are not delayed and the formal hierarchy of the organization is respected appropriately, Katzenbach and Smith (2003); Silber and Kearny (2010). The culture of the organization should be matched to the purpose of the organization by the leadership if the goals of the organization have to be achieved. When the organizational culture is being changed, new beliefs, attitudes, and behaviors are promoted and the behavior of the leaders is also changed as part of the organizational transformation process.



Other skills like cognitive abilities, collaboration with other stakeholders, and negotiation and conflict resolution skills are also enhanced in all the members as part of the change management process, Hambrick (1997).

Organizational change management processes, people, leadership, organizational environment, stakeholders, and other factors in the external environment are all key factors that contribute to the organizational culture in an organization that is made up of the subculture of the individual agile teams and their interactions with other teams in the organization and the external environment.

### ***3.5 Focus Group Discussion (FGD)***

A focus group discussion generally encompasses getting the people from similar backgrounds or having similar experiences together and facilitating them to discuss a specific topic. It is a type of qualitative research and the questions are focused on their perceptions, opinions, beliefs, attitudes, and ideas. The members are also permitted to discuss with the other group members on the topic areas. The FGD was undertaken over other established methodologies to collect additional information on the research area and to enable us to prepare a detailed survey for a larger quantitative study in the future. There were some research gaps in the area pertaining to how the influence of the organizational culture impacted the work outcomes of the agile teams in the post-pandemic scenario and therefore, in this case, to understand the hypothesis—The impact of the changing organizational culture on the work outcome of agile teams during the pandemic and to also get feedback on the research questions, an FGD was undertaken with twenty-five members belonging to different organizations in the IT domain in the area of software development. The members had at least 15+ years of experience in project management, software development, application support and maintenance, and related areas. The session was facilitated through skype and the conversations centered around the role of the changing organizational culture in the pandemic era and how it has impacted the work outcomes of the agile teams involved in software development. The general opinion of the group was that due to various factors like work from home, loss of direct communication, and physical contact, the organizational culture was changing to take into account these factors even though there was no apparent change at the surface level and the existing work could still be completed as per the schedule. The expectations from the FGD were to check and validate qualitatively the research questions and hypothesis based on the perceptions, opinions, and behaviors of the respondents in the target segment so that an additional detailed quantitative survey could be carried out in the future with greater clarity on the hypothesis that is to be further validated.

The work outcomes of the agile teams were not affected and they could complete the work as per the schedule. However, the communication tools and other tools needed to operate at the optimum level, and due to various issues present like periodical loss of internet connectivity due to faulty cables and channels and other factors, the teams had to take a greater effort to ensure everything was going as per the

schedule. It also led to the change in the organizational culture and mindset as there was a loss of direct physical contact and networking and connecting required greater effort to ensure things were completed as per the schedule. Additional research through empirical studies and observations may help to elicit more details in this area.

## 4 Conclusions and Recommendations

The main purpose of this paper was to focus on the impact of the changing organizational culture on the work outcomes of the agile teams in the pandemic era apart from the research questions and how if the agile teams are aligned with the organizational culture, they can meet the goals of the organization and they operate effectively. The FGD validated the research questions—

1. The role of the organizational culture on the working of the organization and teams as complex adaptive systems (CAS) and how it influences the work outcomes—about 80% of the respondents indicated that the organizational culture had a very important role to play in the successful work outcomes of the agile teams and it still had a role in the post-pandemic world and it could be considered as a very important factor in the success of the organization.

However, if the agile teams are not aligned with the overall organizational structure, then they struggle to meet the organizational goals and they may not be very effective in the organization. Various factors that impact the organizational culture within which the agile teams operate have been discussed including physical and virtual work environments. This set of factors that impact the organizational culture could together be considered as an overall integrated framework or model that could be further strengthened and validated through a detailed quantitative survey with a specific hypothesis in the future.

Hence, organizational culture is the most important factor that has a strong effect and social influence on the agile teams operating in an organization. Each agile team has its sub-culture which is aligned with the overall culture of the organization. The agile teams are considered as CAS and operate within the boundary of the team and the organization. Organizational culture is the invisible glue that impacts and binds all the other factors influencing an organization and the agile teams which operate within this organizational boundary are constrained by this culture and they manage their subcultures within the confines of the organizational boundary. The total of all the subcultures forms the overall organizational culture of the organization which is nurtured and facilitated by the leadership of the organization who focus on building the organizational culture and which is matching the organizational goals and objectives. This enables the agile teams to deliver effectively to the customer as per the requirement. Additional empirical studies may be undertaken to get more details in this area as the post-pandemic era will be operating in a completely different environment with various people working from home and the office and which would,

in turn, impact the organizational culture of the organization and the teams operating within the organizational boundaries trying to meet their work outcomes.

## References

- Allaire, Y., Firsirotu, M.E.: Theories of organizational culture. *Organ. Stud.* **5**(3), 193–226 (1984). <https://doi.org/10.1177/017084068400500301>
- Bennet, A., Bennet, D.: Designing the knowledge organization of the future: the intelligent complex adaptive system. In: Holsapple, C.W. (ed.) *Handbook on Knowledge Management. International Handbooks on Information Systems*, vol. 2. Springer, Heidelberg (2003). [https://doi.org/10.1007/978-3-540-24748-7\\_30](https://doi.org/10.1007/978-3-540-24748-7_30)
- Boal, K.B., Schultz, P.L.: Storytelling, time, and evolution: the role of strategic leadership in complex adaptive systems. *Leadersh. Quart.* **18**(4), 411–428 (2007)
- Bolman, L.G., Deal, T.E.: *Reframing Organizations: Artistry, Choice, and Leadership*, 4th edn. Jossey-Bass, San Francisco (2008)
- Carrillo, R.A.: Empower, trust & resource: the role of executive leaders in safety. *Prof. Saf.* **60**(5), 32–33 (2015)
- Dhir, S.: The changing nature of work, leadership, and organizational culture in future ready organizations. CMC senior theses 2064 (2019). [https://scholarship.claremont.edu/cmcs\\_theses/2064](https://scholarship.claremont.edu/cmcs_theses/2064)
- Dooley, K.J.: A complex adaptive systems model of organization change. *Nonlinear Dyn. Psychol. Life Sci.* **1**(69–97), 1997 (1997). <https://doi.org/10.1023/A:1022375910940>
- Eisenberg, E., Riley, P.: Organizational culture. In: *The New Handbook of Organizational Communication*, pp. 291–322. SAGE Publications, Inc. (2001). <https://doi.org/10.4135/9781412986243>
- Elkington, R., Booysen, L.: Innovative leadership as enabling function within organizations: a complex adaptive system approach (2015). <https://doi.org/10.1002/jls.21414>
- Ganta, V.C., Manukonda, J.K.: Leadership during change and uncertainty in organizations. *Int. J. Organ. Behav. Manag. Perspect.* **3**(3), 1183 (2014)
- Gregory, B.T., Harris, S.G., Armenakis, A.A., Shook, C.L.: Organizational culture and effectiveness: a study of values, attitudes, and organizational outcomes. *J. Bus. Res.* **62**(7), 673–679 (2009)
- Grenny, J., Patterson, K., Maxfield, D., McMillan, R., Switzler, A.: *Influencer: The New Science of Change*, 2nd edn. McGraw Hill, New York (2013)
- Hambrick, D.C.: Corporate coherence and the top management team. *Strategy Leadersh.* **25**, 24–29 (1997)
- Handy, C.: *Understanding Organizations*. Oxford University Press, New York (1993)
- Hatch, M.J.: The dynamics of organizational culture. *Acad. Manag. Rev.* **18**(4) (1993). <https://doi.org/10.5465/amr.1993.9402210154>
- Joshi, A., Lazarova, M.B., Liao, H.: Getting everyone on board: the role of inspirational leadership in geographically dispersed teams. *Organ. Sci.* **20**(1), 240–252, 275–276 (2009)
- Kamo, J., Phillips, F.: The evolutionary organization as a complex adaptive system. In: *Innovation in Technology Management. The Key to Global Leadership. PICMET 1997*, pp. 325–330 (1997). <https://doi.org/10.1109/PICMET.1997.653399>
- Katzenbach, J.R., Smith, D.K.: *The Wisdom of Teams*. Harper Collins Publishers, New York (2003)
- Kotter, J.: *Leadership: the key to changing organizational culture* (2012). <https://www.forbes.com/sites/johnkotter/2012/09/27/the-key-to-changing-organizational-culture/?sh=348ea0d35509>. Accessed 1 July 2021
- Lichtenstein, B.B., Uhl-Bien, M., Marion, R., Seers, A., Orton, J.D., Schreiber, C.: Complexity leadership theory: an interactive perspective on leading in complex adaptive systems. *Emerg. Complex. Organ.* **8**(4), 2–12 (2006)

- Lucas, L.M.: The role of teams, culture, and capacity in the transfer of organizational practices. *Learn. Organ.* **17**(5), 419–436 (2010). <https://doi.org/10.1108/09696471011059813>
- McCarthy, I.P., Tsinopoulos, C., Allen, P., Rose-Anderssen, C.: New product development as a complex adaptive system of decisions. *J. Prod. Innov. Manag.* **23**(5), 437–456 (2006). <https://doi.org/10.1111/j.1540-5885.2006.00215.x>
- Mitchell, R.J., Boyle, B.: A theoretical model of transformational leadership's role in diverse teams. *Leadersh. Org. Dev. J.* **30**(5), 455–474 (2009). <https://doi.org/10.1108/01437730910968714>
- Morrill, C.: Culture and organization theory. *Ann. Am. Acad. Polit. Soc. Sci.* **619**, 15 (2008)
- Nan, N.: Capturing bottom-up information technology use processes: a complex adaptive systems model. *MIS Q.* **35**(2), 505–532 (2011). <https://doi.org/10.2307/23044054>
- Nolfi, S.: Behavior as a complex adaptive system: on the role of self-organization in the development of individual and collective behavior. *Complexus* **2**, 195–203 (2004). <https://doi.org/10.1159/000093690>
- Nongo, E.S., Ikyanyon, D.N.: The influence of corporate culture on employee commitment to the organization. *Int. J. Bus. Manag.* **7**(22) (2012). ISSN: 1833-3850, E-ISSN: 1833-8119. Published by Canadian Center of Science and Education
- O'Donnell, O., Boyle, R.: Understanding and managing organizational culture (2008). <http://www.cpmr.gov.ie/Documents/Understanding%20and%20Managing%20Organisational%20Culture.pdf>. Accessed 21 July 2021
- Ouchi, W.G., Wilkins, A.L.: Organizational culture. *Ann. Rev. Sociol.* **11**, 457–483 (1985). <https://doi.org/10.1146/annurev.so.11.080185.002325>
- Palmberg, K.: Complex adaptive systems as metaphors for organizational management. *Learn. Organ.* **16**(6), 483–498 (2009). <https://doi.org/10.1108/09696470910993954>
- Restas, P., Czibor, A., Szabo, Z.P.: Understanding workplace behavior through organizational culture and complex adaptive systems theory. Research Gate (2018)
- Rosenblatt, V.: The impact of institutional processes, social networks, and culture on diffusion of global work values in multinational organizations. *Cross Cult. Manag.* **18**(1), 105–121 (2011). <https://doi.org/10.1108/13527601111104322>
- Sarkar, A.: We live in a VUCA world: the importance of responsible leadership. *Dev. Learn. Organ. Int. J.* **30**(3), 9–12 (2006). <https://doi.org/10.1108/DLO-07-2015-0062>
- Schein, E.H.: What you need to know about organizational culture. *Train. Dev. J.* **40**(1), 30–33 (1986)
- Schein, E.H.: Organizational culture. *Am. Psychol.* **45**(2), 109–119 (1990). <https://doi.org/10.1037/0003-066X.45.2.109>
- Scholl, R.W.: Organizational culture (2003). <http://www.uri.edu/research/lrc/scholl/webnotes/Culture.htm>. Accessed 19 July 2021
- Schывe, P.M.: Leadership in healthcare organizations: a guide to joint commission leadership standards (2009). [http://www.jointcommission.org/assets/1/18/WP\\_leadership\\_standards.pdf](http://www.jointcommission.org/assets/1/18/WP_leadership_standards.pdf). Accessed 24 July 2021
- Shoham, S., Hasgall, A.: Knowledge workers as fractals in a complex adaptive organization. *Knowl. Process Manag. J. Corp. Transform.* (2005). <https://doi.org/10.1002/kpm.228>
- Silber, K.H., Kearny, L.: Organizational Intelligence: A Guide to Understanding the Business of Your Organization for HR, Training, and Performance Consulting. Pfeiffer, San Francisco (2010)
- Srinivasan, B.N., Mukherjee, D.: Characteristics of agile teams—a discussion on technology and culture. *IMS Manthan X* (1), 75–82 (2015)
- Srinivasan, B.N., Mukherjee, D.: Agile teams as complex adaptive systems (CAS). *Int. J. Inf. Technol.* **10**, 367–378 (2018). <https://doi.org/10.1007/s41870-018-0122-3>
- Tajfel, H., Turner, J.C.: An integrative theory of intergroup conflict. In: Austin, W.G., Worchel, S. (eds.) *The Social Psychology of Intergroup Relations*. Brooks/Cole, Monterey (1979)
- Tajfel, H., Turner, J.C.: The social identity theory of inter-group behavior. In: Worchel, S., Austin, L.W. (eds.) *Psychology of Intergroup Relations*. Nelson-Hall, Chicago (1986).
- Thamhain, H.J.: Team leadership effectiveness in technology-based project environments. *Proj. Manag. J.* **35**(4), 35 (2004)

- Treven, S., Mulej, M., Lynn, M.: The impact of culture on organizational behavior. *Manag. J. Contemp. Manag. Issues* **13**(2), 27–39 (2008)
- UK Essays: The Impact of Organizational Culture on Teams (2018). <https://www.ukessays.com/essays/business/the-impact-of-organisational-culture-on-teams.php?vref=1>. Accessed 1 July 2021
- Ulloa, B.C.R., Adams, S.G.: Attitude toward teamwork and effective teaming. *Team Perform. Manag.* **10**(7/8), 145 (2004)
- Wang, M.S., Lounsbury, M.: Cultural encounters: a practice-driven institutional approach to the study of organizational culture. In: Lounsbury, M., Anderson, D.A., Spee, P. (eds.) *On Practice and Institution: New Empirical Directions. Research in the Sociology of Organizations*, vol. 71, pp. 165–198. Emerald Publishing Limited, Bingley (2021). <https://doi.org/10.1108/S0733-558X20200000071007>

# Formation of Stakeholders' Interaction of Agricultural Insurance on the Basis of Corporate Social Responsibility



Oleg Skydan , Oleksandr Vilenchuk , Nataliia Valinkevych ,  
Nataliia Kurovska , and Nadiia Reznik 

**Abstract** The interaction processes activation of agricultural insurance stakeholders from the regional to the global level testifies to their natural reaction to the possibility of timely and effective counteraction to probable risks in the field of agricultural production. The authors emphasize that the determining condition for the coordination of insurance interests of market participants is their corporate social responsibility. Based on the above, the purpose of this study is to scientifically substantiate the process of generating insurance relations in the agricultural sector based on corporate social responsibility. The initial data of the study was formed by the results of a poll. The participants of the survey were potential consumers of insurance services, 250 enterprises of various forms of ownership within Zhytomyr, Kyiv and Khmelnytsky regions, as well as 40 insurance companies, branches and regional directorates that position their services in the field of property insurance. The empirical study was conducted using the tools for estimating the minimum required sample size for agricultural enterprises and insurance companies. The results of the sociological survey showed the feasibility of forming a systematic interaction between stakeholders of agricultural insurance. The authors emphasize that the achievement of this interaction requires the introduction of four levels of corporate social responsibility, namely: moral and ethical, communicative, financial and economic and inclusive. This will allow participants in the insurance process to implement closed distribution of risks in space and time effectively, while minimizing agricultural risks at the micro and macro levels. At the theoretical level, it is proven that the key components of financial inclusion in the formation of corporate social responsibility of agricultural insurance

---

O. Skydan (✉) · O. Vilenchuk · N. Valinkevych · N. Kurovska  
Polissya National University, Zhytomyr, Ukraine  
e-mail: [skydanolegv@ukr.net](mailto:skydanolegv@ukr.net)

O. Vilenchuk  
e-mail: [vilenchuk@ukr.net](mailto:vilenchuk@ukr.net)

N. Valinkevych  
e-mail: [natali1573@ukr.net](mailto:natali1573@ukr.net)

N. Reznik  
National University of Life and Environmental Sciences of Ukraine, Kyiv, Ukraine  
e-mail: [nadya-reznik@ukr.net](mailto:nadya-reznik@ukr.net)

stakeholders are “affordability”, “service and quality” and “reliability of insurance protection”. Summarizing scientific developments, the authors of the article have formed certain recommendations and proposals that can be used by state and non-state insurance market institutions to ensure the reliability of the agricultural sector of the economy.

**Keywords** Agricultural producers · Agricultural risk insurance · Insurance companies · Insurance market stakeholders · Social responsibility of insurance participants

## 1 Introduction

The latest transformations in the agricultural sector are due to the need to create favourable and safe conditions for agricultural production given the high probability of natural and anthropogenic risks. According to an international group of experts on climate change (Intergovernmental Panel on Climate Change, IPCC), since the beginning of the twenty-first century the number of emergencies has doubled, causing multibillion-dollar losses in the agricultural sector (IPCC 2021). The solution to this problem in the vast majority of countries (USA, Canada, China, the European Union, etc.) is carried out through a risk insurance mechanism based on the concept of corporate social responsibility.

For Ukraine in the systematic improvement period of the financial infrastructure of agricultural entrepreneurship, the issue of developing a risk insurance mechanism with the use of innovative international practices is becoming increasingly important. However, now there is a certain underestimation of the agricultural insurance role in counteracting potential risks, a weak level of communication between the participants in the insurance process, a fairly high cost of insurance services, and so on. In addition, insurance companies do not generate proper business activity in this segment of the insurance market due to: high level of agricultural insurance riskiness, low effective demand of services’ potential consumers, insufficient amounts of capital generated by them.

The national insurance business needs to be systematically modernized to ensure inclusive growth. In the general context, this form of growth is to create the necessary conditions for human development and guarantees and opportunities for participation in all spheres of life (Zinchuk 2016). The strategy for the development of the financial sector in Ukraine until 2025 stipulates that financial inclusion is based on: increasing the availability and usage level of financial services; strengthening the protection of the consumers’ rights of financial services and increasing the financial literacy level of the population (2021). All these system-forming elements of financial inclusion are united by the understanding of corporate social responsibility by stakeholders for making management decisions.

## 2 Literature Review

Conceptual principles of agricultural insurance development are covered in the scientific works of many scientists, in particular: Claassen (2017), Di Falco (2014), Eze (2020), Goodwin (2015), Kukurudz (2017), Lupenko (2015), Okhrimenko (2018), Prokopchuk (2014), Ramsey (2017), Reyesf (2020), Shashi (2012), Yanyshyn (2019), Yu (2018), Zhao (2016). The following researchers have made a significant contribution to the formation of the theory and methodology of corporate social responsibility: Bowen (1953), Grishkova (2014), Jamali (2007), Kavitha (2016), Khovrak (2017), Kolot (2012), Kuldeep (2021), Šlahor (2020), Ulah (2019), Yadav (2016), Zinchuk (2016) and other. Paying tribute to the work of many scientists, it should be noted that modern realities necessitate the formation of interaction of agricultural insurance stakeholders on the basis of corporate social responsibility. The formulated arguments determined the direction of further research.

The necessity for insurance arose with the awareness of humanity of the need to make socially responsible decisions about potential environmental threats. German economist Vagner (1881) in the nineteenth century noted that insurance should not be considered as a commercial institution, but as a “general need”, with the individual moment back, the social—comes forward. The modern understanding of agricultural insurance is interpreted as an important risk management tool that producers used to reduce the negative impact of lower crop prices and weather and climate-related events (Reyesf et al. 2020).

Authors Di Falco et al. emphasized that harvest insurance can be one of the key methods of overcoming risks in the context of climate change (2014). The positive impact of insurance on the development of the business environment in agriculture has been noted, arguing that harvest insurance not only helps farmers withstand the shock of uncertainty, but also provides an incentive to use resources efficiently and achieve higher productivity (Shashi and Umesh 2012). Eze et al. considered harvest insurance an innovative mechanism for neutralizing risks in conditions of extreme weather events, in particular, such as drought, floods, etc. (2020). With the aggravation of natural and anthropogenic risks in the agricultural sector, the scientific discourse on increasing the role of stakeholders' social responsibility in solving current problems is growing. Khovrak highlighted that one of the most effective market leadership strategies is social responsibility (2017).

One of the founders of the social responsibility concept argued that market participants should pursue such policies, make such decisions, or take such measures that are desirable from the standpoint of achieving the goals and values of our society (Bowen 1953). The concept of social responsibility “has attracted worldwide attention and given a new resonance to the world economy” (Jamali and Mirshak 2007). The versatility of the conceptual apparatus of social responsibility gives grounds to consider this idea as “a concept that encourages each person and organization to take into account the interests of society, taking responsibility for the impact of their activities on other people, citizens and the environment in all aspects” (Hrishnova et al. 2014). According to Yadav et al. social responsibility should be seen as an



initiative, i.e., a kind of corporations' gratitude to the society from which they earn a useful profit (2016).

Over the last decade, scientists from different countries have expressed a common position on the need to socialize business representatives and increase the responsibility of their stakeholders. According to the international standards of social responsibility NORMA PN-ISO 26000—"the responsibility of organizations for the consequences of their decisions and the impact on society and the environment, which ensures transparent and ethical behaviour that promotes sustainable development, including public health and well-being" (2012). The key content of the corporate social responsibility theory is that corporations must always find a way of stakeholders' constant interaction (Kuldeep and Madhvendra 2021).

It is important to emphasize that social responsibility in the scientific literature is one of the basic human values, but it must be repeatedly developed in the instrumental values of everyday human behaviour as an employee, consumer, member of social groups (Kolot and Hrishnova 2012). Public accountability and legitimization of corporate activities are an important factor for institutional investors in making investment decisions (Ullah et al. 2019). It is worth agreeing that corporate social responsibility should take on a new direction in business thought and change from "social responsibility" to "social response" (Kuldeep and Madhvendra 2021).

A significant number of researchers accentuate the social importance of insurance for the safe development of agricultural entrepreneurship. In particular, the solution to the problem of minimizing agricultural risks is proposed to be implemented through the introduction of a targeted price insurance system, which will stabilize farmers' incomes in the occurrence of significant fluctuations in agricultural prices (Zhao et al. 2016). Lupenko sees the process of reforming agricultural insurance in the implementation of the roadmap, which provides for the following measures: the formation of a quality insurance system for agricultural producers with the expansion of their institutional components; the state program restoration of partial compensation of insurance premiums for agricultural producers; improving the requirements for insurers to join profile associations; introduction of underwriting; loss settlement and reinsurance under all standard programs with state support; improving the guarantee mechanism for insurers to fulfil their obligations to agricultural producers (2015). The feasibility substantiation of a state support of an effective system for agricultural insurance in the context of sustainable land use is presented in the works (Claassen et al. 2017).

Strengthening corporate social responsibility among insurance companies should be the basis for the formation and implementation of their development strategies, the targets of which are: increasing corporate reputation, trust from stakeholders (customers, employees, regulators, suppliers and investors); improving the risk management process; increase in insurance premiums, etc. All the above forms the basis of the insurer's competitiveness, which in the future will contribute to additional income (Okhrymenko and Hranchenko 2018).

Kavitha and Anuradha emphasize the many potential benefits of social responsibility for insurance and reinsurance companies, such as long-term profitability and business viability, through the formation of a competitive market environment and

society as a whole (2016). In the scientific literature it is customary to use the concept of “corporate social responsibility of the insurance business”, the essence of which is considered the insurer’s responsibility for their own actions, the consequences of their activities (insurance, investment, financial) to society (Kukurudz et al. 2017).

Thus, a review of scientific literature shows that corporate social responsibility is seen as one of the key dominants of success in organizing and conducting various businesses, including insurance. This led to the urgency of further research.

### **3 Purpose of the Study**

Therefore, given the global recognition of agricultural insurance as an effective tool for risk management and property protection of agricultural producers, it is determined that the purpose of this article is to scientifically substantiate the process of generating insurance relations in the agricultural sector by corporate social responsibility. To achieve this goal, it is necessary to implement the following tasks: to reflect the basic models of agricultural insurance in the world; to substantiate the interaction process of agricultural insurance stakeholders based on corporate social responsibility; to reflect the results of the conducted sociological survey and present their scientific argumentation; formulate proposals focused on the inclusive development of insurance relations in the agricultural sector.

### **4 Methodology**

The insurance business in the agricultural sector in essence combines a unique form of probable risks distribution with the simultaneous formation of responsible management decisions, and relatively effective counteraction to the real and potential dangers facing the agrarian sector of the economy. Organizational principles of insurance relations are based on certain principles (actuarial balance, motivation for insurance, voluntarism, accessibility, subsidiarity, etc.), compliance with which creates opportunities for reality (reliability), completeness and accessibility of insurance protection. Modern agribusiness insurance in Ukraine is at the stage of its transformation and search for optimal approaches, forms and methods to consolidate social responsibility among all interested market stakeholders.

The presented research reflects the results of a two-stage survey among key participants in the insurance process. The target audience at the first stage of the survey was representatives of 250 companies (Zhytomyr, Kyiv and Khmelnytsky regions of Ukraine). On the second stage—40 insurance companies. The term is April–May 2021. The section scientific expediency of the public opinion is related to the study of prospects and substantiation of the necessity for further development of insurance agribusiness in Ukraine based on social responsibility.

Using non-continuous observation data, a sample population method was used (Shpychak et al. 2001). Within the framework of this methodology, the following statistical data were calculated: the number of general and sample population, the average value of the insured area per 1 agricultural enterprise, variance, marginal error for the insured area and the recommended minimum sample size. The main results of the results of estimating the minimum required sample size are reflected in Table 1.

The use of the above method in conducting a survey of insurance companies indicates the need to divide them into two groups. This is due to the fact that in accordance with the requirements for determining the average values, insurance companies, PJSC “IC “Ingo-Ukraine”, PJSC “IC “Universalna”, PJSC “IC “PZU-Ukraine”, PJSC “UPSK ASKA”, have significantly higher indicators of insured areas (from 140.5 thousand hectares to 203.6 thousand hectares) compared to others (PJSC “IC “Brokbizes”, PJSC “IC “AXA Stahuvannya”, PJSC “IC “Kraina”, TD “IC “Guardian”, PJSC “IC “Mega-Garant”) companies that provided services in the field of agricultural insurance in 2020–2021. Thus, the calculation of the recommended minimum sample size was carried out separately for large, medium and

**Table 1** Display of the results of estimating the minimum required sample size for agricultural enterprises of insurance companies

Indicators	Calculation methodology	Agricultural enterprise	Insurance companies	
			Large	Medium and small
The average value of the insured area on 1 agricultural enterprise and 1 insurance company, (thousand hectares)	$\bar{x}_\sigma = \frac{\sum xi}{n}$	13,7	177,79	36,2
Dispersion of the insured area, (thousand hectares)	$\sigma_{\sigma u\bar{6}}^2 = \frac{\sum xi^2 n}{\sum n} - \bar{x}^2$	552,15	591,20	75,84
The average error of the insured area, (thousand hectares)	$M_x = \sqrt{\frac{\sigma_{\sigma u\bar{6}}^2}{\sum n} (1 - \frac{\sum n}{N})}$	0,2	11,66	3,22
General population sample, units	-	15,346	50	251
The maximum error rate of the insured area, (thousand hectares)	$\varepsilon_x = M_x \times t$	0,4	23,32	6,44
The minimum required sample size, units	$n = \frac{t^2 \times \sigma_{\sigma u\bar{6}}^2 \times N}{t^2 \times \sigma_{\sigma u\bar{6}}^2 + \varepsilon_x^2 \times N}$	6	4	7

Source calculated by the authors based on a poll (2021)

small insurance companies (Table 1). It should be noted that the volume of the general population corresponds to the total number of insurance companies (251 units) that provided services in the field of property insurance. However, to ensure statistical reliability, the total population is divided between large (50 units) and medium and small (201 units). Therefore, the minimum recommended sample size is 11 insurance companies.

The main task of the survey was to study the public opinion of insurance services consumers and sellers, regarding their interest in concluding agrarian insurance contracts. After all, this financial instrument provides the necessary options for agricultural producers to avoid unforeseen costs in the case of an insured event. At the same time, insurance companies have an additional segment of the insurance market to capitalize on their operations.

Based on the results of a sociological survey and using scientific research methods, the theoretical and methodological justification of the balanced distribution of risks and responsibilities between the participants of agricultural insurance is formulated. The abstract-logical method allowed to systematize the interaction of insurance agribusiness stakeholders based on social responsibility. The method of systematic analysis was used to reflect the hierarchical sequence of culture and behaviour as a basis for balancing the financial, economic and moral, and ethical relations between stakeholders of the insurance market. The reflection of the financial inclusion components in the formation of corporate social responsibility of agricultural insurance market participants was due to the structural and functional method. In addition, the article uses mathematical and statistical methods for economic interpretation of the results of the survey. Visual representation of the studied processes and phenomena inherent in the participants of the insurance market is carried out using a graphical method.

## 5 Findings and Discussion

Agricultural insurance for the vast majority of countries is a universal, indispensable and effective mechanism for combating agricultural risks. The modern wisdom of forming an insurance business in the agricultural sector is the ability to diversify risks (using the tools of microinsurance, insurance and reinsurance). There are usually four basic models of agricultural insurance development in international practice, which operate based on: market competition, public-private partnership, mutual insurance companies and compulsory insurance. The advantages and disadvantages of these models are presented in Table 2.

The choice of one or another behaviour model of insurance market stakeholders depends on traditions, culture of relations in the insurance field, financial and economic capacity of entities to defend their own insurance interests, and so on. For Ukraine, a country with one of the most powerful export potentials of agricultural products, the problem of its preservation and increase based on the use of

**Table 2** Basic models of agricultural insurance development in the world

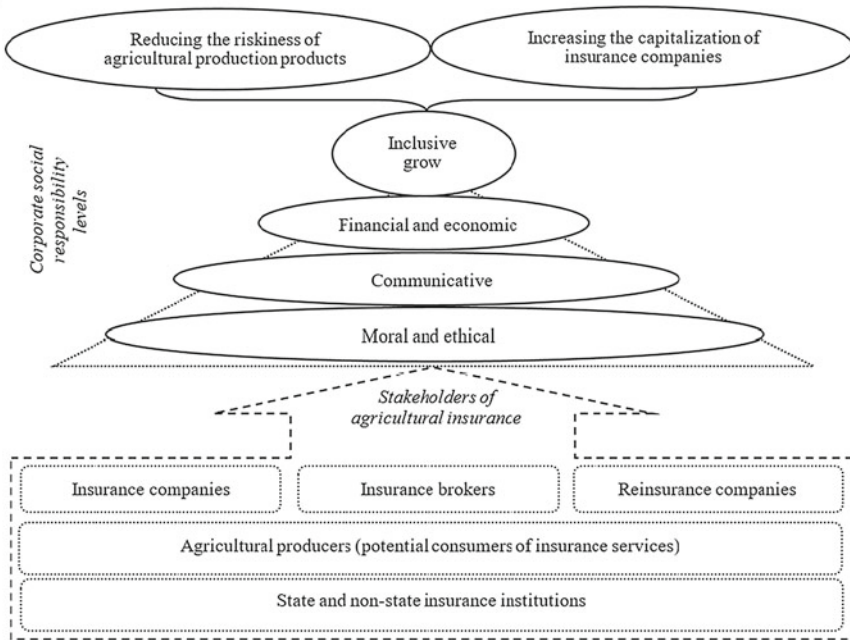
Countries	Development models agrarian insurance	Characteristics of the presented models	
		Advantages	Disadvantages
Argentina, Germany, Netherlands, New Zealand, Hungary and Sweden Austria, Brazil, Israel, Spain, Italy, Canada, Poland, Portugal, USA, Turkey, France, Switzerland	Market competition	Minimal government intervention in the field of agricultural insurance	Lack of state support
	Public-private partnership	Expanding the scope of insurance coverage of agricultural risks	Decreases the level of competition in the insurance market
Great Britain, Kazakhstan, USA, Japan	Insurance is carried out on a cooperative basis	Mutual assistance between members of non-profit insurance institutions	Insufficient level of capitalization
Greece, India, Iran, Cyprus, Philippines	Under full state control (compulsory insurance)	Continuous provision of insurance protection for agricultural producers	Significant influence of the state on the development of the insurance market

*Source* developed by the authors based on (Goodwin and Hungerford 2015; Prokopchuk et al. 2014; Yu 2018)

innovative world experience in the organization and conduct of agricultural insurance is of particular importance. The conceptual solution of the outlined problems requires the organization of creative management of insurance activity, based on four levels of corporate social responsibility, namely: moral and ethical, communicative, financial and economic, and inclusive (Fig. 1).

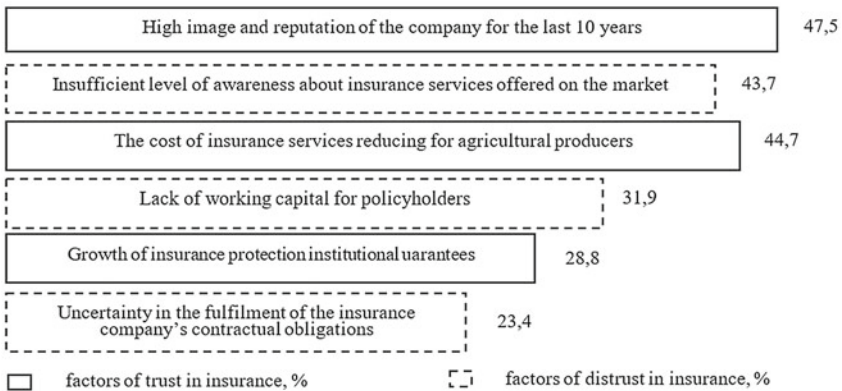
The innovative type of thinking requires stakeholders of the insurance process to comply with corporate social responsibility for the distribution of risks within the concluded agricultural insurance contracts. The main drivers of the insurance relations development in society on the basis of corporate social responsibility should be a high level of trust reproduction, the manifestation of insurance culture, information awareness and actuarial balance of insurance services consumers and sellers.

The basic element of business environment beginning and further functioning should be considered trust as a fundamental factor for the interaction of insurance business participants. Fukuyama views the content of the concept of trust as the expectation of some society members that other members will behave predictably, honestly and with attention to the needs of others in accordance with certain general norms (2004). The application of corporate social responsibility in practice is becoming increasingly important in companies that specialize in insurance services and position products based on trust (Šlahor and Barteková 2020). According to the results of a sociological survey, it was found that 12.5% of respondents expressed distrust in insurance as a tool to protect the property interests of farmers. Instead, 52.4% of respondents see an increase in confidence in insurance under certain conditions. The



**Fig. 1** Systematic interaction of agricultural insurance stakeholders based on corporate social responsibility. *Sources* developed by the authors

main reasons for distrusting or trust in risk insurance in the agricultural sector are shown in Fig. 2.



**Fig. 2** Expert assessment results of the importance of distrusting factors and trust in insurance among agricultural producers. *Sources* formed by the authors based on the results of a sociological survey

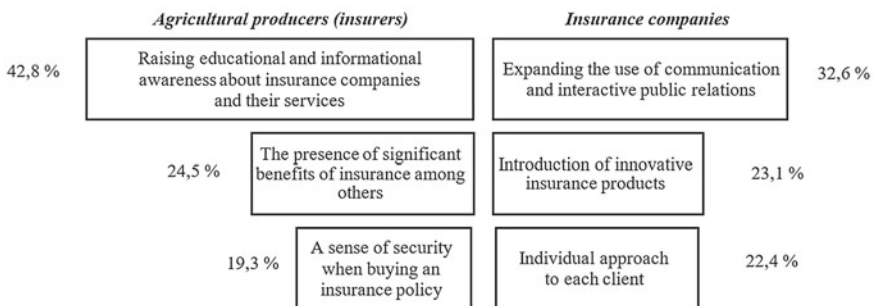
The analysis of the results of the conducted sociological survey gives grounds to state the following. In the medium term, the strategic task for market stakeholders is to build a trajectory of trust in insurance companies. The implementation of the outlined task is to position their professional activities as reliable business partners in terms of risk sharing and responsibility, using the insurance mechanism.

Significant reserves for reducing the cost of insurance services in the agricultural sector are their diversification. Currently, in world practice, agricultural insurance services are positioned in the market in terms of three insurance programs, namely: classic (USA, Canada, most of the EU), index (North and South America, Africa) and those aimed at protecting farmers’ incomes (Canada, USA, Sweden, Japan). Ramsey emphasizes the possibilities of further expanding harvest insurance programs in the framework of the Common Agricultural Policy in the EU (2017).

Index insurance should become the driver of further development of agricultural insurance in Ukraine. This insurance product is designed mainly to take into account the insurance interests of farmers (including family type). The key advantages of using index insurance products (compared to classic types of insurance) are the relatively low cost of services, standardized mechanism for providing insurance protection and simplifies the process of detecting the occurrence of an insured event, and hence compensation payments under agricultural insurance contracts.

Potential consumers of services see the growth of trust in insurance companies in the increased institutional guarantees of their insurance protection. Such protection provides comprehensive support for agricultural insurance contracts. Starting with the provision of underwriting services (identification, assessment and forecasting of the insurance risks probability) and ending with the timely payment of compensation in the case of an insured event.

Adherence to the moral and ethical principles of the insurance business introduction involves the formation of an appropriate level of its participants’ insurance culture. This position is shared by the vast majority of respondents who took part in the survey (Fig. 3). The content of the insurance culture concept is a systematic



**Fig. 3** Results of expert assessment of market stakeholders’ interest regarding the formation of insurance culture. Sources formed by the authors based on the results of a sociological survey

combination of educational, informational and financial and economic awareness of stakeholders on the distribution of risks, using the insurance mechanism.

Scientific interpretation of the expert opinions of market stakeholders gives grounds to assert their awareness of the role and importance of insurance culture for the mutually agreed activities of insurance entities. Promoting the cultural space of agricultural insurance will help to solve two interrelated problems of its functioning. First, for policyholders it is an opportunity to choose the best insurance option, given the potential risks. Secondly, for companies—the provision of high quality insurance services, ensuring their own image and reputation in the market. Thus, the manifestation of a high level of insurance culture by market participants is one of the key signs of their ability to share social responsibility for the risks distributed in space and time.

For the formation of the mechanism of agricultural risk insurance based on corporate social responsibility, it is important to choose the forms and channels through which the exchange of information between market stakeholders will take place. The communication activity of the insurance company is focused, first, on the organization of effective social interaction between the participants of the insurance market on the development, positioning and implementation of relevant services to potential policyholders. The assessment of the level of communication between the stakeholders of the insurance market was carried out based on the results of a survey (Table 3).

The presented results of the sociological survey indicate the need for insurance companies to intensify communication links with various market stakeholders. It is necessary to interact with potential consumers of insurance services, as well as with governmental and non-governmental institutions to ensure effective counteraction to natural and anthropogenic risks in agriculture. The corporate social responsibility of the insurer's information activity will achieve the set goals under certain conditions.

First, the consistent implementation of a set of underwriting measures aimed at identifying, assessing and forecasting the occurrence of probable risks with the

**Table 3** Factors hindering the development of communication links between key stakeholders of the insurance market

Agricultural producers (insurers)		Insurance companies	
Restraining development factors	%	Restraining development factors	%
Insufficient level of communication with insurers	55,3	Unformed registers of emergency events in agriculture for the last 10–15 years	47,1
Limited information about insurers and their maintenance	34,2	Difficult predictability of climate changes in the medium term	15,1
Limited public information about the level of insurance claims	27,5	Insufficient interaction between state and non-state institutions in the field of agricultural insurance	10,8

Sources formed by the authors based on the results of a sociological survey



subsequent use of insurance and reinsurance mechanisms. The information partners of insurance companies should be: the Ministry of Agrarian Policy and Food of Ukraine, the State Service of Ukraine for Emergencies, hydro-meteorological centres, etc. The communication interaction of these institutions is appropriate from the standpoint of the information resources formation needed to make management decisions in the field of agricultural risk insurance.

Secondly, the modern development of insurance relations in rural areas should be based on the concept of marketing. Its implementation involves the implementation of interrelated measures aimed at the development, promotion and positioning in sufficient quantities and high quality of classic and index insurance products. Increasing the business and investment attractiveness of participants in the agricultural insurance market requires the use of modern communication technologies (advertising, sales promotion, public relations, merchandising, etc.). In addition, the introduction of innovative technologies, in particular: P2P insurance, insurance telematics and aggregators of insurance services and offers are becoming increasingly important. In general, it should be noted that Internet insurance plays an important role as an innovative form of virtual communication that increases the efficiency of insurance companies (Yanyshyn et al. 2019).

Third, the logical continuation of the marketing chain is to stimulate the process of providing services through a variety of sales channels (traditional sales, "Internet" sales, the derivatives market, etc.), according to consumer preferences; creating a positive image and high reputation of the company among its customers; providing feedback to potential users of services and determining their attitude to insurers. The sales activity of insurance companies largely depends on their communication competence and ability to convey to potential customers the necessary amount of information on insurance protection.

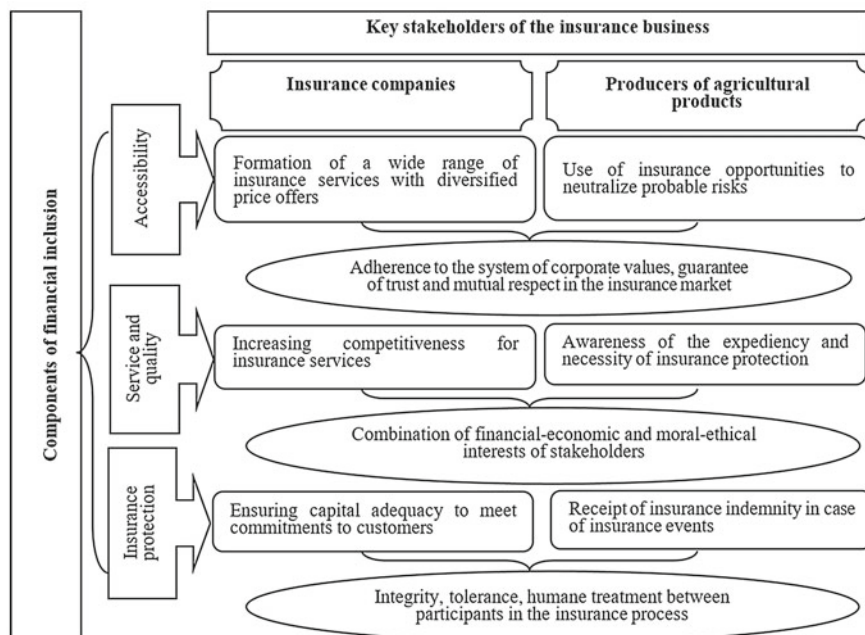
The balanced development of insurance relations in the agricultural sector requires companies to achieve financial and economic parity between the commitments and the ability to fulfil them, taking into account the probability of agricultural risks (Table 4). It is, first of all, about ensuring the long-term financial capacity of insurance companies, which is usually achieved through their own sources of coverage (formed authorized capital, technical reserves, guarantee funds, etc.) and an extensive system of agricultural risks reinsurance. Instead, when transferring risks to insurance, farmers are interested in the reliability of their property protection with appropriate financial guarantees from companies in obtaining insurance compensation in the event of an insured event.

The scientific value of the conducted sociological survey lies in the reflection of expert opinions of key market stakeholders on the choice of options for solving current problems and prospects for the development of agribusiness insurance in Ukraine. Interpretation of the survey results gives grounds to assert the expediency of forming new quality of insurance relations in the agricultural sector, based on inclusive growth. The system-forming components of financial inclusion for stakeholders of insurance agribusiness are the availability, service and quality and reliability of insurance protection (Fig. 4).

**Table 4** Financial and economic factors influencing the decision to insure

Agricultural producers (insurers)	%	Insurance companies	%
Reducing the cost of insurance services	51,2	Increasing the effective demand of farmers for insurance services	62,9
Subsidizing part of the cost of insurance payments to farmers	44,7	Possession of modern methods of identification and potential agricultural risks assessment	34,0
Increasing legal guarantees for the protection of their property interests in the insurance process	23,4	Improving regulatory and legal support	24,1
Expanding the range of insurance services	18,4	Formation of innovative infrastructure of the insurance market	20,3
Improving the quality and service of insurance services	15,7	Development of public-private partnership in the field of agricultural risk insurance	18,9

Sources formed by the authors based on the results of a sociological survey



**Fig. 4** Components of financial inclusion in the formation of corporate social responsibility of agricultural insurance stakeholders. Sources developed by the authors

The implementation of these components in the insurance activities of key market stakeholders will contribute to the growth of their corporate social responsibility and balance of existing insurance interests in the medium and long term. Strategic guidelines for inclusive growth should be broad insurance coverage of agricultural risks, as well as a gradual increase in the financial and economic capacity of companies in agricultural insurance services. Achieving the outlined benchmarks involves taking the following measures:

1. Strengthening corporate social responsibility in terms of individual business processes of the insurance company. Determining criteria for the success of management decisions in the activities of the insurer should determine the customer focus, ensuring competitive advantage in insurance services and manufacturability of business processes. Compliance with the professional activities of insurance companies to these criteria increases the creativity of their strategic and tactical decisions in the agricultural insurance market. Instead, potential policyholders are faced with the task of improving their financial literacy. Its main content is the ability of agricultural producers to choose the optimal option of insurance protection, taking into account the structure, scale and probability of natural, anthropogenic and other risks in the agricultural sector.
2. Stimulating supply and demand for insurance services. Since July 2021, the process of circulation of agricultural lands has been launched in Ukraine (2020). The acquisition of land ownership will motivate producers to invest financial resources in their own insurance protection. At the same time, insurance companies face the task of positioning a competitive range of insurance services in the market. Their diversity provides for the possibility of primary (microinsurance and insurance) and secondary (reinsurance) risk allocation. Such measures will allow to expand the insurance coverage of various risks, and thus, will increase the capitalization of insurance companies.
3. Formation of agricultural producers' loyalty to insurance in general and to the activities of insurance companies in particular. The solution of the outlined problem in the context of increasing the corporate social responsibility of insurers is based on the consistent consideration of three groups of factors. The first group is aimed at ensuring ethical responsibility, which is based primarily on maximum integrity (trust) between the participants in the insurance process and an acceptable level of customer satisfaction with insurance services. The second group is focused on the reproduction of socio-economic responsibility, i.e., expanding the availability and price flexibility of insurance services, maximum protection of the rights of insurance services consumers and financial reliability of insurance companies. The third group is related to the implementation of institutional responsibility. Its essence lies in the consistent observance and implementation of current legislation, the development of modern infrastructure of the agricultural insurance market and the diversification of services for property and personal insurance.
4. Diversification of organizational and legal bases of insurance companies in Ukraine. Until now, these financial institutions are mostly created in the form of

joint stock companies. This somewhat narrows the opportunities for balancing the financial and economic interests of agricultural insurance entities. In many countries of the world (USA, Canada, Spain, Italy, Japan, etc.) insurance institutions usually carry out professional activities on a commercial and mutual (non-commercial) basis. The formation of insurance relations on a cooperative basis is based on the principle of mutual assistance. The essence of this principle is to grant the right to each member of the mutual company to receive a certain amount of insurance indemnity (regardless of the amount of insurance payment) in the case of an insured event, but subject to financial obligations to the cooperative (regular payment of insurance premiums). In addition to mutual assistance, potential participants in non-profit insurance institutions receive the following benefits: high reliability of insurance protection, as insurers and policyholders act in one person, positioning a wide range of insurance services, taking into account individual needs of each entity, access of each participant (member) insurance institution, etc.

5. Use of public–private partnership (PPP) in the field of agricultural insurance. State participation (through the mechanism of subsidizing insurance payments or benefits) in the distribution of risks and responsibilities in the market significantly increases its investment attractiveness for key stakeholders in the insurance process. In particular, for potential policyholders, the provision of state subsidies to finance part of the cost of insurance payments is considered by them as a strong argument for concluding agricultural insurance contracts. At the same time, companies get additional opportunities to accumulate payments for services provided and expand insurance coverage of agricultural risks.

The systematic implementation of certain measures should ensure the consistent formation of common values between stakeholders of agricultural insurance. The content of the outlined values should be interpreted as the unity of intellectual, economic, organizational and financial resources aimed at timely and effective counteraction to risks of natural and anthropogenic origin. The expected results from the value-oriented activity are seen in the high self-awareness and social responsibility of the participants of the insurance agribusiness for the distribution of agricultural risks in space and time.

## 6 Conclusion

The research provided a basis for arguing scientifically sound conclusions. Comprehensive development of insurance relations in the agricultural sector should be based on the principles of corporate social responsibility. According to a survey, it was found that the vast majority of stakeholders are interested in growing business activity in the insurance market. Instead, the participants in the insurance process expressed a common position on the feasibility of balancing their moral and ethical, educational and informational, financial and economic interests. The implementation of

the above measures is possible only in the presence of close integration of individual and collective social responsibility of stakeholders in the conclusion, operation and implementation of the terms of agricultural insurance contracts.

Ensuring its inclusive growth is recognized as an important driver of further modernization of the insurance agribusiness in Ukraine. The key arguments and counterarguments should be recognized as a systematic strengthening of corporate social responsibility of insurance companies to expand access (in terms of: range, price, and terms of insurance) to insurance services, improve the quality and service of insurance services, and ensure reliability and timeliness of insurance protection in case of an insurance event. Taking the outlined measures will help to neutralize the negative impact of various risks on the process of agricultural production, and thus its promotion at the regional, national and global levels.

## References









- Bowen, H.R.: *Social Responsibilities of the Businessman*. Harper and Brothers, New York (1953)
- Claassen, R., Langpap, C., Wu, J.: Impacts of federal crop insurance on land use and environmental quality. *Am. J. Agric. Econ.* **99**(3), 592–613 (2017)
- Di Falco, S., Adinolfi, F., Bozzola, M., Capitanio, F.: Crop insurance as a strategy for adapting to climate change. *J. Agric. Econ.* **65**(2), 485–504 (2014)
- Eze, E., Girma, A., Zenebe, A., Zenebe, G.: Feasible crop insurance indexes for drought risk management in Northern Ethiopia. *Int. J. Disaster Risk Reduct.* **47**, 2–29 (2020)
- Forum Odpowiedzialnego Biznesu PN-ISO 26000: Encyklopedia CSR (2012). <http://odpowiedzialnybiznes.pl/hasla-encyklopedii/iso-26-000/>
- Fukuyama, F.: *Doveriye: sotsialnyye dobrodeteli i put k protsvetaniyu* [Trust: social virtues and the path to prosperity]. Izdatelstvo ACT, Moskva (2004). (in Russian)
- Goodwin, B., Hungerford, A.: Copula-based models of systemic risk in U.S. agriculture: implications for crop insurance and reinsurance contracts. *Am. J. Agric. Econ.* **97**(3), 879–896 (2015)
- Hrshnova, O., Mishchuk, I.Iu., Oliinyk, O.O.: *Sotsialna vidpovidalnist u trudovykh vidnosynakh: teoriia, praktyka, rehuliuвання ryzykiv* [Social responsibility in labor relations: theory, practice, risk regulation]. NUVHP, Rivne (2014). (in Ukrainian)
- IPCC: *Special report on Climate Change and Land* (2021). <https://www.ipcc.ch/srcc1/chapter/reports>
- Jamali, D., Mirshak, R.: Corporate social responsibility (CSR): theory and practice in a developing country context. *J. Bus. Ethics* **72**(3), 243–262 (2007)
- Kavitha, N.V., Anuradha, T.: Corporate social responsibility in insurance sector in India. *Int. J. Innov. Res. Dev.* **5**(2), 137–143 (2016)
- Khovrak, I.: Odpowiedzialność społeczna jako strategia przywództwa przedsiębiorstwa na rynku. *Zarządzanie Publiczne* **3**(39), 391–401 (2017)
- Kolot, A.M., Hrshnova, O.A.: *Sotsialna vidpovidalnist teoriia i praktyka rozvytku* [Social responsibility: theory and practice of development]. KNEU, Kyiv (2012). (in Ukrainian)
- Kukurudz, O.M., Maltseva, V.V., Trynchuk, V.V.: *Instrumenty realizatsii sotsialnoi vidpovidalnosti strakhovoho biznesu* [Tools for implementing corporate social responsibility of the insurance business]. *Financ. Serv.* **4**, 17–19 (2017). (in Ukrainian)
- Kuldeep, S., Madhvendra, M.: The evolving path of CSR: toward business and society relationship. *J. Econ. Adm. Sci.* (2021). <https://doi.org/10.1108/JEAS-04-2020-0052>

- Lupenko, Yu.O.: Rozvytok ahrarnoho sektoru ekonomiky Ukrainy: prohnozy ta perspektyvy [Development of the agricultural sector of the Ukrainian economy: forecasts and prospects]. *Sci. Bull. Mukachevo State Univ. Ser. Econ.* **2**(4), 30–34 (2015). (in Ukrainian)
- Natsionalnyi bank Ukrainy: Stratehiia rozvytku finansovoho sektoru Ukrainy do 2025 roku [Strategy for the development of the financial sector of Ukraine until 2025] (2021). (in Ukrainian). <https://www.kmu.gov.ua/news/regulyatori-finansovogo-rinku-zatverdili-strategiyu-rozvitku-finansovogo-sektoru-ukrayini-do-2025-roku>
- Okhrymenko, O.O., Hranchenko, E.E.: Sotsialna vidpovidalnist strakhovoho biznesu yak instrument mizhnarodnoi konkurentospromozhnosti [Social responsibility of the insurance business as an instrument of international competitiveness]. *Bull. Mukachevo State Univ.* **15**, 616–625 (2018). (in Ukrainian)
- Prokopchuk, O., Ulyanich, Y.U., Bechko, V.: Features of agricultural risk insurance in foreign countries. *Curr. Econ. Probl.* **3**(153), 46–53 (2014)
- Ramsey, A., Santeramo, F.: Crop Insurance in the EU: Lesson and Caution from the US. *EuroChoices* **16**(3), 34–39 (2017)
- Reyesf, J., Eliasa, E., Haackerb, E., Kremenc, A., Parkerd, L., Rottler, C.: Assessing agricultural risk management using historic crop insurance loss data over the ogallala aquifer. *Agric. Water Manag.* **232**, 106000 (2020)
- Reznik, N.P., Demyan, Ya.Yu., Tokar, Ya.I., Gupta, S.K., Ostapchuk, A.D.: Mechanism of investment maintenance for the sustainable development of the agricultural sphere. *Int. J. Innov. Technol. Explor. Eng.* **8**(11S), 112–116 (2019). ISSN: 2278-3075
- Reznik, N.P., Gupta, S.K., Sakovska, O.M., Ostapchuk, A.D., Levkina, R.V.: Ukrainian world exchange market of oilseeds: a research of challenges for growth. *Int. J. Eng. Adv. Technol.* **8**(6), 3823–3829 (2019). ISSN: 2249-6958
- Shashi, K., Umesh, K.: Crop insurance-strategy to minimize risk in agriculture. Selected paper prepared for presentation at the International Association of Agricultural Economists (IAAE) Triennial Conference, Foz do Iguacu, Brazil (2012)
- Shpychak, O.M., Sabluk, P.T., Sytnyk, V.P.: Osobysti pidsozni hospodarstva Ukrainy - analiz vytrat ta efektyvnosti vyrobnytstva vydiv silskohospodarskoï produktsii [Personal subsidiary farms of Ukraine - analysis of costs and efficiency of production of agricultural products]. IAE, Kyiv (2001). (in Ukrainian)
- Šlahor, L., Barteková, M.: Corporate social responsibility in Slovak insurance and reinsurance companies – is it a significant factor in their business? Education excellence and innovation management through vision 2020: from regional development sustainability to global economic growth. In: Proceedings of the 29th International Business Information Management Association Conference, Vienna, Austria, pp. 1603–1614 (2017)
- Ullah, Md.S., Muttakin, M., Khan, A.: Corporate governance and corporate social responsibility disclosures in insurance companies. *Int. J. Account. Inf. Manag.* **27**(2), 284–300 (2019)
- United States Department of Agriculture Risk Management Agency: Crop Insurance Handbook, Washington (2014)
- Verkhovna Rada Ukrainy: Pro vnesennia zmin do deiakykh zakonodavchykh aktiv Ukrainy shchodo umov obihu zemel silskohospodarskoho pryznachennia: zakon Ukrainy vid 31.03.2020 r. № 552-20 [Law of Ukraine on Amendments to Certain Legislative Acts of Ukraine Concerning the Conditions of Circulation of Agricultural Lands of 31.03.2020 № 552-IX] (2020). (in Ukrainian). <https://zakon.rada.gov.ua/laws/show/552-20#Text>
- Wagner, A.: Der Staat und das Versicherungswesen: socialökonomische und socialrechtliche Studie. H. Laupp, Tübingen (1881)
- Yadav, R., Jain, R., Singh, S.: An overview of Corporate Social Responsibility (CSR) in insurance sector with special reference to Reliance Life Insurance. *World Sci. News* **45**(2), 196–223 (2016)
- Yanyshyn, Y., Bryk, H., Kashuba, Y.: Problems and perspectives of internet – insurance in Ukraine. *Mark. Manag. Innov.* **4**, 31–38 (2019)
- Yu, J.: Effects of subsidized crop insurance on crop choices. *Agric. Econ.* **49**(4), 533–545 (2018)

- Zhao, L., Mu, Y., Song, B., Zhang, Q.: Market equilibrium of the agricultural product target price insurance and its moral hazard premium. *Agric. Econ.* **62**, 215–224 (2016)
- Zinchuk, T.O.: Na pochatku poshuku stratehii inkluzyvnoho zrostantia silskoi ekonomiky: svitoyi ta yevropeyskyi pidkhid [At the beginning of the search for a strategy for inclusive growth of the rural economy]. *Bull. Sumy Natl. Univ. Agric. Univ. Ser. Econ. Manag.* **4(68)**, 132–137 (2016). (in Ukrainian)

# The Application of Planned Behavior Theory to the Adoption of Food Bank Program Among University Students



Nurul Hafizah Mohd Yasin , Nur Haiza Nordin , Nur Naddia Nordin ,  
Nik Noorhazila Nik Mud , Siti Zamanira Mat Zaib ,  
Fadhilhanim Aryani Abdullah , Nur Dalila Mat Yusoff ,  
and Nurul Fardila Abdul Razak 

**Abstract** College meal plan for students is often too expensive, especially for low-income students. To overcome this problem, providing a food bank significant to help food insecurity among students in campus; hence, universities have come up with a food bank program to alleviate student hunger. This study aims to examine the influence of attitudes, subjective norm, and perceive behavior control on the adoption of food bank program at universities. The research population includes Malaysian public university students. The study employed an online survey instrument and received 380 responses from university students. For data analysis, the partial least square (PLS) was utilized by analysing the data using SmartPLS version 3.3 and the findings revealed that the data supported all of the direct relationships. This study adds to the body of knowledge in relation to the influence of attitudes, subjective norm, and perceived behavior control on the adoption of the food bank program. Therefore, universities are anticipated to become a catalyst that improves the attitudes, subjective norm, as well as perceived behavioral control towards the adoption of food bank program to help ease student hunger.

**Keywords** Food bank · University student · Planned behavior theory · Attitudes · Subjective norm · Perceive behavior control

## 1 Introduction

Nowadays, the concept of food bank (FB) has spread around the globe. FB acts as social public assistance that gathers and distributes extra food that is donated by manufacturers, farmers, or retailers and distribute it to the people who have no financial means to purchase the food. The FB program makes a major contribution to the resolution of food loss problems, the food availability for people with low

---

N. H. M. Yasin (✉) · N. D. M. Yusoff · N. F. A. Razak  
Faculty of Hospitality, Tourism & Wellness, Universiti Malaysia Kelantan, Kota Bharu, Malaysia  
e-mail: [hafizah.my@umk.edu.my](mailto:hafizah.my@umk.edu.my)

N. H. Nordin · N. N. Nordin · N. N. N. Mud · S. Z. M. Zaib · F. A. Abdullah  
Faculty of Entrepreneurship and Business, Universiti Malaysia Kelantan, Kota Bharu, Malaysia



income, including environmental degradation as a result of food waste. According to Mejia et al. (2015), FBs (above 500) that operate in more than 30 countries (Global Food Banking Network 2013), they found that the countries have served beyond 20 million people across the globe.

Due to scarce financial resources, students at higher institutions are facing food insecurity due to the increase in tuition fees, housing rental costs, and food price. The increased living standards and price of goods and the increasing issues of diet-related health are one of the factors that influence food insecurity among university students (Yasin et al. 2019). Besides, college meal plan for students is often too expensive, especially for low-income students. As such, some university students are doing part-time jobs to gain extra income in order to spend money on food and other things. Thus, to overcome this problem, providing a food bank is significant to help food insecurity. As such, college and universities around the world have taken the initiative to open food pantries in an effort to alleviate student hunger.

The introduction and existence of programs such as food bank at public universities may help students from the low-income group or B40 by providing them food. This program is very helpful for those in need, especially students with financial constraints. The food bank is also the best initiative for university students, considering that some of them may have to find part-time jobs during their studies to fulfill their daily needs such as food expenses. However, since student life often comes with a limited time, some of the students are unable to locate their time for any part-time work. Thus, the food bank program will help the students acquire food for their daily need. Among the successful milestones achieved by the food bank program is Food Bank Malaysia, which was launched in August 2019 and had benefited about 45,850 households. The higher institutions saw this as one of the initiatives to help their students acquire food. Thus, public universities such as University Malaya, Universiti Teknologi Mara (UiTM) Permatang Pauh, Universiti Teknologi Malaysia (UTM) Skudai, Universiti Sultan Zainal Abidin (UniSZA), Universiti Putra Malaysia (UPM) Serdang, and Universiti Malaysia Kelantan (UMK) are among the public universities that have implemented this program.

Therefore, the current study aims to investigate this issue further. The general scope of the study is to focus on the application of Ajzen's (1991) theory of planned behaviour (TPB) toward the adoption of food bank program among university students. According to Ajzen (2011), the theory of planned behavior is an essential model that can be used to predict human social behavior. The TPB model indicates that intention is significantly influenced by three main constructs of attitudes, subjective norm, and perceived behavioral intention in which when the intention is stronger, an individual is more likely to perform the behavior (Ajzen 1988). Therefore, this study further aims to extend the exploration of the theory of planned behavior by investigating the influence of attitudes, subjective norm, as well as perceived behavioral control on the adoption of food bank program among university students.

The next part of this study covers the hypothesis and related concepts and research framework. Then, it includes the research method, followed by the empirical results and discussion of the research findings. Finally, the paper concludes with the research implication, limitation and recommendation for future research.

## 2 Hypothesis and Related Concepts

### 2.1 *Theory of Planned Behaviour*

According to Jaffar and Musa (2014), the Theory of Planned Behavior is one of the most influential and common frameworks in studies on behavior prediction from the attitude variable. The Theory of Planned Behaviour is made up of three constituents: a) behavioral attitude, b) subjective norm, and c) perceived behavioral influence that connect beliefs and actions (Yunos et al. 2014). As outlined in the TPB, the three types of beliefs influencing human behavior are the beliefs regarding the potential effects of behavior (behavioral beliefs), the perceptions of others (normative beliefs), as well as the influences that ease or obstruct a behavior (control beliefs). Behavioral beliefs establish positive or negative behavioral attitudes, while normative beliefs may cause perceived subjective norm or social pressure and perceived behavioral influence is created by control beliefs (Fishbein and Ajzen 1985). ATT, SN, and PBC altogether contribute to the development of a behavioral goal that is referred to as the immediate behavioral antecedent (Ajzen 2012).

### 2.2 *The Influence of Attitudes on the Adoption of the Food Bank Program*

Attitudes refer to the extent to which an individual positively or negatively evaluates a behavior, while the subjective norm is the degree to which an individual perceives the importance of behavior's execution or not execution including the individual's motivation to perform what is deemed important, which denotes the individual's extent of perceived easiness or difficulty in conducting the behavior. Studies have previously revealed that attitudes have a direct relationship with the perceptions of food insecurity among college students (Afendi et al. 2014). Phillips et al. (2018) study also contributes to the dialogue about the rising and changing role of student affairs in addressing food insecurity among college students as the help that students need. Specifically, the shift refers to the need for food among students that they may not procure elsewhere. Researchers are also beginning to recognize that food insecurity such as missing classes and not buying textbooks is critical for academic disruptions (Dubick et al. 2016). Food bank is mainly related to whether people deem it a significant problem, thereby attempting to minimize such an issue. This seems to be one of the strongest determinants in the sense of the TPB as described in the literature (Graham-Rowe et al. 2014). Accordingly, the first hypothesis is proposed as follows:

H1: There is a positive association between attitudes and the adoption of the food bank program.

### ***2.3 The Influence of Perceived Behavioral Control on the Adoption of the Food Bank Program***

As stated by Ajzen (1991), perceived regulation of behavior is determined by a person's beliefs about the power of situational and internal factors to promote behavioral success. This also applies to the idea that the conduct of interest is simple or difficult to execute (Ajzen 1991). Perceived behavioral control has implications for circumstances such as the behavior of students who do not have enough resources to purchase food, including budgetary pressures and other variables. This reasoning serves as the basis for the development of the second hypothesis as follows:

H2: There is a positive association between perceived behavioral control and the adoption of the food bank program.

### ***2.4 The Influence of Subjective Norm on the Adoption of the Food Bank Program***

The social norm is a subjective norm that is meant to quantify social pressures such as the perceptions of family members and friends on the actions of an individual. Subjective norm refers to the views that individuals deem important, particularly those who advise others regarding whether or not to perform certain behaviors or motivation, along with one's willingness to perform or not to perform what was deemed important (Wedayanti and Giantari 2016). The greater the mood, the greater the goal will be, which will be reflected in the actions and vice versa (Ajzen 2012). In this study, students who are dealing with food insecurity stem from issues such as low family income, lack of financial resources, high tuition and/or living costs, or personal emergencies (Cady 2016). As such, subjective norm refers to the social pressure that students experience while using the food bank program on their campus. Hence, this study formulates the following hypothesis:

H3: There is a positive association between subjective norm and the adoption of the food bank program.

### ***2.5 Research Framework***

To overcome the previous limitations, a research framework has been developed by examining the development of hypotheses in relation to several relevant concepts (Fig. 1).

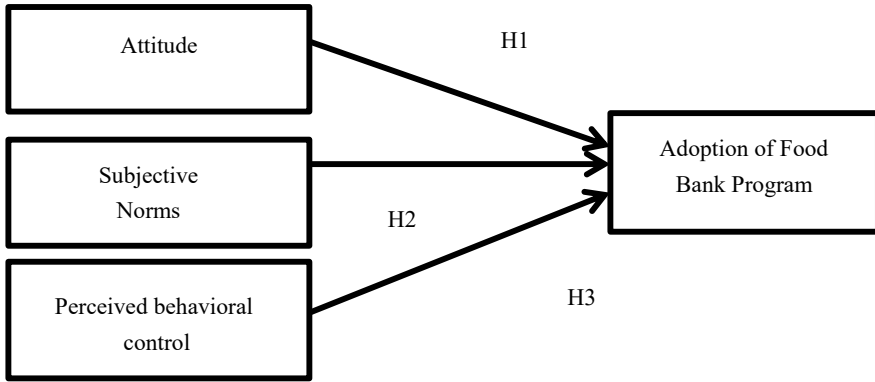


Fig. 1 Research framework

### 3 Research Method

The public university students in Malaysia are the unit of analysis in this study and the current study used a convenience sampling method to select the participants. According to Kumar et al. (2013), convenience sampling is a process that involves collecting data from a particular population that the researcher can easily access. Generally, a non-probability technique is suitable in examining the theoretical influence grounded research by a conceptual framework (Hulland et al. 2018). Therefore, this study employed this method because it matches the research context.

The data collection was conducted using an online survey; however, to lessen the probable risk of poor return rate, the researcher decided to call on the public university students in Malaysia online to help the researcher distribute the questionnaires to the potential respondents. Besides, to minimize common method variance (CMV), a few procedural remedies were also implemented. Firstly, a description of the research project was written in the questionnaire to outline the purpose and significance of the study to the community. Additionally, the respondents were given written instructions and assured that all responses and personal details would be treated with the utmost confidentiality. Besides, their participation in the study was entirely voluntary and they were also encouraged to answer all questions honestly since the questions do not specify any right or wrong answers. Based on Mackenzie et al.'s (2016) suggestion, distinct anchor scales were used to analyse the variables through a five-point Likert scale.

An analysis using Green's (1991) table was carried out before collecting the data in order to identify the minimum sample size needed to sufficiently accomplish statistical power for explaining the relationships within the model (Hair et al. 2017). Research finding shows minimum sample size of 76 required for this study for the three predictors, with a medium effect size of 0.15 at a 0.05 confidence level. Thus, the data were deemed sufficient for the research model based on the 331 responses received.

## 4 Results and Discussion

### 4.1 Respondent's Profile

The respondents' demographic background comprising 331 undergraduate students from local universities throughout Malaysia is shown in Table 1. The respondents consist of 49 (14.7%) male and 282 (85.2%) female undergraduate students. The majority of the respondents are come from low-income households (below RM3,000) with 68%.

To analyze the data, the SmartPLS version 3.2.8 software was applied to experiment on complex models that involve latent variables. This software is suitable to be used as a tool because it can better explain the underlying constructs including their relationships. SmartPLS is also appropriate for the data that did not meet the normality distribution.

In line with Hair et al.'s (2017) recommendation, a normality test has been carried out before examining the measurement model. The WebPower software was also used to calculate multivariate skewness and kurtosis and the results revealed both Mardia's multivariate skewness ( $\beta = 10.308$ ,  $p < 0.01$ ) and multivariate kurtosis ( $\beta = 97.402$ ,  $p < 0.01$ ). This indicates the non-normality encompassed within the data including its significant application for regression analysis via Smart PLS.

Since this analysis applied single-source data through a simultaneous collection of the dependent and independent variables from the same person, this study renders CMV a potential issue (Mackenzie et al. 2016). Hence, a statistical approach was applied to solve this issue. According to Podsakoff et al. (2003), CMV is troublesome if the bulk of the explained variation is found in a single latent factor. It has also been reported that CMV is a concern if more than 50% of the total variance is clarified by the first factor (Fuller et al. 2016). Therefore, to determine the degree of the bias, the

**Table 1** Demographic profile

	Demographic		Frequency	Percent
1	Gender	Male	49	14.7
		Female	282	85.2
2	Student status	Have parents	272	82.2
		Have only mother/father	58	17.5
		Orphan	0	0
3	Family income	Below RM1000	113	34.1
		RM1001–RM2000	113	34.1
		RM2001–RM3000	47	14.2
		RM3001–RM4000	19	5.7
		RM4001–RM5000	12	3.6
		RM5000 and above	27	8.2

Harman single factor test was carried out as per Hair et al.'s (2017) suggestion. The unrotated factor analysis further revealed that 27.33% of the balance was carried out by the first factor. Therefore, CMV of current research is not an issue.

### 4.2 Measurement Model Assessment

Anderson and Gerbing's (1988) approach called the two-step approach was introduced in this study, which evaluates the calculation model and the structural model. Firstly, the associations between the items and constructs were measured based on the measurement model. Secondly, the association between the independent and dependent variables was measured in the structural model. The convergent and discriminant validity conditions must also be met in the measurement model. Table 2 depicts the measurement model of this study.

Convergent validity is used to measure the extent of consensus between various item measuring the same concept. Firstly, to determine the convergent validity of each construct in the measurement model, the study tested the loading values as well as composite reliability (CR) and average variance defined (AVE). According to Hair et al. (2017), to ensure the presence of convergent validity in the model, the loading and AVE values should be greater than 0.5 and the CR value should be at least 0.7. As can be seen in Table 2, the loading, AVE, and CR values exceeded the suggested values; hence, the convergent validity of each model is deemed sufficient. The loading values were recorded to range from 0.588 to 0.844, specifically from

**Table 2** Convergent validity

Construct	Items	Loading	AVE	CR
Attitude	BV1	0.881	0.684	0.895
	BV2	0.884		
	BV3	0.859		
	BV4	0.664		
Subjective norm	NOS1	0.838	0.507	0.804
	NOS2	0.870		
	NOS3	0.826		
	NOS4	0.858		
	NOS5	0.845		
Perceived behavioral control	KTL1	0.689	0.719	0.927
	KTL2	0.672		
	KTL4	0.717		
	KTL6	0.767		
On-campus food bank program	FB1	0.720	0.543	0.824
	FB2	0.822		
	FB3	0.796		
	FB4	0.588		

Note: KTL3, KTL5, FB5 were deleted due to low loading

**Table 3** Discriminant validity

	Attitude	On-Campus Food Bank Program	Perceived Behavioral Control	Subjective Norm
Attitude				
On-Campus Food Bank Program	0.634			
Perceived Behavioral Control	0.216	0.412		
Subjective Norm	0.62	0.698	0.124	

0.507 to 0.719 for AVE and from 0.804 to 0.927 for CR. Therefore, these findings suggested that convergent validity is achieved.

After achieving the criteria for convergent validity, discriminant validity was further achieved by model’s testing using the presence of discriminant validity through the correlation criteria heterotrait-monotrait (HTMT) ratio in deciding whether all constructs in the established model varied from other constructs. Resultantly, each construct was unique and not described in the model by other constructs (Hair et al. 2017). In line with Henseler et al.’s (2015) recommendation, all HTMT scores were smaller than the threshold score of 0.90 (see Table 3); therefore, this shows that the model has fulfilled the suggested criteria and that all structures of the analysis were validated via discriminant validity.

Additionally, the study conducted a lateral collinearity analysis in order to ensure that collinearity problems did not exist in the model prior to examining the structural model upon verifying the convergent and discriminant validity of the measurement model. Based on Hair et al.’s (2017) suggestion, collinearity problems can be analyzed by measuring the values of variance inflation factor (VIF) of all research model’s construct. In this study, the values for VIF must not be greater than the threshold score of 3.3 to ensure no collinearity problems among the predictor variables (Diamantopoulos and Siguaw 2006). The results indicated that the VIF values were less than 3.3 for all variables, suggesting no collinearity problems that exist within the predictor variables.

### 4.3 Assessment of the Structural Model

Path analysis has been performed to assess the three hypotheses after testing the measurement model. The beta value direction, the t- and p-values for determining

the significance levels, as well as the lower level (LL) and upper level (UL) confidence intervals were analyzed in the evaluation of the structural model (Hair et al. 2017). To assess the direct effect, the study performed a bootstrapping procedure using bootstrap 5,000 replicates. Specifically, it was proposed in H1 that attitudes positively influence the adoption of the on-campus food bank program. The findings then revealed the significance of the relationship ( $b = 0.228, t = 4.094; LL = 0.114, UL = 0.334, p < 0.001$ ); hence, H1 was accepted. As for H2, which suggests that PBC has a positive influence on the adoption of the on-campus food bank program, the beta result recorded a positive value and a significant relationship ( $b = 0.223, t = 4.972; LL = 0.139, UL = 0.317, p < 0.001$ ); thus, H2 was also accepted. Finally, in terms of H3, which proposes that subjective norm has a positive influence on the adoption of the on-campus food bank program, the results demonstrated a positive and significant relationship ( $b = 0.426, t = 7.502; LL = 0.314, UL = 0.526, p < 0.001$ ); hence, H3 was likewise accepted (Table 4).

The coefficient of determination ( $R^2$ ) of the independent variables against the dependent variable is provided in Table 5. It is followed by as well as the effect size ( $f^2$ ) values. The dependent variable's variance as described by the independent variables in the research model is represented by the  $R^2$  value. As shown in the table, the  $R^2$  value is 0.427, which shows that 42.7% of the variation in the endogenous variable (adoption of food bank program) was clarified by the independent variables, namely attitude, subjective norm, as well as perceived behavioral control. With regard to the effect size,  $f^2$ , the  $R^2$  value was reported to change when omitted from the model. In line with Cohen's (1988) suggestion, the effect size impact is deemed small if the  $f^2$  value denotes 0.02, medium if the value denotes 0.15, and high if the value denotes 0.35. Based on Table 5, attitudes with  $f^2 = 0.063$  and PBC with  $f^2 = 0.084$  have a small effect size along the dependent variable (adoption of food bank

**Table 4** Hypothesis testing

Relationship		Std Beta	Std error	t value	p values	CI		VIF	Decision
						LL	UL		
H1	Attitude → FB	0.228	0.057	4.094	0.000	0.114	0.334	1.441	Supported
H2	Perceived behavioral control → FB	0.223	0.045	4.972	0.000	0.139	0.317	1.024	Supported
H3	Subjective norm → FB	0.426	0.054	7.502	0.000	0.314	0.526	1.433	Supported

Note: CI = Confidence Interval, LL = Lower Level, UP = upper level, FB = food bank program

**Table 5** Coefficient of determination ( $R^2$ ), and effect size ( $f^2$ ), and predictive relevance ( $Q^2$ )

	Relationship	$R^2$	$f^2$	$Q^2$
H1	Attitude → FB	0.427	0.063 (small)	0.063
H2	Perceived behavioral control → FB	0.427	0.084 (small)	0.084
H3	Subjective norm → FB	0.427	0.221 (medium)	0.221



program), whereas subjective norm with  $f^2 = 0.221$  has a medium effect size along the endogenous variable.

This analysis employed a blindfolding technique to determine the test model's statistical relevance. This technique was applied to the endogenous construct (Hair et al. 2016). The  $Q^2$  values (SEE Table 5) for attitudes (0.063), PBC (0.084), and subjective norm (0.221) are more than 0; hence, the model has adequate predictive relevance.

## 5 Discussion

The research aims is to explore the incorporated influence of attitudes, subjective norm, as well as perceived behavior control towards the adoption of food bank program among university students. The research results will add new evidence to the adoption of the food bank program through the TPB theory. Briefly, the study found that factors such as attitudes, subjective norm, including perceived behavioral control can influence the adoption of food bank program among university students. The positive relationship between attitudes and the adoption of the food bank program was supported by Afendi et al. (2014) and Lwin et al. (2020). Phillips et al. (2018) also stated that food insecurity will affect academic performance and academic disturbances if the university does not fight food insecurity among students. Therefore, positive attitudes towards the adoption of food bank program among university students are crucial and the food bank program is clearly important to university students.

The second research question addresses the relationship between perceived behavioral control and the adoption of the food bank program. The results indicated that perceived behavior has a positive and significant influence on the adoption of the food bank program. This was supported by Stefan et al. (2013) who seconded the influence of PBC on good food management, which coincides with the current study. Additionally, Stancu et al. (2016) also verified that PBC strongly and significantly influences the adoption of good food management including the provision of a food bank on campuses.

The last research hypothesis deals with the relationship between subjective norm and the adoption of the food bank program. The study revealed that subjective norm is positively related to the adoption of food bank program; hence, the third research hypothesis (H3) was supported. The findings also coincide with many previous studies, which reported that subjective norm has a significant influence on the adoption of food bank program. Similar to the findings reported by Sirieix et al. (2017), the findings in the current study highlighted subjective norm as a factor that drives individual intention and food behavior. However, Graham-Rowe et al. (2014) reported that subjective norm does not influence student intention. Besides, students also receive encouragement and support from those who are important to them, thereby influencing the adoption of food bank programs. This shows a positive sign and a promising step in relation to facilitating food insecurity via the food bank

program. As such, social influence may have a particular influence on the adoption of food program among university students. The findings were as anticipated because the students who deal with food insecurity are likely to stem from issues such as low family income, lack of financial resources, high tuition and living costs, or personal emergencies (Cady 2016). Additionally, social pressure is also one of the critical issues faced by students because referents by certain important individuals or groups may influence one's attitudes, feelings, and behavior (Ajzen and Fishbein 1980). This finding coincides with the theory of planned behavior by which subjective norm including individual intentions and behaviors are a result of the subjective evaluation of events taking place in the environment.

## **6 Conclusion and Recommendation**

Overall, universities should be a catalyst that enhances attitudes, subjective norm, as well as perceived behavioral control towards introducing an on-campus food bank program to alleviate student hunger. This study extends the understanding of researchers and practitioners in terms of fighting food insecurity among university students.

### ***6.1 Theoretical Implications***

The results supported the predictions derived from the TPB theory. The current research adds to the theoretical contribution by highlighting attitudes, subjective norm, including perceived behavioral control as the key factors influencing the adoption of the food bank program on campus. Additionally, this study further enlightens the relationship between the adoption of food bank program and related variables from the perspective of TPB. By developing a multi-component model that involves variables such as attitudes, subjective norm, as well as perceived behavioral control, this study verifies that these variables are indeed the important factors influencing the adoption of the food bank program.

### ***6.2 Practical Implications***

Apart from the theoretical contributions, this study also provides practical implications regarding the key factors in the on-campus food bank program in universities. In terms of practical perspective, the research findings may have several important implications. Firstly, it is clear that the food bank program is required by university students to fight hunger on campus. This finding adds to the importance of taking a wider subjective norm such as the social context in the adoption of food

bank programs among students. Finally, the results also showed that attitudes and behavioral control are important factors to address because they ease the students in adopting the on-campus food bank program in their universities. Food banks are significant in the food aid industry because they directly distributed donated and purchased groceries to fight food insecurity among students. The public health implications concerning food insecurity are also important to fight food insecurity among students in needs. Instead of being a one-off or an ad hoc program that happens occasionally or only once, this program rather becomes a continuous effort to assist poor students in coping with the increased living standards.

### ***6.3 Limitations and Recommendations for Future Research***

Overall, it is noteworthy to address that the current study implies two drawbacks. First of all, the respondents in this study primarily include students from Malaysian public universities; hence, there was no participation from those in private universities. The data can be improved by adding more participants and covering more parts of the student body with a larger geographical region. The information from this study also contributes to the understanding of an increasingly prevalent problem of food insecurity. Thus, future studies should aim for a larger sample. Secondly, the results were only based on the data obtained from online questionnaires; hence, this may question the agreement between self-reported responses and actual behavior. As such, interviews and observations may offer a more detailed approach in the future in examining the adoption of the food bank program on campus.

## **References**

- Abd Rahman, A., Asrarhaghighi, E., Ab Rahman, S.: Consumers and halal cosmetic products: knowledge, religiosity, attitude and intention. *J. Islamic Mark.* **6**(1), 148–163 (2015)
- Afendi, N.A., Azizan, F.L., Darami, A.I.: Determinants of halal purchase intention: case in Perlis. *Int. J. Bus. Soc. Res.* **4**(5), 118–123 (2014)
- Ajzen, I.: From intentions to actions: a theory of planned behavior. In: Kuhl, J., Beckmann, J. (eds.) *Action Control: From Cognition to Behavior*. SSSP Springer Series in Social Psychology, pp. 11–39. Springer, Heidelberg (1985). ISBN: 978-3-642-69746-3
- Ajzen, I.: *Attitudes, Personality, and Behavior*, 2nd edn. Dorsey Press, Chicago (1988)
- Ajzen, I.: The theory of planned behavior. *Organ. Behav. Soc. Hum. Decis. Process.* **50**(2), 179–211 (1991)
- Ajzen, I.: The theory of planned behavior: reactions and reflections. *Psychol. Health* **26**(9), 1113–1127 (2011)
- Ajzen, I.: The theory of planned behavior. In: Lange, P.A.M., Kruglanski, A.W., Higgins, E.T. (eds.) *Handbook of Theories of Social Psychology*, no. 1, pp. 438–459. Sage, London (2012)
- Ajzen, I., Fishbein, M.: *Understanding Attitudes and Predicting Social Behavior*, Pbk edn. Prentice-Hall, Englewood Cliffs (1980)
- Ajzen, I., Madden, T.J.: Prediction of goal-directed behavior: attitudes, intentions, and perceived behavioral control. *J. Exp. Soc. Psychol.* **22**, 453–474 (1986)

- Anderson, J.C., Gerbing, D.W.: Structural equation modeling in practice: a review and recommended two-step approach. *Psychol. Bull.* **103**(3), 411–423 (1988)
- Brennan, M.: Why do consumers deviate from best microbiological food safety advice? An examination of 'high risk' consumers on the island of Ireland. *Appetite* **49**(2), 405–418 (2007)
- Cady, B.C.: Starving for knowledge: why campuses need to address student food insecurity. *About Campus* **21**(2), 27–31 (2016)
- Cappellini, B.: The sacrifice of re-use: the travels of leftovers and family relations. *J. Consum. Behav.* **8**(6), 365–375 (2009)
- Cohen, J.: *Statistical Power Analysis for the Behavioral Sciences*, 2nd edn. Erlbaum, Hillsdale (1988)
- Cruz, L.D., Suprapti, S., Yasa, K.: Aplikasi theory of planned behavior dalam membangkitkan niat berwirausaha bagi mahasiswa fakultas ekonomi unpaz, dili Timor Leste. *E-Jurnal Ekonomi Dan Bisnis Universitas Udayana* **4**(12), 895–920 (2015)
- Diamantopoulos, A., Siguaw, J.A.: Formative versus reflective indicators in organizational measure development: a comparison and empirical illustration. *Br. J. Manag.* **17**(4), 263–282 (2006)
- Dubick, J., Mathews, B., Cady, C.: Hunger on campus: the challenge of food insecurity for college students. *College and University Food Bank Alliance* (2016). [http://studentsagainsthunger.org/wp-content/uploads/2016/10/Hunger\\_On\\_Campus.Pdf](http://studentsagainsthunger.org/wp-content/uploads/2016/10/Hunger_On_Campus.Pdf)
- Farahbakhsh, J., Hanbazaza, M., Ball, G.D., Farmer, A.P., Maximova, K., Willows, N.D.: Food insecure student clients of a university based food bank have compromised health, dietary intake and academic quality. *Nutr. Diet.* **74**(1), 67–73 (2017)
- Fishbein, M., Ajzen, I.: *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*. Addison-Wesley, Reading (1985)
- Fuller, C.M., Simmering, M.J., Atinc, G., Atinc, Y., Babin, B.J.: Common methods variance detection in business research. *J. Bus. Res.* **69**(8), 3192–3198 (2016)
- Global Food Banking Network: 2013 Annual Report (2013). <https://www.foodbanking.org/2017annualreport/>
- Graham-Rowe, E., Jessop, D.C., Sparks, P.: Identifying motivations and barriers to minimizing household food waste. *Resour. Conserv. Recycl.* **84**, 15–23 (2014)
- Green, S.B.: How many subjects does it take to do a regression analysis? *Multivar. Behav. Res.* **26**, 499–510 (1991)
- Hair, J., Hollingsworth, C.L., Randolph, A.B., Chong, A.Y.L.: An updated and expanded assessment of PLS-SEM in information systems research. *Ind. Manag. Data Syst.* **117**(3), 442–458 (2017)
- Hair, J.F., Hult, G.T.M., Ringle, C., Sarstedt, M.: *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Sage Publications, Thousand Oaks (2016)
- Henseler, J., Ringle, C.M., Sarstedt, M.: A new criterion for assessing discriminant validity in variance-based structural equation modelling. *J. Acad. Mark. Sci.* **43**(1), 115–135 (2015)
- Hulland, J., Baumgartner, H., Smith, K.M.: Marketing survey research best practices: evidence and recommendations from a review of JAMS articles. *J. Acad. Mark. Sci.* **46**(1), 1–17 (2018)
- Jaffar, M.A., Musa, R.: Determinants of attitude towards Islamic financing among halal-certified micro and SMEs: a preliminary investigation. *Procedia-Soc. Behav. Sci.* **130**(16), 135–144 (2014)
- Kumar, M., Talib, S.A., Ramayah, T.: *Business Research Methods*. Oxford University Press, Selangor (2013)
- Lwin, M.O., Malik, S., Lau, J.: Association between food availability and young people's fruits and vegetables consumption: understanding the mediation role of the theory of planned behaviour. *Public Health Nutr.* **23**(12), 2155–2164 (2020)
- Mackenzie, S.B., Podsakoff, P.M., Podsakoff, N.P.: Construct measurement and validation procedures in MIS and behavioral research. *MIS q.* **35**(2), 293–334 (2016)
- Mejia, A., Calam, R., Sanders, M.R.: Examining delivery preferences and cultural relevance of an evidence-based parenting program in a low-resource setting of Central America: approaching parents as consumers. *J. Child Fam. Stud.* **24**(4), 1004–1015 (2015)

- Phillips, E., Medaniel, A., Croft, A.: Food insecurity and academic disruption among college students food insecurity and academic disruption among college students. *J. Student Aff. Res. Pract.* **55**(4), 353–372 (2018)
- Podsakoff, N.P.: Construct measurement and validation procedures in MIS and behavioral research. *MIS q.* **35**(2), 293–334 (2011)
- Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y., Podsakoff, N.P.: Common method biases in behavioral research: a critical review of the literature and recommended remedies. *J. Appl. Psychol.* **88**(5), 879–903 (2003)
- Ringle, C.M., Wende, S., Becker, J.M.: *Smart PLS 3*. Boenningstedt: SmartPLS GmbH (2015)
- Siriex, L., Lála, J., Kocmanová, K.: Understanding the antecedents of consumers' attitudes towards doggy bags in restaurants: concern about food waste, culture, norms and emotions. *J. Retail. Consum. Serv.* **34**, 153–158 (2017)
- Stancu, V., Haugaard, P., Lähteenmäki, L.: Determinants of consumer food waste behavior: two routes to food waste. *Appetite* **96**, 7–17 (2016)
- Stefan, V., Van Herpen, E., Tudoran, A.A., Lähteenmäki, L.: Avoiding food waste by Romanian consumers: the importance of planning and shopping routines. *Food Qual. Prefer.* **28**(1), 375–381 (2013)
- Wedayanti, N.P., Giantari, I.: Peran Pendidikan Kewirausahaan Dalam Memediasi Pengaruh Norma Subjektif Terhadap Niat Berwirausaha. *E-Jurnal Manajemen Universitas Udayana* **5**(1), 533–560 (2016)
- Yasin, N.H.M., Rashid, A.F.A., Hasbollah, H.R., Ahmad, G., Halim, M.H.A., Marican, N.D., Nasir, M.F.M.: Nutritional level: do consumers in Kota Bharu Kelantan understand? *Int. J. Innov. Creat. Change* **6**(3), 89–103 (2019)
- Yunos, R.M., Mahmood, C.F.C., Abd Mansor, N.H.: Understanding mechanisms to promote halal industry-the stakeholders' views. *Procedia-Soc. Behav. Sci.* **130**, 160–166 (2014)

# Understanding Green Environment Practices Through Local Authorities Perspectives



Muhamad Saufi Che Rusuli , Noraani Mustapha ,  
Anis Amira Ab. Rahman , Norshahila Ibrahim , Jati Kasuma Ali ,  
and Mohd Baharudin Ridzuan 

**Abstract** This study focuses on green environmental practices on cleanliness city and it was conducted qualitatively and involved four local authorities in Malaysia. The interview method was conducted with the selected four respondents who assigned the tasks to monitor green environment operations in their respective cities. Therefore, the results of the study found that local authorities and NGOs need to work together to improve green environmental practices and awareness campaigns among the community. Local authorities are also advised to take action on any community complaints so that environmental practices remain vigilant. This study found that changes in the behavior and attitudes of the community also need to be enhanced so that they are always concerned about the cleanliness of the respective city. Hence, this study should be continued from time to time covering various aspects and perspectives across districts, states and countries. It is hope that this study could contribute to part and partial achievement of Malaysia's 11<sup>th</sup> Sustainable Development Goals (SDGs), namely sustainable cities and communities.

**Keywords** Green · Cleanliness · Awareness · Sustainable development goals · Malaysia

---

M. S. C. Rusuli (✉) · N. Mustapha · A. A. Ab. Rahman  
Faculty of Entrepreneurship and Business, Universiti Malaysia Kelantan Kampus Kota,  
16100 Pengkalan Chepa, Kelantan, Malaysia  
e-mail: [msaufi@umk.edu.my](mailto:msaufi@umk.edu.my)

N. Ibrahim  
Faculty of Art, Computing and Creative Industry, Universiti Pendidikan Sultan Idris,  
35900 Tanjung Malim, Perak, Malaysia

J. K. Ali  
Faculty of Business and Management, Universiti Teknologi MARA, Sarawak Branch,  
Jalan Meranek, 94300 Kota Samarahan, Sarawak, Malaysia

M. B. Ridzuan  
Faculty of Civil Engineering and Built Environmental, Universiti Tun Hussein Onn Malaysia,  
86400 Parit Raja, Johor, Malaysia

# 1 Introduction

People are acutely aware of all of the operating and manufacturing activities that have serious environmental consequences, and researchers from all across the world are interested in learning more about the impact of green practices, particularly in urban cities (Jassim et al. 2020). With the environmental issues such as water, air pollution, and climatic change, it is advisable that people look for ways to repair the damage of the planet by starting keeping our environment clean. Many people think they are too small to make a difference, but when all of them put on concerting effort together, they can see the positive results they can create. Gearing from this current pandemic situation, people are now become more seriously looking at the initiatives to keep the environment clean and safe; such as refuse single-use items, plant trees and native plants, change the travel habits, buy locally and compost products, conserve water, reduce use of chemicals and properly dispose of waste among practices that can help support the campaign. The environmental issues become center of discussion nowadays and call for awareness among society around the globe. The awareness of go green is mainly focuses to inculcate the green behavior among society to keep our environment clean and healthy from any pollution and disease (Che Rusuli et al. 2016). Pollution may rooted from various sources and left severe impact to our planet. Pollution such as in the air, water, soil, noise, radioactive, thermal, light, and visual will impact our lives in different ways and degrees. In fact, It may also lead to fatal diseases if the situation stays for a long period of time since the polluted air will impact to decline the lung capacity, decrease the lung function, and could shortened life span. Water pollution, for instant, may possibly cause diarrhea, malaria, hepatitis A, lead poisoning and many more consequences which can be concluded that different type of pollution lead to different type of diseases. No matter how many campaigns and initiatives are created and launched, they will be ineffective and short-lived if community members do not adopt and apply a green lifestyle. A very fundamental exercise for instance, individuals need to practice a habit like putting thrash into a proper bin and transfer it to a proper gathering place, use recycle items and reduce usage of plastic bags, stop open burning, stop cutting trees and take a move to participate in activities like Earth Hour, Earth Day, World Environment Day and other related activities and programs.

Greenhouse effect and environmental problems also rooted from human activities and many people are aware about their role in keeping green environment (Tsen et al. 2006). As such, various initiatives should be taken to preserve and to restore our own mother nature. A large number of customers start focusing on becoming green consumers and revealing their willingness to purchase and pay more green products as alternatives (Han et al. 2011).

As all knows, green-consumers are individuals who are well aware and concerned about the environmental issues (Soonthonsmai 2007). People may not perfectly implementing go green in their daily routine but, they must know the importance of using green products in their lives. In reality, business industries have taken many efforts in producing products in green standards. In a very simple way, the term

“green” brings the meaning of taking initiative to keep the environment clean (Rajan and Ponraj 2020; Mohtashami et al. 2020; Wolfe and Shanklin 2001). Go Green consumption can have different meanings for different people and different purposes (Coleman et al. 2011). In reality, the pace where the culture of going green is steadily slow. Either the norm is considered less important or it just another optional “things-to-do” that added into daily routine that made some people simply ignore their environment. Let’s open our eyes and asked, how many of us feel attracted to the green campaigns and activities? Previous researchers emphasized that all the information and awareness (e.g., pamphlet, bulletin, etc.) that contain best practices of green need to be communicated to the society (Geng et al. 2013). In fact, social media also plays a crucial role in connecting and spreading the information to society. As such, green practices still remain as a research gap and needs to be further explored (Nejati and Nejati 2013; Mohamed et al. 2020; Yadav and Ramaswamy 2020). The contribution of this study is to understand the green environment practices through local authorities. The next sections include methodology which used qualitative approached, discuss the results and conclusions along with implications and future studies.

## 2 Methods

In this exploratory research, a qualitative approach was adopted to provide a better stance and essence in understanding how local authorities interact and give awareness to the community to comply with the green environmental practices to make sure their cities clean. This study utilized interpretive paradigm that brought out meaning from the field for reality construction. From the ontological point of view, this study is focusing on the premise that awareness, beliefs, perception, interpretation, experience, and interaction are important to people (Mason 2002). This is because, from an epistemological point of view, it is presumed that when people talking interactively, it is a meaningful way to build the data. In line with that, judgemental sampling is adopted in selecting the informants. In order to obtain the utmost information from the public authorities, this study targeted top personnel from local authorities to share their experience and practice on green environment concept. The interview was done involving four top personnel that highly involved with the green management were as follows a) Yang Dipertua Perbandaran (Mayor), b) Plan Development and Landscape Department, and c) Corporate and Communication Department. For this purpose, four cities have been selected due to the declaration of their establishment as green environment towards cleanness city: a) City of Muar Johor, b) City of Melaka, c) City of Kuala Terengganu and d) City of Ipoh Perak. Due to confidentiality of the report, only initial name will be disclosed in this finding.

The data for this study was obtained through semi-structured interview. The interview protocol has been developed to assist data collection process that aims to capture the information regarding to reaction of local authorities on green environment practice towards cleanliness city. To build a good rapport and follow qualitative research ethics, the researcher firstly sent the informants an interview confirmation letter



thanking them for their interest in participating in the study after they have agreed to participate in the study. The interview session was conducted at the informants' office within about two hours by means of both Malay and English languages. Prior to interview session, permissions were sought from informants to record the interview conversations to speed up the process of interview as well as to capture actual content of the informant's statements. Subsequently, the recorded interviews were transcribed manually to enable effective data analysis. The interview transcript was free from any personal detail about the informants. The names of the informants have been replaced by an identification code for all written materials and an electronic data file linked to the research (Creswell and Clark 2017). The data has been arranged according to the themes that emerged from the data which indicated the first cycle coding that utilized thematic conceptual coding. Those conceptual coding were referred to reaction of local authorities on green environment practice. The second cycle coding brought out the main themes that cultivated the research findings.

### 3 Results

The findings discussed based on research objective's that the community reacted moderate but positively towards the green environment practices through cleanliness of the city. The selection criteria that assist in decision making during evaluation process will also be discussed here.

#### *Green Environment Practice Towards Cleanness City in Malaysia*

Building a green environment is preeminent, especially in the context that climate change has a strong impact on the earth and the Industrial Revolution 4.0 is changing the world day by day (Hoi and Danh 2020). Those top cleanness city in Malaysia has indicated 3 strategies that has been adopted as practices towards their cleanness city in Malaysia. The first strategy is top leadership vision, second strategy is aggressive green campaigns and third is community awareness. The ability of leaders towards members of the local community can influence the views and behaviors of green practices implemented by local authorities in ensuring the city remains clean. In addition, the results of the study also found that there is a demand from Non -Governmental Organizations (NGOs) that have green program funds to join in green missions at the national level. This indicates that green environment practices are implemented in stages according to the provisions of the respective state administrations. While local authorities receive modest allocations for green environment practice programs, they need to be creative in producing a conducive and clean green urban environment. Second strategy is aggressive green campaigns. Researchers (Ogiemwonyi et al. 2020) urged those environmental issues have significantly multiplied due to lack of awareness and stagnation by green consumers and other emerging nations. So, the program manifests in government policies and programs at all scales must made visible through advertising campaigns, social media, and everyday products (Ravindran and Vijaya 2019; Wittmer 2020). As mentioned by respondents LAIP

and LAMB stated that “all private companies together with local authorities have organized green programs and awareness to the community so that they know their roles towards the environment”. Third is community awareness. The obstacles faced during the process of synergy activities took place, including several community groups having a low level of awareness that they did not care about the correct sorting of waste (Akbar 2020). It is tally with the current situation stated by respondents LAMU and LAKT revealed that “there are some community or group of people still at the level of throwing garbage in its place, burn the dustbin and have no concern about sorting waste properly”. Therefore, education, motivation, and approach must be implemented in different ways. Awareness alone is not enough without practices because the consequence of awareness must be changing attitudes and consequently changing attitudes and behaviors (Ahmad 2020; Rahman et al. 2021).

### ***The Initiatives to Improve the Current Adopted Practice***

Currently, there are lots of initiatives that has been adopt and practice by local authorities to comply with the green environment towards the cleanliness city. The results for the interview conducted indicates that the initiatives like easy e-tree system used by LAIP to monitor their tree inventory. It is not a regular monitoring by the landscaping division as they need to ensure the health level of the planted trees is monitored and well care. The second initiative is that the city council also recycles all the tree waste that is cut down to be used as fertilizer. This is one of the good and worthwhile initiatives. The third initiative is through the Green Lifestyle Carnival which has been launched by MEST. In this carnival, they stated many components involved such as awareness, education, seminars for the public, industry and local authorities in six provinces such as North Ipoh Region, South Batu Pahat Region, Central Putrajaya Region, East Coast Kuantan Region, Sabah and Sarawak Region. Fourth, is green office practices by companies revealed that the extent of green initiatives adoption and environmental performance is at moderate level (Abdul Aziz et al. 2018). However, previous researcher (Yaman et al. 2021) stated that the green initiatives adoption positively affects the environmental performance of Malaysian companies. To make sure the continuity of green environment practice towards cleanliness city is to make as many corporate social responsibilities (CSR) work together with local authorities.

### ***Idea of Green Environment is Practicable and Highly in Demands***

The result indicates that the idea of green environment towards cleanliness city is seem not based on highly in demands by the consumer. Through interviews session, most of respondents LAIP, LAMU, LAKT, LAMB and MEST said that “the idea of green programs created is based on the local authorities’ budget allocation”. Although, LAMB and LMKT stated that the development of sustainable green programs must be in line with the wishes of the people who dream of a clean and healthy city. Furthermore, referring to the website of the Ipoh City Council indicated that there is a program launched namely *Program Cetusan Idea Warga Kota* which was held in 2016. All the program, for example, Program with Environmental Department, Tree plant, Green Talk, Recycle Program, Generasi Berwawasan dan Kebun Komuniti has been conducted for the society. Even though the idea of the program is made by local authorities, previous researcher (Dailiati et al. 2020) said that the

process of implementation of waste control has made by the Department of Cleanliness and Gardening. The finding showed that the capacity building program will be succeed and be sustainable if it is strongly related with the needs of the community and implement it in stages and in sufficient time (Herdiansyah et al. 2020).

### ***Current Green Environment is Efficiently Managed***

The finding from the study revealed that green environment is efficiently managed but moderate and in line with the people's need. Majority of respondents such as LAIP, LAMU, LAKT, LAMB and MEST agreed that "all the policies, procedure, program and practice is what the people needs". According to researcher (Pham et al. 2020), when employees are efficiently trained and provided required environmental knowledge and skills, they are willing to apply such knowledge and skills in environmental tasks, which is vital to achieving green performance. Despite the fact, a global study done by previous researcher (Naderi and Steenburg 2018) said that millennials have grown up in one of the most difficult economic climates and found that this group continues to be most willing to pay extra for sustainable offerings. MEST believed that all parties not only local authorities must play their roles and responsibility to the make sure that current green environment practices is efficiently managed. In fact, LAMU stated that "the government needs to inform the people to keep the environment clean, conduct daily monitoring and continue to educate the people to adopt green environmental practices. Hence, the strength of pro-environmental attitudes and behaviors among society, community, millennials and whatever we called was depends on individual and personal characteristics (Naderi and Steenburg 2018). In fact, it may be influenced by general characteristics that lead to different motives to engage in green behavior.

## **4 Conclusions**

In conclusion, the awareness levels of green environment practices and cleanliness city is still at a moderate and needs to be improved from time to time. All sections of society need to change their behavior and attitude of love towards cleanliness. They need to participate in all green activities or programs organized by the parties involved to ensure that the city they live in remains clean and healthy. A high attitude of green practices in the community will result in a clean, well-kept and safe area to live in. The government in collaboration with local authorities has reacted through many programs and projects that promote environmental values, but they have been largely flatly trampled by the speed and culture of life in Malaysia. Despite having various activities, campaign, rules and regulations, educational programs about green practices are suggested to be utilized as platform to create awareness among people especially to the young generation. Educational providers are called to add, to create and to enhance curriculum related to go green lifestyle, to be delivered in the form of syllabus contents and activities. The findings indicated that activities and awareness to the public became authorities' daily routine, enhanced by enforcement by

the local authorities. The initiatives are regaining support from society, and the local authorities actively involved in implementing various awareness programs and was extended to collaborate as joined campaign with other cities. The findings from this current study may be used as reference to develop a better framework for the green environment towards cleanliness city. As for the theoretical contribution, findings from the study have given data to create a new framework and model of cleanliness city in Malaysia. To the practice, the findings can be referred to; to craft new policy, initiate new programs related to go green environment. As for limitation, this study only chooses four local authorities' bodies instead of fourteen local authorities exists across Malaysia due to the time constraint (which is affected by pandemic covid19). It is suggested that future researchers will be exploring any kind of community resistance to the implementation of a green environment and a clean city to understand the causes of resistance, some of the community may refuse to join any effort made by local authorities especially focusing on other cities that not covered in the current study. In this regard, all parties must work together to ensure that green practices live in our community increase and the level of awareness is high, so that we can successfully achieve Malaysia's 11th Sustainable Development Goals (SDGs), namely sustainable cities and communities.

**Acknowledgements** This research is funded by the (R/FRGS/A0100/01432A/001/2019/00715) FRGS research grant from Ministry of Higher Education (MOHE) Malaysia.

## References

- Abdul Aziz, N.A., Ong, T.S., Foong, S.Y., Senik, R., Attan, H.: Green initiatives adoption and environmental performance of public listed companies in Malaysia. *Sustainability* **10**(6), 1–14 (2018)
- Ahmad, M.: Environmental education: an indispensable tool for public awareness. *Int. J. Res. Sub. Multi Lang.* **8**(4), 16–24 (2020)
- Akbar, M.: Synergy between student and communities to manage waste in Makassar city Indonesia. In: *IOP Conference Series: Earth and Environmental Science* (2020)
- Che Rusuli, M.S., Naqiah, M., Fitriani, Q., Syahida, N., Hakim, M.: The effectiveness of go green implementation among society in Kota Bharu, Kelantan. *Eur. J. Multidisciplinary Stud.* **1**(1), 7–11 (2016)
- Coleman, L.J., Bahnan, N., Kelkar, M., Curry, N.: Walking the walk: how the theory of reasoned action explains adult and student intentions to go green. *J. Appl. Bus. Res. (JABR)* **27**(3), 107–116 (2011)
- Creswell, J.W., Clark, V.L.P.: *Designing and conducting mixed methods research*. Sage publications (2017)
- Dailiati, S., Irawati, I., Marlinda, P.: Environmental cleaning control policy: analyzing cleanliness and gardening control in pekanbaru, Indonesia. In: *IOP Conference Series: Earth and Environmental Science* (2020)
- Geng, Y., Liu, K., Xue, B., Fujita, T.: Creating a green university in China: a case of Shenyang University. *J. Clean. Prod.* **61**, 13–19 (2013)

- Han, H., Hsu, L.-T.J., Lee, J.-S., Sheu, C.: Are lodging customers ready to go green? An examination of attitudes, demographics, and eco-friendly intentions. *Int. J. Hosp. Manag.* **30**(2), 345–355 (2011)
- Herdiansyah, H., Lucianto, A.E., Asteria, D., Handayani, D.: Capacity building for citizens in creating green and clean villages based on empowerment and social intervention. In: *IOP Conference Series: Earth and Environmental Science* (2020)
- Hoi, H., Danh, N.: Creating a green, clean and worth living city in the digital period. In: *IOP Conference Series: Earth and Environmental Science* (2020)
- Jassim, S., Al-Mubarak, M., Hamdan, A.: The impact of green supply chain management on firm's performance. *J. Inf. Knowl. Manag.* **19**(01), 2040026 (2020)
- Mason, O.J.: Teaching qualitative research methods: some innovations and reflections on practice. *Psych. Teach. Rev.* **10**(1), 68–75 (2002)
- Mohamed, N.H., Noor, Z.Z., Sing, C.L.I.: Environmental sustainability of universities: critical review of best initiatives and operational practices. In: Yaser, A.Z. (ed.) *Green Engineering for Campus Sustainability*, pp. 5–17. Springer, Singapore (2020). [https://doi.org/10.1007/978-981-13-7260-5\\_2](https://doi.org/10.1007/978-981-13-7260-5_2)
- Mohtashami, Z., Aghsami, A., Jolai, F.: A green closed loop supply chain design using queuing system for reducing environmental impact and energy consumption. *J. Clean. Prod.* **242**, 118–452 (2020)
- Naderi, I., Van Steenburg, E.: Me first, then the environment: Young Millennials as green consumers. *Young Consum.* **19**(3), 280–295 (2018)
- Nejati, M., Nejati, M.: Assessment of sustainable university factors from the perspective of university students. *J. Clean. Prod.* **48**, 101–107 (2013)
- Ogiewonyi, O., Harun, A.B., Alam, M.N., Othman, B.A.: Do we care about going green? Measuring the effect of green environmental awareness, green product value and environmental attitude on green culture an insight from Nigeria. *Environ. Climate Technol.* **24**(1), 254–274 (2020)
- Pham, N.T., Vo-Thanh, T., Shahbaz, M., Huynh, T.L.D., Usman, M.: Managing environmental challenges: Training as a solution to improve employee green performance. *J. Environ. Manage.* **269**, 110781 (2020)
- Rahman, M.A.U., Tasnim, T., Ahsan, M.M.: Children's understanding and aspirations on built environment: a case study on Khulna city of Bangladesh. *Megarlon* **16**(1), 92–100 (2021)
- Rajan, K., Ponraj, P.: A study on awareness towards clean india and green india in relation to their health habits among B. Ed. students. *Stud. Indian Place Names* **40**(3), 642–648 (2020)
- Ravindran, R., Vijaya, M.: Sustainability through green practices: willingness to adapt plastic ban initiative among consumers in Coimbatore city. *Manage. Soc. Sci.* **18**(22), 54 (2019)
- Soonthonsmai, V.: Environmental or green marketing as global competitive edge: Concept, synthesis, and implication. In: *EABR (Business) and ETLC (Teaching) Conference Proceeding*, Venice, Italy (2007)
- Tsen, C.-H., Phang, G., Hasan, H., Buncha, M.R.: Going green: a study of consumers' willingness to pay for green products in Kota Kinabalu. *Int. J. Bus. Soc.* **7**(2), 40–54 (2006)
- Wittmer, J.: Women's work in the 'clean city': perspectives on wellbeing, waste governance, and inclusion from the urban margins in Ahmedabad, India. (Doctor of Philosophy), *World Development* (2020)
- Wolfe, K.L., Shanklin, C.W.: Environmental practices and management concerns of conference center administrators. *J. Hospitality Tourism Res.* **25**(2), 209–216 (2001)
- Yadav, M., Ramaswamy, S.: A study of green HRM activities as a part of initiative towards sustainable development in the contemporary business environment. *Stud. Indian Place Names* **40**(27), 275–284 (2020)
- Yaman, R., Abdullah, J., Adnan, H., Ismail, F.Z., Ahmad, N.: Post occupancy evaluation of space energy intensity on green building index energy efficiency (EE) criteria. *Eng. J.* **25**(1), 233–243 (2021)

# The Case of Malaysian Working Women: A Discussion on Glass Ceiling Phenomenon Towards Career Advancement



Nurul Azwa Mohamed Khadri , Norehan Abdullah ,  
Cheah Yong Kang , Yusrinadini Zahirah MD Isa Yusuff ,  
Syamsuriana Sidek , and Hazrina Hasbolah 

**Abstract** Recent developments in manufacturing and services sector in Malaysia have heightened the need for women involvement at management level and decision-making level in labour force. It is government aimed to have 30 per cent of women involvement in top management in Malaysia. Even though there is increasing number of women in labour force involvement, but still there is lack number of women involving in top management post. Despite government had implemented several ways to help women involvement in top management position by offering flexible working arrangement policies (i.e., career break, flexible working hours, part time work, working beyond retirement age and working outside office), family friendly practices and work life benefits, but still this issue is becoming main agenda in labour force. In response to this, the study aims to provide updated review of research in Malaysian women involvement to top management affect due to the glass ceiling issue. Extending prior studies, this paper reviews the literature relating to the factors hindering women career advancement to top management. By understanding the effects of glass ceiling toward women career advancement, this study would give addition to the existing research on the way to overcome the glass ceiling issues that still shackles women particularly Malaysia. Future research on this area is significant to provide needed inputs to the related policy makers for the development of further action plans in providing support to aspiring women to top management.

**Keywords** Women · Career advancement · Glass ceiling · Top management · Malaysia

---

N. A. M. Khadri (✉) · Y. Z. MD Isa Yusuff · S. Sidek · H. Hasbolah  
Faculty Business and Entrepreneurship, Universiti Malaysia Kelantan, City Campus,  
Pengkalan Chepa, 16100 Kota Bharu, Kelantan, Malaysia  
e-mail: [azwa.mk@umk.edu.my](mailto:azwa.mk@umk.edu.my)

N. A. M. Khadri · N. Abdullah · C. Y. Kang  
School of Economy, Finance and Business, Universiti Utara Malaysia, 06010 Sintok, Kedah,  
Malaysia

# 1 Introduction

## 1.1 Overview of Labor Force Participation Rate (LFPR) in Malaysia

Recent development in Malaysia economic transformation have heightened the need for highly skilled workers and opened up the job opportunities, which it is also resulting in the changes of the nature of women involvement in the labour force rate (LFPR). Moreover, Malaysian government also has stated to have 59% of women involvement in labour force by 2020 under Eleventh Malaysian Plan (RMK-11). Based on (Data and Portal 2021), in 2010, women's labor force participation rate was 48% compared to men, 79.7%. However, in year 2020, women's participation rate in labor force has increased to 55.3% (Table 1).

Even though there is an increasing number of women in labour force, but still it is clearly shows that male still dominated the labour force. 60% or 2.6 billion of women who are not working mentioned that housework burden as a primary reason they are not part in labour force according to a speech given during Budget 2019. Therefore, it is not a surprise when the underrepresented of women at executive roles, corporate boards and senior management has given a rise of debates among scholars (Deszo et al. 2013; Hoobler et al. 2011) it will lead into gender gap issue in labour force. Although twentieth century shows an increasing number of women participate in the workforce, but their numbers in senior positions and decision-making post remain in small numbers. It has revealed that despite a large number of educated Malaysian women entering the labour force, Malaysia still has the lowest level of women's involvement in the senior management position than our Southeast Asia peep as shown in Fig. 1 (Vaishali et al. 2017).

While the government has met its target of having at least 30% women in decision-making positions (36%) in the public sector, the business sector has fallen short of this goal. In the corporate sector, however, it has only achieved 23.2% in the top management level in Malaysia's 100 largest publicly traded companies, according to a speech given by Malaysia Finance Minister, Lim Guan Eng during Budget 2019.

It's becoming increasingly difficult to overlook the significance of work-life balance in women's career advancement. (Clark 2000) defines work-life balance as a balance of satisfaction and good role play at work and at home with little role conflict. According to several research, labour has good consequences on families,

**Table 1** Labor force participation rate by gender 2010–2019

Gender	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Male	79.7	80.5	81	80.6	80.6	80.2	80.1	80.4	80.8	80.6
Female	48	49.5	52.6	53.7	54.1	54.3	54.7	55.2	55.6	55.3

Source Malaysia Open Data Portal (2020)

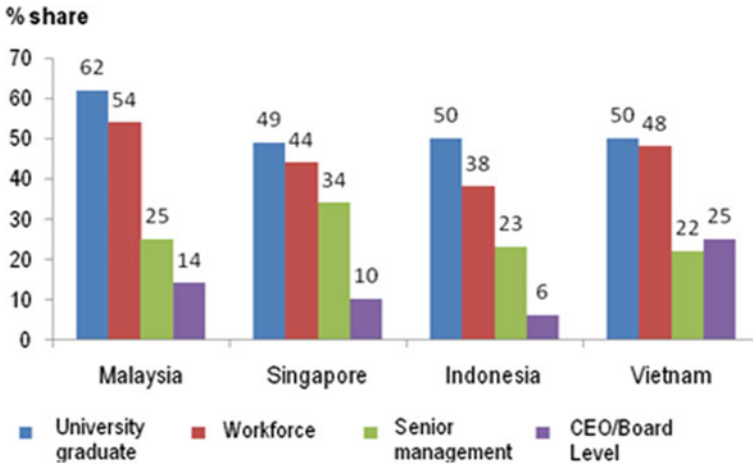


Fig. 1 Women gap in Southeast Asia (SEA)

such as reduced depression and improved psychological well-being (Marican et al. 2011).

As a result, this article examines the research on the factors that influence women’s promotion to top management positions, as well as the relationship between career development and work-life balance. This study would add to the existing research on how to address the glass ceiling challenges that still bind women, particularly in Malaysia, by analyzing the relationship between women’s career development and work-life balance.

### 1.2 Women Involvement in Top Management

Women’s educational levels have improved, resulting in a growth in the number of women working in Malaysia. Women need education to improve their living conditions and engage more actively in decision-making processes in their families, communities, workplaces, and political arenas (Masayu et al. 1990).

More importantly, women’s involvement in top management has given an optimistic influence towards performance of the firm as can be seen in firm financing, leadership styles and others. Numerous studies have demonstrated the link between women’s participation in top positions and strong business performance. This is supported by McKinsey Company (2007) published by UN Women reported by advancing the women equality can lead into the increases of world GDP by \$12 trillion in the coming years until 2025.

Although women are now graduating in greater number than men from higher education institution and the important of women involvement in top management had been recognized, but still the poor representation of women in management



levels continues. In spite of the reinforcement by the government and the former Prime Minister of Malaysia, Datuk Seri Mohd Najib bin Tun Abdul Razak calls for women to make up 30% of the boards of all public corporations, as well as initiatives like the establishment of the 30% Club in 2015), the effect of the investigation obviously shows that absence of women in leadership is still an issue (Mail 2016).

Apart from that, most of the women that already involved in workforce will leave the workforce due to the certain issues as is family matters and they're refusing to return back to workforce. For this reason, Malaysians still face a greater challenge of altering societal attitudes towards working women.

## 2 Literature Review

### 2.1 *Work-Life Balance and Glass Ceiling*

Glass ceiling is a term that symbolize the challenges and barriers that obstruct women career advancement to top management and decision-making position, both in large and public corporations. During the middle of the 1980s, the term "glass ceiling" was used to characterize the intangible and artificial hurdles that prohibit women from being promoted to senior management and other higher leadership positions in businesses (Boyd 1991). "Glass ceiling" term was first used by Gay Bryant, former editor of Working Women's magazines in 1984 in an Adweek profile. She is reported as saying,

"Women have reached a certain point – I call it the glass ceiling... at the top of middle management and they're stopping and getting stuck" (Boyd 1991).

Pillai et al. (2011) defined the word 'ceiling' represent limitation that obstruct career advancement, while 'glass' is something that is transparent and unseen. According to another conclusion by Maheshwari (2012), the glass ceiling can be separated into three categories: individual, societal, and organizational barriers.

Several studies have been published in the literature that discuss the factors that prevent women from holding prominent positions in organizations. Women's commitments to their families, unfavorable stereotypes and leadership styles, organizational culture in the workplace among co-workers, and cultural barriers between religious and racial groups are some of the most significant impediments (Hoobler et al. 2011; Clark 2000; Blair-Loy 2001). Therefore, family commitment, organizational culture and career opportunities are the main challenges which form the glass ceiling that hinder women's career progression in Malaysia (Subramaniam et al. 2016).

A Malaysian study exposed that woman in middle management face several barriers in their working environment that hinders the advancement of female leaders and career development opportunities. Finding also shows that women do not have enough organizational support, for instance: networking, family friendly initiatives plus mentoring (Dimovski 2010). It was discovered that explicit impediments, such as

the glass ceiling and a lack of mentoring, are still preventing women from progressing in the workplace, according to evidence (Samuel et al. 2020).

The gender differences observed in the influence of marital status on career advancement become even more concerning when the impact of having children is scrutinized. It has been supported by the previous study found that having children was associated with greater career advancement within the same organization for men, but it will reduced career advancement within the same organization for women (Valcour and Tolbert 2003). This results also can be explained by the majority of married women would take the responsibilities to take care of their children relatively than men. Responsibilities towards family were seen as obstacles to women's availability in the workplace especially when their organizations required them to extending their working hours, taking a trip for business purposes and or entertaining clients after-hours. Therefore, having children is perceived as one of the obstacles for women to move in top management among women.

Apart from that, the fact that women juggle a plethora of duties not only at work but also as a mother, wife, and daughter will encourage them to stay in their current job without advancement in order to spend more time with their families. Organizations, on the other hand, would require their managers to be adaptable in order to meet the needs of the business.

Women's commitment to family has been considered as one of the factors that restricted women from climbing the top ladder position. Many women must juggle multiple obligations, not only as a manager at work, but also as moms, housewives, and homemakers. According to recent studies, women managers are at a disadvantage due to family and work duties, with women managers avoiding overtime in order to spend more time with their families (Keene and Reynolds 2005). Above and beyond that, women do not enter top management positions in order to spend more time with their families. Most women would prefer not to work extra hours in order to spend quality time with their families and children. As a result, this theory has supported the notion that women are not as involved in high managerial roles as males are. This has aided in the so-called "brain drain" of female talent (where qualified women leave the workforce to stay at home to care for the family) (Izharuddin et al. 2013).

Women also would avoid entering top management due to the gender discrimination that they face in a workplace. Gender discrimination can manifest itself in a variety of ways, including compensation for promotions and treatment among co-workers. Recent evidence suggests that one of the biggest problems faced by the women was the perception of others that women were not suited to be managers (Omar 2004). In addition, there is still gender stereotyping and prejudice existence in the workplace (Samuel et al. 2020). Because of the differences in how this event is managed, females and males make highly different decisions about workforce participation, contributing to the gender gap (Anderson et al. 2002; O'Dorchai 2008).

Although Malaysia has many legal and legislative actions to encouraged women to participate in top management, Malaysians are still confronted with a greater challenge of changing societal attitudes towards working women. This is consistent with previous interviewers of Omar (2004), which showed that even though women

are readily recognized in a top management as a leader in a workplace, they still experience prejudices as they are climbing into the managerial ladder.

## ***2.2 Ways to Maintaining Women Retention in Labor Force***

Several attempts have been made in order to overcome these problems from getting worse and to improve women's position to enter top management, policies regarding Flexible Working Arrangement (FWA) should be implemented and strengthened especially in the private sector. The current types of FWA implemented in Malaysia is flexi hours including compressed work week, flexi hours, leaving early from work, job sharing, telecommuting and project-based work (Subramaniam 2011).

In Malaysia, the notion of eliminating discrimination in the workplace has been accepted. All Malaysians have equal job possibilities under the policy and practices. Malaysia emphasizes a fair distribution of job possibilities in the workforce across the country's various ethnic groups in order to promote social harmony and integration (ILO 2010). In terms of salary, the law makes no special provision for equal treatment of men and women. Equal treatment has been granted to men and women workers engaged in labour of equal value as a policy and in reality.

To prevent all of these issues from worsening, organizations must implement policies and practices that help women achieve a better work-life balance, such as implementing flexible working hours, providing time off for men to support women, and educating men to change their perceptions and mindsets about women's leadership credibility. Restructuring the organization can also give an important opportunity for companies to address the needs of women aspiring to positions of leadership. Those in charge of change management and organizational growth should consider how the restructuring would affect women in management and hence in organizations. These will take into account areas of restructuring and organizational change such as managerial performance, promotion and planning, recruitment, training, and development.

## **3 Conclusion**

As can be observed from the preceding discussion, the most important recommendation of this study is that decision makers at the corporate and government levels collaborate to develop gender-neutral policies for promotion and training opportunities. It was also shown that in order to overcome the family challenge of juggling home and works, organizations should facilitate flexible working arrangements and other family friendly policies. A more urgent mindset changes which is pertinent is to stop stigmatizing men who share household responsibilities.

Furthermore, further research into the various factors that may contribute to women's inability to advance in their careers should be conducted to identify impediments to women's advancement. Gaining a knowledge of the relationship between work-life balance and professional development may be beneficial in gaining a comprehensive understanding of women's decision to reach top management.

**Acknowledgements** The authors gratefully acknowledge the research Management and Innovation Centre of Universiti Malaysia Kelantan, Malaysia in providing the UMK Fundamental Research Grant (UMK-FUND) 2020 (R/FUND/A0100/01268A/001/2020/00843). The authors also are also thankful to all the contributors in this project directly or indirectly.

## References

- Anderson, D.J., Binder, M., Krause, K.: The motherhood wage penalty: which mothers pay it and why? *Am. Econ. Rev.* **92**(2), 354–358 (2002)
- Blair-Loy, M.: Cultural constructions of family schemas: the cases of women finance executives. *Gender Soc.* **15**(5), 687–709 (2001)
- Boyd, K.S.: Glass Ceiling. *Encyclopedia of Race, Ethnicity and Society*, 549–552 (1991)
- Clark, S.C.: Work/family: a new theory of work/family balance. *Work Relat.* **53**(6), 747–770 (2000)
- Malaysia Open Data Portal. [https://www.data.gov.my/data/ms\\_MY/dataset/labour-force-participation-rate-by-sex-and-state/resource/38525ac8-4c58-4841-a2d615fd9ca0bae5?inner\\_span=True](https://www.data.gov.my/data/ms_MY/dataset/labour-force-participation-rate-by-sex-and-state/resource/38525ac8-4c58-4841-a2d615fd9ca0bae5?inner_span=True). Accessed 19 Aug 2021
- Deszo, C. L., Ross, D. G., Uribe, J.: Why Are There So Few Women Top Managers? A Large Sample Empirical Study of Female Participation in Top Management (2013)
- Dimovski, V.M.: Comparative analysis of mid-level women managers' perception of the existence of glass ceiling in Singaporean and Malaysian organizations. *Int. Bus. Econ. Res. J.*, 61–78 (2010).
- Hoobler, J.M., Lemmon, G., Wayne, S.J.: Women's underrepresentation in upper management: new insights on a persistent problem. *Organ. Dyn.* **40**(3), 151–156 (2011)
- ILO: The elimination of discrimination in respect of employment and occupation (2010)
- Izharuddin, A., Lee, C.A., Martin, D., Lee, F.: Women's exodus from the workforce: not just brain drain. *The Malaysian Insider*, June 12, 2013 (2013)
- Keene, J.R., Reynolds, J.R.: The job costs of family demands: gender differences in negative family-to-work spillover. *J. Fam. Issues* **26**(3), 275–299 (2005)
- Maheshwari, K.: The glass ceiling impact on Indian women employees. In: National Conference on Emerging Challenges for Sustainable Business 2012. (2012)
- Malay Mail: Malaysian firms worst in region on women managers March 7, (2016). <https://www.malaymail.com/s/1074875/malaysian-firms-worst-in-region-on-women-managers-survey-shows>. Accessed from 15 Oct 2018
- Marican, S., Sabil, S., Zakaria, R.H., Rahman, A.A.: Can supportive management contribute to the well-being muslim working women in Malaysia? *African J. Bus. Manage.* **5**(12), 4883–4890 (2011). <https://doi.org/10.5897/AJBM10.1352>
- Masayu, N., Khalili, M., Esa, S., Miskiman, N.: A Demographic Transition in Malaysia: The Changing Roles of Women (1990)
- McKinsey and Company: Women Matter: Gender Diversity, a Corporate Performance Driver. New York (2007). [http://www.mckinsey.com/locations/paris/home/womenmatter/pdfs/Women\\_matter\\_oct2007\\_english.pdf](http://www.mckinsey.com/locations/paris/home/womenmatter/pdfs/Women_matter_oct2007_english.pdf)
- O'Dorchai, S.P.: Do women gain or lose from becoming mothers? *Brussels Econ. Rev.* **51**, 243–268 (2008)

- Omar, M.J.: Women in management in Malaysia. In: Burke, M.J., Women in Management Worldwide: Facts, Figures and Analysis, pp. 259–270. Ashgate Publishing Limited, England (2004)
- Pillai, K.R., Prasad, S., Thomas, J.: Why do women still experience downward gravitation in the corporate ladder? a close look at glass ceiling in Bahrain. *Res. Pract. Hum. Resour. Manag.* **19**(1), 1–10 (2011)
- Samuel, R., Omar, R., Hassian, U.: Barriers to women's advancement in the Malaysian private enterprises. *Int. J. Acad. Res. Bus. Soc. Sci.* **10**(13), 11–19 (2020)
- Subramaniam, G.: Flexible Working Arrangements in Malaysia and the Participation of Women in the Labour Force, pp. 224–227 (2011)
- Subramaniam, G., Khadri, N.A.M., Maniam, B., Ali, E.: The glass ceiling phenomenon – does it really affect Women's career advancement in Malaysia? *J. Organ. Cult. Commun. Confl.* **10**(1), 81–89 (2016)
- Vaishali, R., Mariam, J., Nerijus, Z., Chananya, R.: Moving Toward Gender Diversity in Southeast Asia: The Boston Consulting Group (2017)
- Valcour, P.M., Tolbert, P.: Gender, family and career in the era of boundarylessness: determinants an effects of intra- and-inter-organizational mobility. *Int. J. Hum. Resour. Manag.* **14**(5), 768–787 (2003)

# Financial Profiling and Possible Financial Inclusion of Rohingya Refugees in Malaysia



Mohd Safwan Ghazali and Tan Peck Leong

**Abstract** This article provides a critical examination of the current extensive promotion of ‘financial inclusion for refugees’. The current system largely ignores refugees from the marketplace, and they are not very visible in their host country financial service providers, particularly in the Malaysia narrative. This article establishes financial profiling, examining the possible financial inclusion of unbanked refugees, particularly Rohingyas in Malaysia. Hence, this study distributed questionnaires to 306 Rohingya refugees registered in UNHCR. The findings reveal that some refugees are unaware of financial service providers, especially digital financial services such as E-wallet. However, they were fascinated by having access to affordable and suitable financial services. The paper further explores the possible financial and economic impact of extending financial services to unbanked refugees. This study is amongst the pioneer in Malaysia, exploring challenges in the financial inclusion of refugees. The results are relevant to governments, financial regulators, and central banks to structure the right interventions to counter the challenges of extending financial services to this group.

**Keywords** Refugees · Rohingyas · Financial inclusion

## 1 Introduction

Over the past century, there has been a tremendous increase of forcibly displaced persons in the world. At the end of 2020, 82.4 million people were forced to flee their homes, compared to 33.9 million in 1997. Despite the restriction of the COVID-19 pandemic, this number is expected to rise significantly over the next few decades and ‘grow’ more permanent refugees in non-refugee convention countries like Malaysia

---

M. S. Ghazali (✉)

Faculty of Entrepreneurship and Business, Universiti Malaysia Kelantan, Kota Bharu, Malaysia  
e-mail: [safwan.g@umk.edu.my](mailto:safwan.g@umk.edu.my)

T. P. Leong

Arshad Ayub Graduate Business School, Universiti Teknologi Mara, Selangor, Malaysia  
e-mail: [tanpe325@salam.uitm.edu.my](mailto:tanpe325@salam.uitm.edu.my)

(Ghazali and Tan 2021). Since the refugees come to the host country due to war, violence, or cruel treatment that forces them to flee from their original homelands, they do not have valid identification cards, i.e., birth certificates or passports, to prove their identity. The unavailability of valid documents causes the refugees to have no access to many areas, unlike other human beings such as finance, education, health, etc. The refugees who opt for Malaysia as their host country will not be granted legal rights or entitlement. They are not recognized legally since Malaysia did not sign the 1951 Refugee Convention and its protocol 1967.

The major problem of the refugees has no access to finance, which is very important to other people as it allows an individual to have access to money for daily needs or in the event of an emergency. The refugees won't enjoy financial rights like other Malaysian citizens since Malaysia's banks require any individual who wishes to open a bank account to have a valid identification card as proof of their identity. Hence, the inability of the refugees to open a bank account, also known as unbanked, has limited their rights to save, access to loans for opening business, unable to access immediate cash on emergency, remittance, and conduct an everyday financial transaction in the Financial Service Providers (FSPs). Other than having no valid identification to open a bank account, the bank also assumes that these refugees are temporary users. They are not expected to stay in their host countries within an extended period. Still, in reality, there are many refugees stuck in protracted situations for five years and more due to the legal limbo or restrictions in their host countries (Dhawan 2018).

From the refugee's perspectives, they are rarely familiar with local FSPs. Most refugees may have a low level of financial education, and others may prefer alternative (informal) financial service providers that they know and trust. Refugees may be concerned about providing their personal information from authorities because of distrust or poor experiences from home. Refugee populations rarely initiate contact with host country FSPs because many assume they will not be eligible customers. Besides, expect discrimination due to past experiences or simply because they do not speak the host country's language confidently and do not believe FSPs have interpreters. This lack of contact, information, and familiarity with refugees has left most FSPs to make decisions based on minimal information and common myths, notably that refugees are a 'very high risk' market segment. In short, FSPs in Malaysia are unfamiliar with the potential financial market related to refugee populations and are uninformed about the benefits of extending their financial services to this group.

## ***1.1 The Refugees in Malaysia***

Malaysia's economic expansion and financial stability have attracted foreign workers and refugees an opportunity to seek a job and income-generating activities to fulfill their basic needs and improve economic well-being (ILMIA 2020). Besides, Malaysia is also one of the countries that will never discriminate against anyone based on religious practice due to the existence of diverse races in Malaysia living together in harmony. Although refugees are considered illegal immigrants under the

Immigrant Law in Malaysia, refugees are permitted to work, access public health care, and get an education (Wake and Cheung 2016). Moreover, UNHCR that works as a humanitarian agency have provide protection and prospects for settlement either back to home or third countries for the refugees who choose Malaysia as their host country.

As of July 2021, there were 179,450 refugees and asylum seekers registered in Malaysia. These refugees are from Myanmar (154,860), followed by those from Pakistan (6,640), Yemenis (3,690), Syrians (3,270), Somalis (3,240), Afghans (2,610), Sri Lankans (1,680), Iraqis (1,200), Palestinians (760) and others (UNHCR 2021). Like most Southeast Asia counties, Malaysia did not sign the UN Refugee Convention 1951 or 1967 protocols. Hence, they do not accord refugees legal rights to build homes in receiving countries (AFI 2017). Moreover, the alien title of the refugees causes them to have no entitlement for the minimum wage rate imposed by the Malaysian authority. Their employees pay the refugees at any amount at their desired rate. Hence, the refugees are stimulating the labor market in Malaysia since most employees prefer to hire these refugees for unskilled jobs as they are inexpensive and did not tie to the local stigma that Malaysian shun away for working in the low-paid and unskilled jobs. According to UNHCR, most of the refugees in Malaysia are employed in the food and beverage, construction, automotive, and electronics sectors. This indicates that refugees are also an asset to the Malaysian labor force and national income. Although Malaysia did not sign the UN Refugees Convention, the refugees are still assisted on the ground of humanity. The refugees will only be recognized if they are registered with UNHCR before resettlement.

However, the UNHCR card recognition does not grant any financial inclusion rights to the refugees, especially in the banking industry (Daim 2015). This exclusion challenges the refugees because access to financial rights is considered a basic need for saving, accessing loans to increase personal capital, remittance to original countries, etc. Thus, this study explores multi-insights for these refugees to ease them for financial inclusion like an average person should enjoy.

## ***1.2 The Financial Services Industry in Malaysia***

The financial system in Malaysia comprises two components which are the financial intermediaries and the financial market. The financial system was established to promote the financial inclusion system and strengthen the linkage between the financial industry and Malaysia's economy. In Malaysia, the banking sectors are classified into the Islamic and conventional financial systems, where both systems co-exist and operate in parallel ways. Meanwhile, Non-Bank Financial Intermediaries (NBFIs) complement the banking system in mobilizing savings and meeting the requirements of specific sectors. These banking institutions play a vital role in developing the capital market and providing social security.



Like any other industries, the advancement of technology impacts the financial services sector as the most financial institution has ventured into digitizing and practicing promoting its product and services online to remain relevant and competitive in the market (Hays Malaysia 2019) stated that more than 50% of the population is convinced that Malaysia's economy is progressing alongside the digital era, which leads all companies to venture into digital services such as providing a secure and easy online transaction to cater to the customer's needs. Subsequently, the rapid development affects every aspect of the country's banking & financial services sector, from product development to contact centers and compliance departments.

In the meantime, adoption rates of e-wallets are fast-growing. Although it is still in its infancy stage, many initiatives have already been launched to educate the masses, such as traditional marketing and in-app incentives (Tan 2018). On the other hand, the emergence of e-wallet contributes towards the further development of e-commerce while bringing the payment system forward with a more secure and faster payment process. Furthermore, the digitization of money correlates with the purpose of Bank Negara's Financial Sector Blueprint 2011–2020, which is to promote greater economic efficiency through the implementation of online payment. In brief, the performance of an e-wallet as a payment service in Malaysia supports the government and global effort to move ahead towards a cashless nation. Although the Malaysian mobile banking industry is growing by introducing many features, the adoption rate is still at the infant stage compared to China. Thus, if the refugees are using the mobile banking industry, the growth of the e-wallet users can exponentially grow, giving the providers opportunities to gain more to compete in the industry. The pressure lies on the Financial Service Providers (FSPs) of these mobile banking industries to offer products or services tailored to the needs of the refugees. Furthermore, the remittance made to their original countries from Malaysia will stimulate the free flow of trade in terms of currency exchange, increasing the profitability of the stakeholders involved.

### ***1.3 Increase Permanent Refugees in Malaysia: The Long-Term Dilemma***

Initially, Malaysia perceives refugees to be short-term guests, parallel with humanising agenda. However, many of these refugees cannot return homes or relocate to a third country over the years. The current situation would take 20 to 30 years, or they are likely to stay here permanently (since Malaysian policy does not view refugees' responsibility). Malaysian don't have comprehensive refugee policies, which can lead to long-term economic and social threats as well as lead over-dependence on lower-skilled- undocumented migrants. UNHCR has recorded substantial growth of 82.4 million people worldwide, and they have been forced to fly off from their homes in 2020 compared to 43.3 million in 2009 (UNHCR 2021). Malaysia currently hosts over 179,450 refugees and asylum-seekers, with more than 102,960 Rohingyas and

70% reside in urban areas (Ab. Wahab 2018). These Rohingya populations mostly come to Malaysia due to persecution and discrimination by Myanmar.

While waiting for the resettlement, the refugees will need to carry on their livelihood in the host countries for survival and fulfilling their basic human needs. Still, without valid legal travel documentation, refugee's access to jobs, education, goods, and services is limited or inaccessible. Despite not having the legal right to work, most Rohingya refugees already engaged in informal sectors such as construction, cleaning, food, and beverage industries (Nungsari et al. 2020). Adding to the above challenges, the refugees have no access to the formal financial services necessary to live and perform daily activities. Proper financial assistance may help these refugees with financial literacy, saving money for education or emergency motive, and making remittances to their countries without getting scammed by any agent or merchant. Asli Demirgüç-Kunt et al. (2018) argued that the financial system is vital to provide savings, credit, payment, and risk management to every individual. Without financial service, unfortunate people like refugees must rely on their limited savings to survive and invest in their human capital or become entrepreneurs. As mentioned above, the refugees have no bank accounts because of no legal documentation available. The refugees also may have issues understanding how the bank works due to low educational attainment, which results in them opting for informal methods of financial services.

Since the refugees will have difficulties opening or entering the bank industry due to the inevitable legalities, this article seeks to identify alternative methods to enable the refugee to perform financial transactions. Suitable with current initiatives by the government that aims to become a seamless society through the digitalization economy, this will provide digital companies, specifically in the e-wallet industry, as one of the ways for the refugees to perform financial transactions. Therefore, a study on the refugees' financial profile is vital to provide information on the Rohingya refugees financially, which is based on a humanitarian perspective. It is also hoped to provide digital companies opportunities to untapped the potential financial market related to refugee populations and accelerated the benefits of extending their financial services to this group and contributing to fiscal revenue for the receiving countries.

## 2 Literature Review

### 2.1 *Unpacking the Concept of Financial Inclusion*

Existing literature has broadly defined financial inclusion. Accordingly Amidžić et al. (2014) stated that financial inclusion is defined broadly as an economic state where individuals and firms are not denied essential financial services. Additionally, Singh (2017) in his study indicated that financial inclusion is expected to provide universal access to a wide range of financial services at a reasonable cost where the financial services are not restricted to only offering banking products but also other services

such as equity and insurance products. Thus, financial inclusion can be defined as the process of ensuring access to appropriate financial products and services needed by all sections of the society in general and vulnerable groups such as poor and low-income groups in particular at an affordable cost fairly and transparently.

Additionally, The World Bank (2021) suggests that financial inclusion act as the key enablers to reduce poverty while enhancing the prosperity within the communities by enabling people to manage their economic lives with more stability and towards a better life. Significantly, Sakariya and Ruparel (2018) findings show that financial inclusion plays a crucial role in building a solid foundation of a country's economic infrastructure, facilitating the nation's growth and development. While Mahajan and Kalel (2013) argue that having access to safe, easy, and affordable finance by poor and vulnerable groups, disadvantages, and the legging sector is a pre-condition to accelerate the development of a country and reduce the disparities of income well as the rate of poverty amongst societies.

Generally, financial inclusion helps empower the underprivileged and deprived segment of society, such as the poor, like refugees and indigenous people, by creating awareness and self-sufficiency for a better life and simultaneously building a sustainable economy and social development. Nevertheless, according to Ismail (2021) approximately 2 billion people around the world still have the issues of lack access to an account even to the most basic financial transactions, such as making deposits and receiving payments. Hence, in fostering financial inclusion, technology plays a vital role by bringing together financial services and mobile technology, which could help the unbanked population and refugees who don't meet the criteria of opening bank accounts in their host country.

Currently, refugees have to pay extortionately high fees for sending and receiving money, limiting their ability to settle appropriately and achieve financial stability. Through the technology innovation, a broader range of financial inclusion can be endorsed, such as digitalizing the financial services according to the global trend such as using smartphones as services like banks, which enables the undeserved population to send and receive money at minimal costs. Thus, on the whole, financial inclusion can bring the unbanked masses into the formal banking system, channelize their savings, stoke their entrepreneurial ambitions by making available credit and thus give a fillip to the economy.

## ***2.2 Financial Inclusion: A Panacea for Refugee Self Reliance?***

Due to limited access to previous studies on financial inclusion for refugees, the related studies below will be viewed in financial inclusion generally also benefits from the remittance of migrants. According to Lusardi et al. (2010) not having a bank account will negatively impact difficulties in managing liquidity, the high cost imposed based on money orders, or cheques coming from cashing services.

Moreover, Mehrotra and Yetman (2015) indicated that financial inclusion enables a household to save and borrow benefits for consumption. While, Allen et al. (2016) found that financial inclusion can lower banking costs, have more excellent proximity to financial intermediaries, better institutions such as more substantial legal rights, and more politically stable environments.

On the same note, financial inclusion can bring a positive impact in terms of improving people's lives. Many studies indicated that more financial products be introduced to the excluded person to enhance financial inclusion. Based on the study conducted by Bruhn and Love (2014) there is a significant correlation between financial inclusion and growth with poverty alleviation. The study also added that financial inclusion helps low-income individuals enhance their economic development by surviving through venturing into informal business. Financial inclusion also helps build the country's economy by improving its growth and stability, increasing citizens' quality of life, and reducing the rich-poor gap in the country (Damodaran 2013). The further study conducted by Zins and Weill (2016) also agreed that financial inclusion might reduce the risk of poverty and enhance economic growth, which requires an in-depth understanding of the determinant of financial inclusion in Africa. However, there is a lack of extensive review of related literature and empirical observations on the financial inclusion of refugees. Importantly, this study believes that we must highlight the benefits of financial literacy for refugees and their families to improve their conditions, which could help them channel their income to any financial products to benefit both individual households and the economy.

However, the risk of giving financial inclusion to refugees also needs to consider. One of the risks in providing access to financial services to the refugees is the lack of data and information. Data is critical to the private and public sectors to ensure effective policy formulation when addressing the needs and gaps in the market. Financial Service Providers (FSPs) can improve their security, evidence-based policymaking and make an appropriate regulatory environment with this data. If FSPs didn't carefully identify the refugees, it might lead to money laundering and terrorist financing risks. Refugees are in a very high-risk market segment because they are in the country temporarily and are too poor to repay loans. Refugees frequently shift their residences due to the high cost of living, safety concerns, return, and deportation. When they are often moving around, the duration of staying in one place will be short. So, even if they get access to financial services, they will only use them for a short time (AFI 2017). Besides that, when the refugees can access financial assistance in that country, citizens need to share some part of their services. Consequently, it would create an opposing view from the locals about refugee presence, particularly reducing the local opportunities and increased pressure on public finances (UNHCR 2017).

### 3 Methodology

This study adopts a face-to-face, semi-structured questionnaire via purposive sampling technique to determine respondents with the assistance of the UNHCR

officer at UNHCR headquarters, Kuala Lumpur. The closed-ended questions were given to the refugees through oral interviews and administered personally with enumerators who can interact in the Rohingya language. The questionnaires were divided into seven sections: profiling, employment profile, financial usage, unbanked, saving behavior, borrowing behavior, and remittance behavior to comprehensively discuss the promotion of financial inclusion of refugees. The survey questionnaire was distributed to the Rohingya refugees applying for registration or renewal of the UNHCR Card at the UNHCR office, Kuala Lumpur. A survey of 360 Rohingya individuals who self-identified as having worked experiences in the past year at UNHCR headquarters in Kuala Lumpur in February 2020.

## 4 Results

### 4.1 Respondents Background

As shown in Table 1, males represent most of the respondents with 98.0%, while the rest of the 2.0% are female. The majority of the respondents presented 63.4% are in the age group 21–30 years old, followed by the age group of 31–40 years, with 51 respondents representing 16.5% of the study. Meanwhile, the minority of the respondents are from 41 and above, with 21 or 6.9% of respondents. This statistic signifies that Rohingya refugees in Malaysia are young, and employment is crucial for them. Despite the youthful profile of our sample, 47.7% of them are married, while 52.3% are still single. Our result also indicated that 92.8% of the respondents record the highest number of time lengths living here, between 1 to 10 years, in Malaysia. In contrast, approximately 0.9% of the respondents lived in Malaysia for two or more decades.

Additionally, from a similar table, it can be seen that the majority of the respondents did not receive any education either in their hometown or Malaysia. In light of their participation in the local labour market, respondents are demarcated into five work sectors, with the majority are working in services (55.2%), followed by the construction sector (35.3%), retail (6.9%), plantation (1.9%), and manufacturing (0.7%). Refugees face all sorts of hurdles due to their legal status, compounded with limited language capacity and skills. However, our result indicated that they could still find a job, particularly in the form of low-skilled employment, which shunned local participation. Consequently, many respondents who were currently residing in Malaysia were employed as construction workers and cleaners. Looking into monthly income, we find that most of the respondents (89.2%) were earned an equivalent or exceed the minimum wage. These findings also reveal that Rohingya refugees were assimilated well into Malaysia's economy.

**Table 1** Respondents background

Characteristic	Measurement	Number (n)	Per centage (%)
Gender	Male	300	98.0
	Female	6	2.0
Age	20 and below	40	13.1
	21 to 30	194	63.4
	31 to 40	51	16.5
	41 and above	21	6.9
Marital status	Single	160	52.3
	Married	146	47.7
Length of stay	10 and below	284	92.8
	11 to 20	19	6.2
	21 and above	3	0.9
Education level	No school	180	58.8
	Religious school	20	6.5
	Incomplete primary	34	11.1
	Complete primary	49	16.0
	Incomplete high school	6	2.0
	Complete high school	13	4.2
	Tertiary education	4	1.3
Employment sector	Construction	108	35.3
	Plantation	6	1.9
	Services	169	55.2
	Manufacturing	2	0.7
	Retail	21	6.9
Monthly income	RM1000 and below	33	10.8
	RM1001—1500	203	66.3
	RM1501—2000	51	16.7
	RM2001—above	18	5.9
	Total	306	100.0

## 4.2 Financial Profiling of Rohingya Refugees

While financial assistance can be an essential indicator in promoting self-reliance, Table 2 shows that our sample is rarely used or far away from familiar with the financial service provider available in the local market. Consequently, most respondents are paid directly in cash, with 97.4% by their employer, while only 2.9% received their payment through a bank account. Only one respondent, who represented 0.3%, has been paid using the E-wallet application. These data indicate that most of the

**Table 2** Financial profiling of Rohingya refugees

Characteristic	Measurement	Number (n)	Percentage (%)
Methods of salaries payment	Bank	9	2.9
	Cash	296	97.4
	E- wallet	1	0.3
Preference for banking facilities	Bank	236	77.1
	Unbanked	70	22.9
Reasons to prefer unbanked facilities	Too far	15	21
	Too expensive	20	29
	Incomplete documentations	44	63
	Don't trust bank	9	2.9
	Don't have enough money	45	64
	Other family members have bank account	2	3
	Useless	39	56
Methods of payments for daily transaction	Cash	303	99
	Bank	1	0.3
	Mobile internet	1	0.3
	E-wallet	1	0.3
Methods of payments for bill transaction	Cash	300	98
	Bank	4	1.3
	Mobile internet	1	0.3
	Merchants/Agents	2	0.7
Reason for savings	Precautions	49	61
	Remittance	36	45
	Daily transactions	33	41
	Education	10	13
	Religious/special occasion	4	5
	Others	33	42
	Retail	21	6.9
Methods of saving	Bank/formal institution	12	15
	Informal	67	85
Borrowing behaviour	Yes	129	42
	No	177	58
Source of borrowing	Family and friends	113	87.6
	Third party/informal group	207	25.8
Reason for borrowing	Living expenses	60	46.5
	Medical expenses	59	45.7

(continued)

**Table 2** (continued)

Characteristic	Measurement	Number (n)	Percentage (%)
	Emergency	52	40.3
	Remittance	29	22.5
	Loan repayment	6	4.7
	Others	10	7.8
Remittance	Yes	278	90.8
	No	28	9.2
Methods of remittance	Informal agent	193	69.4
	Money transfer service	98	35.3
Purpose of remittance	Household expenses	268	95.7
	Emergency/medical	192	69.1
	Debt/loan repayment	14	5
	Investment	3	1.1
	Others	30	10.4
Remittance frequency	Every month	204	73.4
	Every 2 months	38	13.7
	Every 3 months	17	6.1
	Every 4 to 6 months	8	2.9
	Every 7 to 12 months	4	1.4
	On special occasion/request	7	2.4

respondents are still unaware of the financial services in Malaysia, although some of them have been living here for an extended period.

#### 4.2.1 Preference for Banking Facilities

Looking into a preference for banking facilities, although most of them are not occupied with adequate knowledge on financial, 77.1% of the respondents were inclined to use banks for their daily transactions. Out of 306 respondents, 236 of them want to open a bank account if they have the opportunity, while only 70 respondents (22.9%) don't want to use or open a bank account even if they have the chance.

Regarding those who prefer the unbanked services, 64% of them indicated that they don't have enough money to use a financial institution, so they still prefer to use unbanked even when they can open a bank account. Not surprisingly, 63% reveal a lack of documentation is another reason to choose unbanked. While 56% think they don't need formal financial service because most of them are comfortable using cash when doing transactions. The following top reason is that the financial assistance is too expensive (29%), the financial facilities are too far (21%), and having trust issues



with the financial institution indicates 2.9%. The remaining respondents (3%) stated using someone else in the family who already has a bank account for not prefer using the bank facilities.

#### **4.2.2 Methods of Payments for Daily Transaction and Bill Payment**

Since most of the respondents are not familiar (almost no chance) with using financial facilities in Malaysia, 99% of the respondents, which indicates 303 out of 306 respondents, use cash when paying for their daily transactions, as outlined in Table 2. While only three respondents (having a bank account) indicated, they have used a credit card or bank when purchasing daily transactions. Then, only one respondent stated uses the mobile internet and E-wallet method when purchasing for everyday transactions.

Similarly, for a bill payment transaction, almost all respondents prefer to pay using cash rather than the other methods. However, compared to daily transactions, some use mobile internet and merchants or agents to pay for their bills. That 0.3 and 0.7% indicates 1 or 2 people using that type of method. While for E-wallet, none of the respondents have been using this application when making any bill payment. The lack of information on how to use and register the E-wallet services is also one of the reasons why the respondents are still hesitant to use these apps.

#### **4.2.3 Saving Behaviour**

Next, 79 out of 306 respondents for saving behavior profiling reveals they could keep their money for saving purposes. The reason that dominates the highest percentage is for precautions motive with 61%. In case of emergency, they make the savings if suddenly they are short of money due to precarious employment and other uncertainties in life as refugees in Malaysia. They were followed by remittance motive (45%), saving for future daily transactions needs (41%), and other reasons outlined in Table 2. We would expect their explanation of savings is primarily because of emergencies or for them to use in their daily lives, and surprisingly they also have quite a lot of savings. Accordingly, if the financial regulators can provide opportunities for them to open bank accounts, it can promote self-reliance, extend consumption, and drive our economy to grow. Next, from 79 respondents who can be saving their money, only 12 of them keep in the bank or formal financial institution, whether it is on their own or another person's bank accounts. The remaining 85% or 67 respondents save their money using informal groups, agents, "kutu" or people outside the family. Because of this, the Rohingya tend to carry large amounts of cash with them. Consequently, many of them were exposed to robberies and exploitation involving rather large sums of cash from the authorities.

Besides, some respondents also reveal that they keep their money at the shop owner among their communities, and as compensation, the owner can use the money for their business purposes. However, they would not get any return for the money

they render. These results can be interpreted as the percentage of the refugees that used informal savings groups is higher than banks or formal financial institutions because they have no access to the banks unless the employers make the official request through the UNHCR office. Nevertheless, it is not easy for them to open bank accounts since it requires many procedures and documentation. So, this study believes that if we can extend the financial service with the conditions that they need to have proof of identity as such a UNHCR card, many more refugees can deposit their money into formal financial institutions, which benefits refugees also can stimulate our financial market.

#### **4.2.4 Borrowing Behaviour**

About borrowing behaviour, 129 people or about 42% of respondents have made borrowing in the past 12 months, as outlined in Table 2. Since the refugees are tied with many regulations about opening a bank account, it limits their ability to manage their finances properly. Thus, in case of emergency, refugees may need to make some borrowing from other informal parties to fulfill their obligations. The table shows that 113 respondents state family and friends as their primary lending source, indicating 87.6%. More refugees opt for borrowing from relatives and friends may be on the ground of trust and privacy. Apart from that, these classes for the source of borrowing may not even impose any interest cost to the Rohingya refugees when they opt for borrowing from informal groups or banks. Next, we take a closer look at their reason for borrowing. Most Rohingya refugees are making loans and credit borrowing to cover their living expenses (46.5%), followed by 45.7% of them borrowing money for medical expenses. They had a nuclear family without subsidies or welfare benefits since we are non-signatory to the Refugees Convention, which has to make their presence more challenging. Even with the generous support provided through government-sponsored healthcare institutions, it is essential to note that many refugees face difficulties accessing healthcare due to its costs.

#### **4.2.5 Remittance Behaviour**

From 278 respondents who made remittances abroad, the total remittance transfers by Rohingyas over the past 12 months of the survey date accounted for about RM 1,788,149, with a mean yearly value of RM 6,432.19 and an average monthly remit of about RM 536.00. This indicates the potential of the Rohingya refugees to be included in Malaysian FSPs. The money flow in and out generated may help boost the Malaysian economy by stimulating money exchange between two countries in fulfilling the supply and demand of the services rendered.

About the remittance methods as depicted in Table 2, most of them (69.4%) are making remittances through an agent or someone they know and trust. This type of remittance will be made by the third person who will go through exchange houses and other formal or informal channels. While remaining 98 people are making

remittances through money transfer services which account for (35.3%) specifically cash, informal non-bank transfer services that help send money to their relatives in the country.

### **4.3 Discussion**

Based on first stage findings, our result provides the financial profiling of Malaysia's Rohingya refugees' populations. The highest percentage of respondents, with about 77.1%, prefer banking facilities had they been given a chance to be included financially. Being included financially would allow the refugees to do basic financial activities such as savings, making remittances, credit borrowing, etc. The refugees who opt for Malaysia for their host country are limited to formal financial institutions due to laws and regulations about opening bank accounts. Consequently, it can be seen that a vast number of refugees (85%) are saving their money on informal savings groups, which majorly for a precautionary motive. Notable, financial inclusion is proven to foster the refugees to have better financial management if they can have access to the bank. From a macro perspective, it also can help the economic development of the country. While from a micro view, refugees are also demanding financial services like anyone else. Despite the strict rules and regulations that imposed barriers to these refugees, the present article has analyzed the potential of providing other mediums that may allow them to enjoy financial services- E-wallet.

The refugee basically may enjoy this feature in their smartphone just by having a regular sim card attached to their phone. E-wallet applications may ask for phone numbers to allow these refugees to be registered to the application. The flexibility of this feature grants opportunities for Rohingya refugees to be included financially, even if it is made informally. As for E-wallet applications requiring these refugees to have valid documentation as to their proof of identity. This study suggested that FSPs and central bank regulators be more lenient and flexible since they will stay here for a long time or permanently. The E-wallet companies may expand the curve of leniency by requiring only UNHCR cards to allow them to open an E-wallet account. Moreover, E-wallet companies may offer services limited to spending, savings, and remittances for these refugees to avoid criminality issues while offering access financially to the Rohingya refugees.

Apart from that, the need to target refugees with financial education is essential. It has been found that most Rohingya refugees have low literacy skills, such as difficulties with reading, writing skills and also being unable to speak and understand the local language. Therefore, the use of alternative methods, instead of the traditionally used written materials, could be particularly useful in increasing the financial literacy of refugees. Thus, the use of digital tools could be used to explore the benefits of social networks to spread the financial literacy messaging towards the refugees. Social networks, such as Facebook, Instagram, WhatsApp, and other

popular messaging apps, can be used for online consultations, sharing extra information related to the digital services and applications offers in the country. Hence, it may help reach a broader communication on financial literacy towards these communities.

Next, despite the growing number of Rohingya refugees breathing in Malaysia, there is an inadequate study on the possible positive impact of extending financial assistance to the economic and financial market. At the outset, this study is consistent with previous findings that most Rohingya are already engaged in informal employment (Ghazali and Tan 2021; Nungsari et al. 2020; Nungsari and Flanders 2018; Todd et al. 2019) Nothing surprises; with insufficient welfare or regular aid from the government, UNHCR, or other NGOs, they must cover the basic needs. Hence, this study believes that granting refugees the right to work for the short term while they were here will benefit all. Yet, the current situation would make the situation worse for all parties. As noted in Table 1, more than 90% of respondents work informally in various sectors, with 88% earning equivalent or above the current minimum wage. This situation indicates two consequences. First, with or without legal access, these refugees will continue to work, particularly in low-skilled, exposing them to exploitation and hinder the country's transition to becoming an automation nation. Second, waste of resources since some Rohingyas earned pretty well, yet we are not counting their contribution in the local economic and financial ecosystem. Thus, the legal right would impact refugees' incomes, but more importantly, this factor could expand the Malaysian financial market and infinite profits to FSPs. If we extend the financial inclusion to the Rohingya refugees, several possible impacts could occur.

### 4.3.1 Impact on Consumer Spending and Financial Market

As mentioned earlier, granting refugees the right to work would increase refugee income. The employment opportunities should not be limited to 3D sectors but with better job matching and ability perhaps. Although refugees, particularly Rohingyas, are illiterate, some obtained a good education and have skills and past working experience that can be utilized in the receiving countries. Consequently, better income and decent jobs would increase their economic self-sufficiency and allow them to purchase more through various financial platforms and applications. The visibility of refugees' participation in financial activities would stimulate the local market's demand and supply, which definitely contribute to Malaysian GDP.

Moreover, suppose Government can allow refugees to start their businesses with comprehensive guidelines. In that case, this study believes it would create new job opportunities for the refugees and locals. At the same time, we can widen the impact by extending the financial services to either public or private financing. Although there are legal and documentation risks in developing financial assistance to the refugees, this study consistent with other countries like Peru, the Philippines, Uganda, Kenya, and Columbia, which has modified their legislation and financial regulations to integrate refugees into their financial market (UNHCR 2017).

### 4.3.2 Impact on Financial Service Providers (FSPs)

There are about 100,000 Rohingya refugees registered in Malaysia, with the majority under the working-age population, youth, and compounded with basic digital skills; there remains a potential financial market for FSPs. Since we do not have comprehensive data on refugees' labor force participation rate, we assume that 50% of the total Rohingya refugees under working age is employed (50,000). To demonstrate the financial impact, we can do a simple calculation. For example, in terms of savings, if they can save RM200 per month multiply by 50,000 (number of working Rohingya refugees), and multiply by 12 months, savings deposits, we can get about RM120,000,000 injection into the financial market. Likewise, with an average monthly remit of about RM 536.00 (using our data). Adopting the same methodology, remittance circulation is about RM 321,600,000 per annum. Thus, if FSPs can extending their services formally and inclusive, they can benefit from some percentage and at the same time provide better service, convenience, secure and at a low cost to the refugees, compared to the informal channel they used currently. Similarly, if FSPs can expand their financing services to the group of refugees, it also can generate new potential profit through the interest charge. However, this is a relatively modest calculation, reflecting the financial impact we estimate for Rohingya refugees and exploring and offering other possible financial inclusion.

## 5 Conclusion

The current research aims to address the financial inclusion among the refugee population, particularly with increasing 'permanent' Refugees from Rohingyas in Malaysia. A quantitative approach via face-to-face survey with Rohingya refugees and possible financial impact was used to explore the risk and benefit of extending Financial Services to the Refugee's consumer segment. Drawing on article findings, if the deposits, financing, and remittance of an amount such as this counted formally, it would translate into high profit to FSPs. Consequently, generating new jobs involved with financial services, increases refugee incomes, spending, and productivity, resulting in higher GDP contribution. Furthermore, as the initial step, enhanced E-wallet application to the refugees may be suitable financial tools to serve the refugees who are part of the economy for an extended period. However, the study found the four significant challenges that FSPs have to deal with: higher risk profiles, proof of identity, trust issues, and fragile consumer segment. Thus, it will be interesting to engage with Financial Service Providers (FPSs) and other financial regulators from various agencies to gauge the challenges and benefits of extending financial assistance to the refugees for future studies. Besides, the need to conduct a more robust analysis as such National Risk Assessment (NRA) is vital to ensure the decision made will benefit all the stakeholders. Finally, this study concludes that financial inclusion it's matter to everyone, including Rohingyas. Yet, suppose we are inclined to exclude refugees from the financial services, they will continue to use

the informal means, which exacerbated refugees and increased pressure on public finances.

**Acknowledgements** The authors would like to thank the Ministry of Higher Education Malaysia for the financial support through the Fundamental Research Grant Scheme (FRGS), File No: FRGS/1/2019/SS08/UITM/02/7 and the Research Management Centre, Institute of Research Management & Innovation (IRMI) Universiti Teknologi MARA, Shah Alam for managing the fund.

## References

- Ab. Wahab, A.: Rethinking refugees as economically isolated: the Rohingyas participation in informal economy in Klang Valley, Malaysia. *JAS J. ASEAN Stud.* **5**(2), 102 (2018). <https://doi.org/10.21512/jas.v5i2.3664>
- Allen, F., Demirgüç-Kunt, A., Klapper, L., Martinez Peria, M.S.: The foundations of financial inclusion: understanding ownership and use of formal accounts. *J. Financial Intermed.* **27**(2016), 1–30 (2016). <https://doi.org/10.1016/j.jfi.2015.12.003>
- Alliance for Financial Inclusion (AFI): Financial Inclusion of Forcibly Displaced Persons: Perspectives of Financial Regulators, August 2017
- Amidžić, G., Massara, A., Mialou, A.: Assessing countries financial inclusion standing - a new composite index. In: *IMF Working Papers*, vol. 14, Issue 36 (2014). <https://doi.org/10.5089/9781475569681.001>
- Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S., Hess, J.: *The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution* (2018)
- Bruhn, M., Love, I.: The real impact of improved access to finance: evidence from Mexico. *J. Finan.* **69**(3), 1347–1376 (2014). <https://doi.org/10.1111/jofi.12091>
- Damodaran, A.: Equity risk premiums (ERP): determinants, estimation and implications. *SSRN Electron. J.* **18**(5), 289–370 (2013). <https://doi.org/10.1111/j.1468-0416.2009.00151.x>
- Dhawan, S.M.: Financial Inclusion of Germany's Refugees: Current Situation and Road Ahead, October 2018. [www.european-microfinance.org](http://www.european-microfinance.org)
- Ghazali, M.S., Tan, P.: *The Economic profiling, work performance and economic leakage of Rohingya refugees and Indonesian migrant workers in Malaysia* (Issue Doctoral thesis). Institute of Graduates Studies Universiti Teknologi MARA (2021)
- Hays Malaysia: *The Inside Story of IT in Malaysia* (2019). [https://www.hays.com.my/theinside-story/hays\\_1999269](https://www.hays.com.my/theinside-story/hays_1999269)
- ILMIA: *The socio-economic impact from employment of low-skilled foreign Workers and International Internship Programme in Malaysia* (2020)
- Ismail, N.: *Developments in Fintech could help migrants and refugees through financial inclusion*. Information age (2021)
- Lusardi, A., Mitchell, O.S., Curto, V.: Financial literacy among the young. *J. Consum. Aff.* **44**(2), 358–380 (2010). <http://www.councilforeconed.org/wp/wp-content/uploads/2011/11/Financial-Literacy-for-Young-Lusardi.pdf>
- Mahajan, S.S., Kalel, N.: An assessment of potential financial inclusion of slum dwellers through business correspondent model. *IUP J. Bank Manag.* **12**(4), 7–15 (2013). <http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=92605528&site=ehost-live>
- Mehrotra, A., Yetman, J.: Financial inclusion – issues for central banks. *BIS Q. Rev.* **4**(5), 83–96 (2015). <https://doi.org/10.1186/gb-2003-4-5-317>

- Nungsari, M., Flanders, S.: A Comprehensive Study of Rohingya Construction Workers in Peninsular Malaysia and Recommendations for a Future Work Pilot Program (2018). <http://www.melatinungsari.com/uploads/2/3/6/3/23631450/finalreport-mnsf.pdf>
- Nungsari, M., Flanders, S., Chuah, H.Y.: Poverty and precarious employment: the case of Rohingya refugee construction workers in Peninsular Malaysia. *Humanit. Soc. Sci. Commun.* **7**(1), 1–11 (2020). <https://doi.org/10.1057/s41599-020-00606-8>
- Daim, N.: Msia will not sign convention on refugees. *New Straits Times*, 8–9 (2015). <https://www.nst.com.my/news/2015/11/msia-will-not-sign-convention-refugees>
- Sakariya, S.M., Ruparel, N.: Evaluation of financial inclusion strategies of banks in India: reflections from literature. *Towards Excell. Index. Refereed J. High. Educ.* **10**(Special issue for ICGS-2018), 52–64 (2018). [www.ascgujarat.org](http://www.ascgujarat.org)
- Singh, N.: Financial inclusion: concepts, issues and policies for India. In: *The International Growth Centre*, July 2017. <https://doi.org/10.2139/ssrn.3307903>
- Tan, Y.: E-wallet race heats up. *Thestar.Com*, 1–12 (2018). <https://www.thestar.com.my/business/business-news/2018/03/17/ewallet-race-heats-up/>
- Todd, L., Amirullah, A., Shin, W.Y.: *The Economic Impact of Granting Refugees in Malaysia the Right to Work* (2019). [www.ideas.org.my](http://www.ideas.org.my)
- UNHCR: *Serving Refugee Populations : The Next Financial Inclusion Frontier*, March 2017. <https://sptf.info/images/Guidelines-for-FSPs-on-serving-refugee-populations-March2017.pdf>
- UNHCR: *Global trends: forced displacement in 2020*. In: UNHCR (2021)
- Wake, C., Cheung, T.: Livelihood strategies of Rohingya refugees in Malaysia “We want to live in dignity” (2016). <http://www.odi.org/hpg>
- Zins, A., Weill, L.: The determinants of financial inclusion in Africa. *Rev. Dev. Finance* **6**(1), 46–57 (2016). <https://doi.org/10.1016/j.rdf.2016.05.001>

# Bibliometric Analysis of Optimization in Sports from 2011 to 2020 Using Scopus Database



Nurul Izyan Mat Daud, Fatihah Mohd, Noorshella Che Nawi, Mohd Asrul Hery Ibrahim, Wai Hong Tan, Zaifilla Farrina Zainuddin, and Nurul Hajar Mohd Yusoff

**Abstract** This study intends to conduct a bibliometric analysis in the field of study of optimization in sports by analyzing articles published between 2011 and 2020. In this study, the year's corresponding to the greatest number of articles published, significant journals, highest cited articles, important authors, and most dominant countries were analyzed. The VOSviewer software was implemented for providing a visualization of co-authorship, intercountry co-authorship, and keywords co-occurrences analysis. A total of 344 articles were retrieved from the Scopus database. In conclusion, this study provides the available literature on optimization in sports over the last 10 years.

**Keywords** Sports · Bibliometric analysis · VOSviewer · Co-authorship · Keyword co-occurrence · Optimization

## 1 Introduction

Research on optimization in sports have been studied widely especially in mathematical formulation on sports. The mathematical model is developed by the researchers to optimize the performance in sports. According to Sagir et al. (2019), a model was developed to assign fixtures to the timeslots to maximize the number of supporters

---

N. I. Mat Daud (✉) · F. Mohd · N. Che Nawi · M. A. H. Ibrahim · W. H. Tan  
Faculty of Entrepreneurship and Business, Universiti Malaysia Kelantan, 16100 Kota Bharu, Kelantan, Malaysia  
e-mail: [izyan.md@umk.edu.my](mailto:izyan.md@umk.edu.my)

N. Che Nawi  
Global Entrepreneurship Research Innovation Centre (GERIC), Universiti Malaysia Kelantan, 16100 Kota Bharu, Kelantan, Malaysia

Z. F. Zainuddin  
Universiti Kuala Lumpur Malaysia Italy Design Institute (UniKL MIDI), 56100 Kuala Lumpur, Malaysia

N. H. Mohd Yusoff  
Universiti Kuala Lumpur Malaysian Institute of Industrial Technology (UniKL MITEC), 81750 Masai, Johor, Malaysia



that attend for a sports tournament or league. A mathematical modeling analysis of the performance evolution along the career-span of female swimmers from the initial sports education until the stage of high-level performance was presented (Silva et al. 2007). Five mathematical models at the Olympic Games to predict road events using regressions was used (Marylu Garc Galvan 2018). In addition, (Scarf et al. 2019) analyzed the effect of training on performance in road cycling. An investigation on sports surface with various impact angles and impact intensities by using a two-dimensional mathematical model was determined (Yukawa 2018). (Blaya-Haro et al. 2016) studied a mathematical model in the sport of weightlifting. The study was considered 77 weightlifting athletes. The mathematical study of the vertebral column will allow carrying out a concrete determination of the safety limits in weightlifting by comparing the stress.

Furthermore, various techniques have been used in sports to optimize the performance in sports. A comparison between the sepak kuda and the sepak sila serves technique in sepaktakraw in terms of selected kinematics parameters was analyzed (Usman 2004). Results showed that the sepak kuda serve is more superior to the traditional sepak sila. A study was conducted to determine if the kuda and sila kicking techniques demonstrates the kinetic link theory of sequencing (Sujae et al. 2006). A study on biomechanics of tennis shots with Newton–Euler dynamics of tennis racquets was carried out (Ivančević et al. 2008). By using an inverse dynamics approach, (Zhang 2011) developed a biomechanical model for rugby to measure lower limb joint kinematics and kinetics during kicking. An index in sepaktakraw based on biomechanical parameters between sepaktakraw male elite players in three different positions (feeder, server and spiker) was investigated by Rezaei et al. (2013). The Fuzzy Logic and Dempster-Shafer Theory Approach were applied to kick range of sepaktakraw (Andino Maselena et al. 2016). A study on the effect of biomechanical knowledge, physical condition, and landing technique on ACL injury risk of sepaktakraw athletes was conducted (Abdul Aziz Hakim 2017).

The bibliometric analysis on sport management (Shilbury 2011; Ciomaga 2013), trends and knowledge based in sport and exercise psychology research (Lindahl et al. 2015), sport entrepreneurship field (Huertas González-Serrano et al. 2020; Pellegrini et al. 2020), indoor air quality of environments used for physical exercise and sports practice (Andrade et al. 2017) and sports tourism and sustainability (Jiménez-García et al. 2020) has been conducted by researchers. Therefore, this study is attempts to present the bibliometric analysis on optimization in sports using Scopus database from 2011 to 2020. The aims of this study are to determine the year's corresponding to the greatest number of articles published, significant journals, highest cited articles, most dominant authors, and most dominant countries. Co-authorship, intercountry co-authorship and keyword co-occurrences are visualized by VOSviewer. First, the literature review on the optimization in sports. Next is the methodology of the study. Then, a discussion on the results and findings. Finally, a conclusion, limitation of the study and future research are presented.

## 2 Research Methodology

A bibliometric analysis is implemented to determine the pattern of publications on a specific topic, and to find out publishing tendencies in a particular discipline (Lee and Hew 2017; Bakker et al. 2005). There was the literature that had been studied in bibliographic research (Caputo et al. 2018; López-Fernández et al. 2016) and a systematic literature review with bibliometric analysis (Van Eck and Waltman 2010; Van Eck et al. 2006; Ellegaard and Wallin 2015; Börner et al. 2005).

The articles were generated from the Scopus electronic database. The chosen of this database because it offers a broader range of journals compared with PubMed and Web of Science (Falagas et al. 2007). The data was extracted from Scopus database on August, 15 2021. First, articles that included the terms ‘optimization’ and ‘sports’ in titles, abstracts, and keywords were determined. The search resulted in 2966 articles. The results were then refined only to articles that published from the year 2011 to 2020, which were written in the English language resulting into 996 articles. Only journal types of articles were used which bring into 984 articles. Next, the results filtered to articles that belong to social science, multidisciplinary, mathematics, environmental science, and engineering. Some of the keyword also eliminated or excluded rejected due to a lack of relevance for the specific purpose of the current study, resulting into 344 articles. The search used in this study was focused on the string as below.

TITLE-ABS-KEY ((sports) AND (optimisation OR optimization)) AND (LIMIT-TO (SRCTYPE, “j”)) AND (LIMIT-TO (DOCTYPE, “ar”)) AND (LIMIT-TO (SUBJAREA, “ENGI”) OR LIMIT-TO (SUBJAREA, “MATH”) OR LIMIT-TO (SUBJAREA, “SOCI”) OR LIMIT-TO (SUBJAREA, “ENVI”) OR LIMIT-TO (SUBJAREA, “MULT”)) AND (LIMIT-TO (PUBYEAR, 2020) OR LIMIT-TO (PUBYEAR, 2019) OR LIMIT-TO (PUBYEAR, 2018) OR LIMIT-TO (PUBYEAR, 2017) OR LIMIT-TO (PUBYEAR, 2016) OR LIMIT-TO (PUBYEAR, 2015) OR LIMIT-TO (PUBYEAR, 2014) OR LIMIT-TO (PUBYEAR, 2013) OR LIMIT-TO (PUBYEAR, 2012) OR LIMIT-TO (PUBYEAR, 2011)) AND (LIMIT-TO (LANGUAGE, “English”)) AND (EXCLUDE (EXACTKEYWORD, “Physiology”) OR EXCLUDE (EXACTKEYWORD, “Priority Journal”) OR EXCLUDE (EXACTKEYWORD, “Education”) OR EXCLUDE (EXACTKEYWORD, “Students”) OR EXCLUDE (EXACTKEYWORD, “Doping”) OR EXCLUDE (EXACTKEYWORD, “Physical Education”) OR EXCLUDE (EXACTKEYWORD, “Machine Learning”) OR EXCLUDE (EXACTKEYWORD, “Teaching”) OR EXCLUDE (EXACTKEYWORD, “Sports Medicine”) OR EXCLUDE (EXACTKEYWORD, “Artificial Intelligence”) OR EXCLUDE (EXACTKEYWORD, “Decision Making”) OR EXCLUDE (EXACTKEYWORD, “Doping In Sports”) OR EXCLUDE (EXACTKEYWORD, “Heuristic Algorithms”) OR EXCLUDE (EXACTKEYWORD, “Neural Networks”) OR EXCLUDE (EXACTKEYWORD, “Unclassified Drug”) OR EXCLUDE (EXACTKEYWORD, “Big Data”) OR EXCLUDE (EXACTKEYWORD, “Health”) OR EXCLUDE (EXACTKEYWORD, “Economics”) OR EXCLUDE (EXACTKEYWORD, “Education Computing”) OR

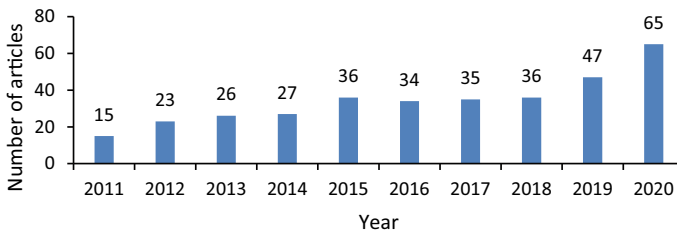
EXCLUDE (EXACTKEYWORD, “Heuristics”) OR EXCLUDE (EXACTKEYWORD, “Nonhuman”) OR EXCLUDE (EXACTKEYWORD, “Accident Prevention”) OR EXCLUDE (EXACTKEYWORD, “Data Mining”) OR EXCLUDE (EXACTKEYWORD, “Risk Assessment”) OR EXCLUDE (EXACTKEYWORD, “Urinalysis”) OR EXCLUDE (EXACTKEYWORD, “Animal”) OR EXCLUDE (EXACTKEYWORD, “Animals”) OR EXCLUDE (EXACTKEYWORD, “Blood”) OR EXCLUDE (EXACTKEYWORD, “Urine”) OR EXCLUDE (EXACTKEYWORD, “Automation”) OR EXCLUDE (EXACTKEYWORD, “Chemistry”).

Further, a classification of the articles was provided based on; number of articles in 2011–2020, journals with highest publications, most cited articles, dominant authors, and most dominant countries. A network analysis of co-authorship, intercountry co-authorship and keywords co-occurrences were analyzed using the VOSviewer 1.6.16 software (Van Eck and Waltman 2007).

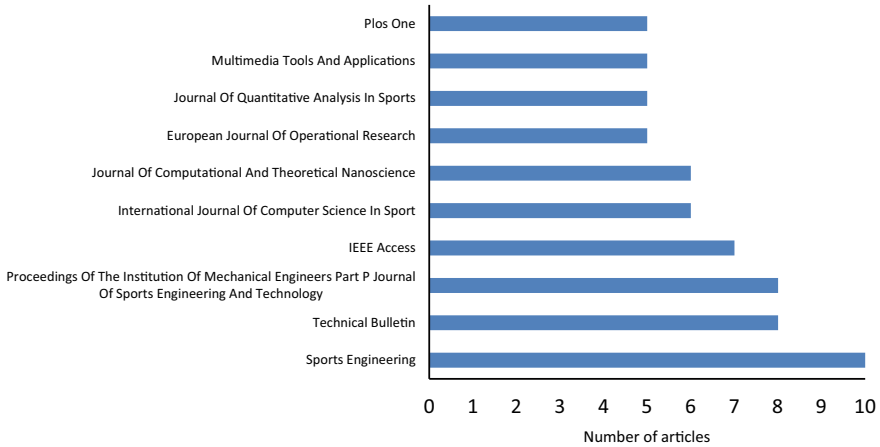
### 3 Findings

#### 3.1 Number of Articles Published

Figure 1 depicts the cumulative number of articles published from the year 2011 to 2020. There was increasing number of articles related to optimization in sports from 2011 to 2015. Meanwhile, it was decreasing in 2016. The articles were increasing from 2016 to 2020. From the year 2019 to 2020, the number of articles increased rapidly from 47 to 65. The subject area of this study covered on Engineering (30.5%), Computer Science (13.3%), Mathematics (11.7%), Social Sciences (6.4%) and Materials Science (5.9%).



**Fig. 1** Number of articles published on optimization in sports in Scopus database from 2011 to 2020



**Fig. 2** Top 10 journals with highest publications on optimization in sports

### 3.2 Journals with Highest Publications

Figure 2 shows the top 10 journals from 160 journals, which published the highest number of articles on optimization in sports. The journal that represents the highest number of publications is belong to Sports Engineering (10 articles published), in which published under Springer publisher. Result also revealed that the most cited article on this journal is “Biomechanical indices represented on radar chart for assessment of performance and infringements in elite race-walkers”. In addition, the publishers that contributed to these journals are Springer, Universidad Central de Venezuela, SAGE Publications Ltd, IEEE, Sciendo, American Scientific Publishers, Elsevier B.V. De Gruyter Open Ltd and Public Library of Science.

### 3.3 Most Cited Articles

Table 1 indicates the most cited articles with their authors, year of published, publisher and total citation. The article entitled “Towards scalable summarization of consumer videos via sparse dictionary selection” lead the most cited papers that related to the optimization in sports. The results of the study found that IEEE publishers were dominant compared to other publishers.

**Table 1** 10 Most cited articles related to optimization in sports

Title of article	Authors	Year	Publisher	Total citation
Towards scalable summarization of consumer videos via sparse dictionary selection	Cong, Y., Yuan, J., Luo, J.	2012	IEEE	223
Multivariable adaptive identification and control for artificial pancreas systems	Turksoy, K., Quinn, L., Littlejohn, E., Cinar, A.	2014	IEEE	113
An efficient algorithm for constrained global optimization and application to mechanical engineering design: League championship algorithm (LCA)	Husseinzadeh Kasha, A.	2011	Computer Aided Design	103
Charge-depleting control strategies and fuel optimization of blended-mode plug-in hybrid electric vehicles	Zhang, B., Mi, C.C., Zhang, M.	2011	IEEE	67
Energy-efficient, heterogeneous sensor selection for physical activity detection in wireless body area networks	Zois, D.-S., Levorato, M., Mitra, U.	2013	IEEE	66
A multi-objective approach for unmanned aerial vehicle routing problem with soft time windows constraints	Guerriero, F., Surace, R., Loscr�, V., Natalizio, E.	2014	Applied Mathematical Modelling	64
Multimedia event detection using a classifier-specific intermediate representation	Ma, Z., Yang, Y., Sebe, N., Zheng, K., Hauptmann, A.G.	2013	IEEE	63

(continued)

**Table 1** (continued)

Title of article	Authors	Year	Publisher	Total citation
Regression modeling and optimization of machinability behavior of glass-coir-polyester hybrid composite using factorial design methodology	Jayabal, S., Natarajan, U., Sekar, U.	2011	International Journal of Advanced Manufacturing Technology	61
Hierarchical multi-objective evacuation routing in stadium using ant colony optimization approach	Fang, Z., Zong, X., Li, Q., Li, Q., Xiong, S.	2011	Journal of Transport Geography	59
Improved Quantum-Inspired Evolutionary Algorithm for Large-Size Lane Reservation	Che, A., Wu, P., Chu, F., Zhou, M.	2015	IEEE	58

### 3.4 Most Dominant Authors

Table 2 presents the list of top 10 most dominant authors. The authors were chosen based on their maximum publications in optimization in sports. All the 344 articles are owned to their respective 957 authors. Author's name, scopus author ID, year of first publication, total publication, h-index, current affiliation, and country are presented in Table 2. It was found that three articles were published by Bilal Alatas, Katja Daniela Mombaur, Wang Liangmo, Zhao Xing and Zhuang Weichao, respectively. From the data, eight out of ten authors played a part as the first author. Most of the authors are from China (3 authors), followed by India (2 authors). Others are from Turkey, Canada, Nigeria, Saudi Arabia dan Italy with one author, respectively.

### 3.5 Most Dominant Countries

Figure 3 illustrates top 25 countries with highest number of articles on optimization in sports. Out of 58 countries, it was found that China (80) has the most articles published, followed by United States (44) and United Kingdom (24).

**Table 2** Top 15 authors according to the number of published articles

Author	Scopus author ID	Year of first publication	TP	TC	h-index	Current affiliation	Country
Alataş, Bilal	10,341,297,500	2004	53	2022	18	Firat University	Turkey
Mombaur, Katja Daniela	55,885,381,400	2000	134	1716	20	University of Waterloo	Canada
Wang, Liangmo	7,409,184,577	2001	110	927	17	Nanjing University of Science and Technology	China
Zhao, Xing	51,061,726,400	2011	31	137	7	Hohai University	China
Zhuang, Weichao	56,338,038,400	2014	57	367	11	Southeast University	China
Abdulhamid, Muhammad Shafii	56,157,617,800	2012	47	953	15	Federal University of Technology	Nigeria
Agarwalla, Prativa	57,188,959,403	2016	8	31	3	Heritage Institute of Technology	India
Bose, Soutrik	57,205,706,157	2018	14	32	4	MCKV Institute of Engineering	India
Boucekara, Houssein	24,066,258,400	2008	75	1237	15	University of Hafr Al-Batin,	Saudi Arabia
Braghin, Francesco	6,701,856,637	2000	266	2137	23	Politecnico di Milano	Italy

TP = Total Publication.

TC = Total Citation.

### 3.6 Co-authorship of Various Authors

The visualization of co-authorship of various authors is shown in Fig. 4. In this study, the minimum number of documents of an author selected was two as the threshold, and the minimum number of citations of an author chosen was 0 as the threshold. Of the 957 authors, 42 met the criteria. The authors were grouped into different clusters. A total of 20 clusters were identified with 32 links and 52 total link strengths. The most influential author identified was Zhang X. had 7 total link strengths with 3 documents, 36 citations and 7 links with other authors. Wang L. and Kim J. had most of the documents which is four documents with 103 and 41 citations, respectively. Wang L. had the most citations which is 103 citations with 4 documents, 2 links and 3 total link strengths.

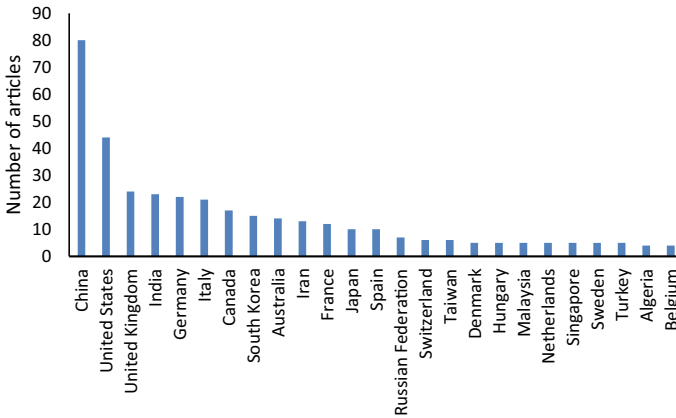


Fig. 3 Most dominant countries

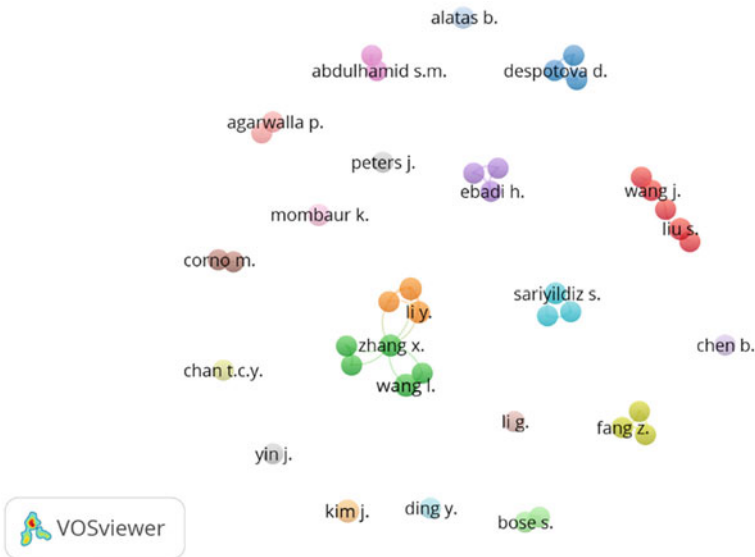


Fig. 4 Co-authorship of various authors

### 3.7 *Intercountry Co-authorship of Various Countries' Authors*

The co-authorship related to countries was analyzed. The Fig. 5 shows the intercountry co-authorship network map. The minimum number of documents of a country was kept 2, and the minimum number of citations of a country was kept zero. Of the 58 countries, 44 countries were connected to each other in terms of



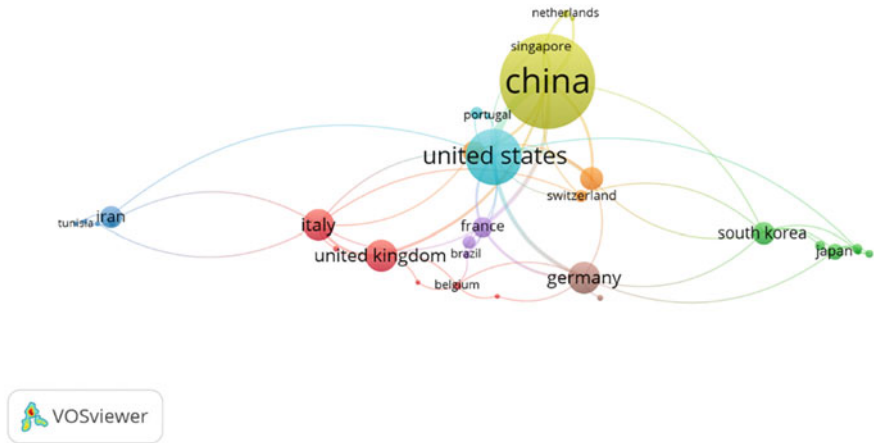


Fig. 5 Intercountry co-authorship of various countries' authors

co-authorship. Results showed that the authors of the United States have the highest co-authorship with the authors of other countries, which is 25, followed by China (23) and Germany (11).

### 3.8 Co-occurrences of Authors' Keywords

In this study, analysis of co-occurrence (author keyword) was carried out to determine which keywords are often used in various articles. Figure 6 indicates the co-occurrence (author keyword) network map. There was total 1244 keywords in the data set. Only those 31 keywords were selected, which appeared more than three times in the data set are used to creating a network map.

It was found that various maximum appearing keywords has co-occurred with the keyword “optimization” and its synonymous terms. It shows that various methods, topics, and themes that associate with “optimization” which have been frequently focused by the researchers. For example, the co-occurrence of the keyword’s “sports” and “optimization”, recommend that several researches have been conducted about the optimization in sports. Another example is between “league championship algorithm” and “optimization”, propose that the league championship algorithm has been utilized in optimization.

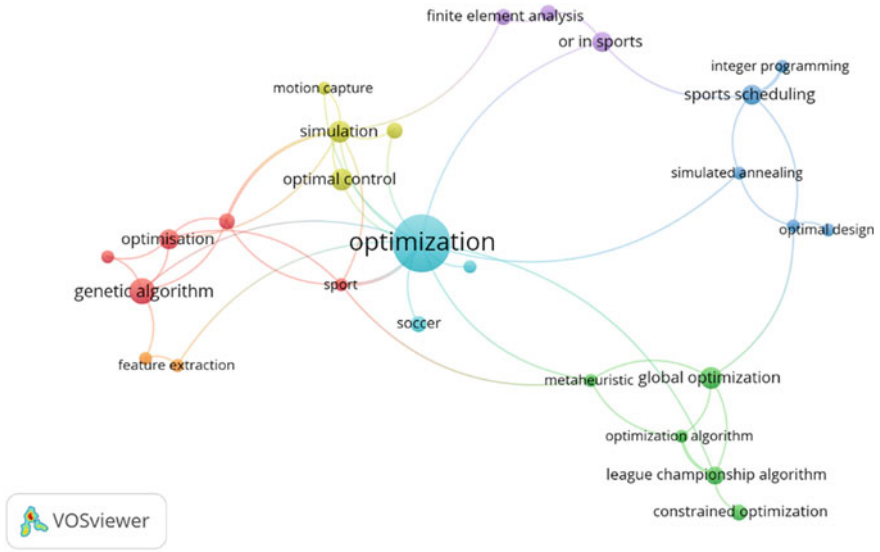


Fig. 6 Co-occurrence of authors' keywords

## 4 Conclusion

A bibliometric analysis of optimization in sports was carried out in this study. 344 articles were analyzed by using the Scopus database and the data was visualized using Vosviewer.

This study has several limitations, which could be extended in the future studies. The articles published in this study were limited from 2011 to 2020, by utilizing Scopus database only. It is proposed that future studies extend the duration of year published articles so that more topics of interest could be covered. Also, multiple choices of databases like Google Scholar or Web of Science could be implemented.

Generally, the number of researches on optimization in sports has been increasing from year 2011 to 2020. Based on the analysis, it was found that the journal with the highest number of articles on optimization in sports is Sports Engineering, belonging to the Springer publisher. In addition, “Towards scalable summarization of consumer videos via sparse dictionary selection” is the most cited papers that related to the optimization in sports. It was revealed that the top three maximum number articles published by the authors who are from countries China, United States and United Kingdom. The most significant keywords of the keyword co-occurrences network analysis are “optimization”, “sports”, “algorithm” and “performance”. Thus, further research such as the proposed algorithm optimize the performance of athletes in sports could be considered. Also, future studies could consider the study of the relationship of services techniques with optimization the performance in sports.

**Acknowledgements** The authors thankfully acknowledge the financial support from Universiti Malaysia Kelantan under UMK-FUND Grant, Grant Vote: R/FUND/A0100/01741A/001/2020/00837.

## References

- Sagir, M., Hamid, N.H.A., Kendall, G.: A combined mathematical modeling and analytic hierarchy process approach for sports scheduling problems. *J. Ind. Eng.* **30**(2), 111–122 (2019)
- Silva, A.J., et al.: Mathematical modeling analysis of the performance evolution along the career-span of female swimmers (2007)
- Galvan, M.G., et al.: Mathematical models at the olympic games to predict road events. *Int. J. Innov. Comput. Inf. Control ICIC Int.* **14**(5), 1905–1915 (2018)
- Scarf, P., Shrahili, M., Alotaibi, N., Jobson, S., Passfield, L.: Modelling the effect of training on performance in road cycling: estimation of the Banister model parameters using field data (2019)
- Yukawa, H., Gyokusen, N., Kawamura, S.: Two-dimensional mathematical model of sports surfaces with angled multi-intensity impact tests (2018)
- Blaya-Haro, F., San-Pedro-Orozco, P., Juanes-Méndez, J.A., Gallego-Morales, L.T., Franco-López, Á., Rodríguez-Montes, J.A.: Application of a geometric and mathematical model to the biomechanics of the lumbar region in weightlifting athletes. *JONNPR* **1**(6), 201–209 (2016)
- Usman, J., Abas, W.A.B.W.: A comparative analysis on selected kinematics parameters between the “sepak kuda” serve and the “sepak sila” serve in sepak takraw. In: *Isas 20041 Ottawa, Canada* (2004)
- Sujae, I.H., Koh, M., Hin, T.: Kinetic link - does it exists in the kuda and sila serve kicking technique of sepak-takraw? In: *XXIV ISBS Symposium Salzburg – Austria 2006. Physical Education and Sports Science Group, National Institute of Education, Nanyang Technological University, Singapore* (2006)
- Ivančević, T., Jovanović, B., Đukić, M., Marković, S., Đukić, N.: Biomechanical analysis of shots and ball motion in tennis and the analogy with handball throws. *Phys. Educ. Sport* **6**(1), 51–66 (2008)
- Zhang, Y., Liu, G., Xie, S.-Q.: Contributions of lower limb segments in rugby place kick. In: *International Conference on Human Health and Biomedical Engineering August 19–22, 2011, Jilin, China* (2011)
- Rezaei, M., Mimar, R., Paziraei, M., Latifian, S.: Talent identification indicators in sepahtakraw male elite players on the bases of some biomechanical parameters Middle-East. *J. Sci. Res.* **16**(7), 936–941 (2013)
- Maseleno, A., Hasan, Md.M., Muslihudin, M., Susilowati, T.: Finding kicking range of sepak takraw game: fuzzy logic and Dempster-Shafer theory approach. *Indones. J. Electr. Eng. Comput. Sci.* **2**(1), 187–193 (2016)
- Hakim, A.A., Mulyana, Hanif, S.: The effect of biomechanical knowledge, physical condition, and landing technique on ACL injury risk of sepak takraw athletes. *J. Indones. Phys. Educ. Sport* **3**(2), 151–161 (2017)
- Shilbury, D.: A bibliometric study of citations to sport management and marketing journals. *J. Sport Manag.* **25**(5), 423–444 (2011)
- Ciomaga, B.: Sport management: a bibliometric study on central themes and trends. *Eur. Sport Manag. Q.* **13**(5), 557–578 (2013)
- Lindahl, J., Stenling, A., Lindwall, M., Colliander, C.: Trends and knowledge base in sport and exercise psychology research: a bibliometric review study. *Int. Rev. Sport Exerc. Psychol.* **8**(1), 71–94 (2015)

- Huertas González-Serrano, M., Jones, P., Llanos-Contrera, O.: An overview of sport entrepreneurship field: a bibliometric analysis of the articles published in the Web of Science. *Sport Soci.* **23**(2), 296–314 (2020)
- Pellegrini, M.M., Rialti, R., Marzi, G., Caputo, A.: Sport entrepreneurship: a synthesis of existing literature and future perspectives. *Int. Entrep. Manag. J.*, 1–32 (2020)
- Andrade, A., Dominski, F.H., Coimbra, D.R.: Scientific production on indoor air quality of environments used for physical exercise and sports practice: bibliometric analysis. *J. Environ. Manag.* **196**, 188–200 (2017)
- Jiménez-García, M., Ruiz-Chico, J., Peña-Sánchez, A.R., López-Sánchez, J.A.: A bibliometric analysis of sports tourism and sustainability (2002–2019). *Sustainability* **12**(7), 1–18 (2020)
- Lee, V.H., Hew, J.J.: Is TQM fading away? A bibliometric analysis of a decade (2006–2015). *Int. J. Serv. Econ.Manag. (IJSEM)* **8**(4), 227–249 (2017)
- De Bakker, F.G., Groenewegen, P., Den Hond, F.: A bibliometric analysis of 30 years of research and theory on corporate social responsibility and corporate social performance. *Bus. Soc.* **44**(3), 283–317 (2005)
- Benckendorff, P., Zehrer, A.: A network analysis of tourism research. *Ann. Tour. Res.* **43**, 121–149 (2013)
- Caputo, A., Marzi, G., Pellegrini, M.M., Rialti, R.: Conflict management in family businesses: a bibliometric analysis and systematic literature review. *Int. J. Confl. Manag.* **29**(4), 519–542 (2018)
- López-Fernández, M., Serrano-Bedia, A., Pérez-Pérez, M.: Entrepreneurship and family firm research: a bibliometric analysis of an emerging field. *J. Small Bus. Manag.* **54**(2), 622–639 (2016)
- Van Eck, N.J., Waltman, L.: Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics* **84**(2), 523–538 (2010)
- Van Eck, N.J., Waltman, L., van den Berg, J., Kaymak, U.: Visualizing the computational intelligence field [application notes]. *IEEE Comput. Intell. Mag.* **1**(4), 6–10 (2006)
- Ellegaard, O., Wallin, J.A.: The bibliometric analysis of scholarly production: how great is the impact? *Scientometrics* **105**, 1809–1831 (2015)
- Börner, K., Chen, C., Boyack, K.W.: Visualizing knowledge domains. *Annu. Rev. Inf. Sci. Technol.* **37**, 179–255 (2005)
- Falagas, M.E., Pitsouni, E.I., Malietzis, G.A., Pappas, G.: Comparison of PubMed, scopus, web of science, and Google scholar: strengths and weaknesses. *FASEB J.* **22**, 338–342 (2007)
- Van Eck, N.J., Waltman, L.: VOS: a new method for visualizing similarities between objects. In: Decker, R., Lenz, H.J. (eds.) *Advances in Data Analysis. Studies in Classification, Data Analysis, and Knowledge Organization*, pp. 299–306. Springer, Heidelberg (2007). [https://doi.org/10.1007/978-3-540-70981-7\\_34](https://doi.org/10.1007/978-3-540-70981-7_34)

# The Quality of Corporate Social Responsibilities Disclosures in Malaysian Companies



Abdul Wahid Bin Mohd Kassim, Raman Bin Noordin, Junainah Jaidi, and Sulaiman Bin Tahajuddin

**Abstract** This paper examines the association between the quality of Corporate Social Responsibilities Disclosures (CSR D) and four variables namely Malay Dominated Board, Malay Dominated Shareholders, Ethnicity of CEO and the ethnicity of the Board of Directors' Chairperson in annual reports. This study used content analysis and a dataset from Bursa Malaysia public listed companies. Findings founded on the full regression framework with the four variables showed that all the independent variables Malay Dominated Board, Malay Dominated Shareholders, the Ethnicity of CEO and the Ethnicity of the Board of Directors' Chairperson showed association with quality of CSR D in the predicted directions. Of these Malay Dominated Board (MalBoD), and The Ethnicity of CEO (MalCEO) are highly significant at the 1% level. While Malay Dominated Shareholders (MalSh) is found to be positive and substantial but at 10% level. In contrast, the variable the ethnicity of the Board of Directors' Chairperson (MalCh) is identified to be not significant when regression examines are completed.

**Keywords** The quality CSR D · Malays · Annual reports

## 1 Introduction

This research studies the quality of Corporate Social Responsibilities Disclosures (CSR D) in the reporting of the public listed companies (PLCs) in Bursa Malaysia. Conventionally, companies only inform their business activities in financial reports to their major stakeholders - the shareholders and investors with stressing on its overall financial health. Due to public pressure and raising awareness on environmental and social responsibility topics, companies began reporting on economic, social and environmental problems. Over the last three decades, the idea of being socially responsible to the community is getting much footing (Shinde et al. 2011). This new

---

A. W. B. M. Kassim (✉) · R. B. Noordin · J. Jaidi · S. B. Tahajuddin  
Faculty of Business, Economics and Accountancy, Universiti Malaysia Sabah,  
88400 Kota Kinabalu, Sabah, Malaysia

type of reporting is known as corporate social responsibility reporting (CSRR) or corporate social responsibility disclosure (CSR D) (Cerin 2002).

This concept argued and highlighted whether a corporation shall be responsible to its interest parties, for instance shareholders, clients, staff, suppliers and the society. The situation further exacerbated by worldwide corporation scandals such Exxon Valdez (USA, 1989), Snow Brand Company Dairy in Japan (2000), Enron (USA, 2001), WorldCom (USA, 2002), which further heightened public awareness globally including Malaysia that more stakeholders will suffer if the importance of CSR is not recognized (Majdi and Rahman 2011; Uwuigbe et al. 2011; Zawawi and Rahman 2008).

Therefore, as suggested by several authors (such as Rahman and Ismail 2016; She and Michelin, 2019; Xu et al., 2020) further examination of the determinants of CSR D is still relevant and warranted as evidenced by previous studies. Studies done by several scholars such as Andrew et al. 1989; Ahmad and Sulaiman 2004; Elijido-Ten 2004; Ahmad et al. 2003; Thompson and Zakaria 2004; Othman et al. 2011; Haji 2013; Esa and Ghazali 2012; Fatima et al. 2015; Sundarasan et al. 2016; Anuforo, Aripin, and Mohamed 2018, recognised that the extent of CSR D made by the corporations in Malaysia are still considered below the standards and need further improvement.

In addition, it was also recognised that previous studies gave over emphasis on investigating on the type and the extent of disclosures (Buniamin 2010 and Guthrie et al. 2008). Yet, not enough of study that considered the quality of CSR D practices (Buniamin 2010).

As such, the purpose of this paper is the to discover those factors which are has positive associated with the quality CSR D in Malaysian companies. The remaining of the article is organised as follows. It begins with reviewing of prior relevant studies and hypothesis development. The paper continues with discussion on this study methodology. Next, results of this study and discussion are offered. The final part will give the conclusion of this work.

## 2 Literature Review and Hypothesis Development

### 2.1 CSR and CSR Disclosure

Neu et al., (1998) argued that CSR D could be perceived as a “symbolic impression or constructed image of itself” that an organisation is expressing to the entire world. Gelb and Strawser (2001) suggested that the information disclosure practice is a feat of socially responsible activity. The findings of their research indicate a significant linked between CSR and CSR D. Simply put, organisations that involve in CSR activities offer further helpful and/or comprehensive disclosures than do other organisations that participate in fewer CSR activities. The reasoning behind is that, when an organisation is carrying socially responsible activities, it has the motivations

to offer comprehensive and useful disclosure on the activities to make an impact on their stakeholders.

## ***2.2 Malay Dominated Board***

Haniffa and Cooke (2005) believe that companies whose boards of directors are controlled by non-Malays are expected to disclose less CSR information compared to companies controlled by Malays. The majority of non-Malays are non-Muslim. In contrast, Malays, which are mostly Muslim, and they are influenced by their faith that is Islam. Islamic principles and Islamic values promote its follower to be more collective (Baydoun and Willett 1995; 1997) and adhere to laws that are based upon a principle of social equality that is zakat (taxation) and the mirath (inheritance) (Gambling and Karim 1991). Furthermore, transparency is part of the Islamic business ethics and as such, the Malays are anticipated to be more transparent in their reporting practice (Haniffa and Cooke 2002). Thus, it can be hypothesised that:

H1: There is a positive relationship between the proportion of Malays dominated board on the quality of CSR.

## ***2.3 Malay Dominated Shareholders***

The reporting practice of a company used to be greatly influenced by the race of the majority owners of the company. If companies are dominated by Malay shareholders, they also will implement several strategies based on their ethical values. Malays are Muslims and their ethical values are influenced by the Islamic principles. As such, companies which are controlled by Malays are predicted to issue more CSR compared to companies controlled by other ethnic groups (Haniffa and Cooke 2005). As emphasised by the former Deputy Prime Minister in 2004, "for Muslims, the concept of CSR is not something new as responsible investment is a religious duty rather than a choice" (Razak 2004). Hence, Islam plays an active and central role in CSR behaviour especially among the companies controlled by Muslims in Malaysia. As such, transparency is part of the Islamic business ethics and as such, the majority Malays being Muslims are anticipated to be more transparent in their disclosure practice (Haniffa and Cooke 2002). Furthermore, Yatim et al. (2006) indicated that Malay companies practice better CG than non-Malay companies, thus they are expected to practice better CSR practice than non-Malay firms. Thus, it can be hypothesised that:

H2: There is a positive relationship between the concentration of Malay ownership and the quality of CSR.

## **2.4 *The Ethnicity of CEO***

Scholars have identified ethnicity as one of the vital demographic factors in the disclosure practice in Malaysia because it fulfils as an economic motivation to the person (Al Arussi et al. 2009; Haniffa and Cooke 2002). Grounded on a Hofstede–Gray hypothetical model, the Malays might be predicted to be reasonably less secretive measure up to their Chinese fellow countryman and low secrecy means higher reporting (Haniffa and Cooke 2002). Then, this view could be used to investigate whether the ethnicity of the CEO has an impact to the CSRD in Malaysia (Haniffa and Cooke 2002). As mentioned before, that cultural factors are expected to have some influence on the demand for a high-quality disclosure (Salleh et al. 2006) and the Malays are less secretive than the Chinese, hence, more disclosures. Therefore, it can be hypothesised that:

H3: There is a positive relationship between the ethnicity of the CEO and the quality of CSRD.

## **2.5 *The Ethnicity of the Board of Directors' Chairperson***

Scholars have identified ethnicity as one of the vital demographic factors in disclosure reporting in Malaysia because it fulfils as a financial motivation to the person (Al Arussi et al. 2009; Haniffa and Cooke 2002). Grounded on a Hofstede–Gray hypothetical model, the Malays may be predicted to be reasonably less secretive measure up to their Chinese fellow worker countryman and low secrecy means higher reporting (Haniffa and Cooke 2002). Then, this view could be used in to predict whether the ethnicity of the chairperson of a board or committee has an impact to the CSRD in Malaysia (Haniffa and Cooke 2002). As mentioned before that cultural factors may influence the demand for a high-quality disclosure and Malays are less secretive than Chinese, hence, more disclosure. Hence, it can be hypothesized that:

H4: There is a positive relationship between the ethnicity of the Board's Chairperson and the quality of CSRD.

## **3 Research Methodology and Sample Selection**

This study is carried out among the Malaysian PLCs. The data for this research comprises of 347 firms selected from Bursa Malaysia and was mainly secondary in nature. In line with prior studies on CSR disclosures, a content analysis method is utilised (for instance, Abbott and Monsen 1979; Belal 2001; Imam, 2000). Content analysis of company reporting is a recognised method and well-regarded to be empirically valid in examination of voluntary reporting and CSR research (Abbott and



Monsen 1979; Gray et al. 1995a; Guthrie and Parker 1990; Guthrie Guthrie et al. 2004).

### ***3.1 The Dependent Variable – the Quality of CSRD***

Several methods are available to ascertain the disclosure level of company reporting. One of the most common methods is counting words, sentences, paragraphs, pictures and pages. However, scholars such as Gray et al. 1995b, Guthrie and Mathews (1985), Neimark (1983), and Parker (1986) suggested using the method of counting pages. They argued that the number of pages is echoed to the quantity of total space presented to a subject and indicating the significance of that subject. Practically, pages are also simpler, more reliable, and consistent unit to determine by hand (Gray et al. 1995b; Guthrie and Parker 1989, 1990).

However, as mentioned before that previous studies over emphasis on investigating the type and extent of disclosures (Buniamin 2010 and Guthrie et al. 2008) only. Yet, not enough research is done for the quality of CSRD practices (Buniamin 2010). Therefore, in this study, the authors will be using the disclosure index approach. The reporting quality is assessed based on the disclosure index approach. The disclosure index was derived from a checklist developed by Ghazali (2007). This checklist was developed by her based on a review of previous researchers' works (such as Hossain et al. 1994; Haniffa and Cooke 2002) and various scoring systems on voluntary disclosure (Ghazali 2007). According to Ghazali (2007), special references were also made by her to "other recommended disclosures" enclosed in the "Sample Annual Report" published jointly by the MIA and PriceWaterhouseCoopers (PWC) and the adjudication criteria for the Corporate Awards developed by the Bursa Malaysia. According to Ghazali (2007), before the checklist was employed in the actual study, the list has been pre-tested on 25 companies' annual reports to warrant the robustness of the disclosure index measurements. The final list will be comprised of 22 items and are shown in Table 1.

The instrument utilised this study will be founded on an unweighted method to reduce any subjectivity. This means that all information will be considered equally important and relevant irrespective of their significance or significance to any specific user group (Chau and Gray 2002; Cooke 1989; Craig and Diga 1998). A dichotomous procedure was utilized, whereby a score of '1' will be awarded if an item is present in the checklist is reported and a '0' if otherwise. Accordingly, the total score of the CSRD index will be resulting from calculating the percentage of real scores given to the highest mark achievable by that firm i.e. 22. The CSRD index will signify the quality of reporting on this study (Ghazali 2007).

**Table 1** CSRD items

No	Disclosure items	No	Disclosure items
1	Breakdown of employees by line of business	12	Value Added Statement
2	Breakdown of employees by level of qualification/exec vs. non	13	Product safety
3	Breakdown of employees by ethnic origin	14	Environmental policy
4	Employees' appreciation	15	Charitable donations/sponsorship
5	Policy on training	16	Participation in government social campaign
6	The amount spent on training	17	Community programs (health and education)
7	Number of employees trained	18	Discussion of major types of products/services/projects
8	Discussion of employees' welfare	19	Improvement in product quality
9	Safety policy	20	Improvement in customer service
10	Information on accidents at workplace	21	Distribution of marketing network for finished products
11	Statement of internal control	22	Customer awards/ratings received

Source Ghazali (2007)

### 3.2 *The Independent Variables*

The independent variables and their measurement are shown in Table 2.

**Table 2** The independent variables and measurement

No	Variable	Measurement
1	Malay dominated board (MalBoD),	The proportion of Malay directors to total directors on the board of directors
2	Malay dominated shareholders (MalSh)	Proportion of Malay shareholders to total shareholders
3	Ethnicity of CEO (MalCEO)	If the company CEO's is a Malay or not - Dichotomous
4	The ethnicity of the board of directors' chairperson (MalCh)	If the company board's chairperson is a Malay or not - Dichotomous

## 4 Results and Discussion

Table 2 shows the multivariate outcomes employing multiple regression for this study samples: The regression analysis of our framework of CSRD are presented Table 3 above. The F-test (F-test = 45.686,  $p < 0.001$ ) shows that the framework is adequately robust. The R-squared and adjusted R-squared of 34.8% and 34.1% respectively suggested that the framework has realistic explicatory power. The VIF figures (not one surpasses 10.000) imply that multicollinearity is not a problem in the interpretation of the findings.

All the independent variables MalBoD (+), MalSh (+), MalCEO (+) and MalCh (+) showed association with quality of CSRD in the predicted directions. Of these MalBoD (+), and MalCEO (+) are highly significant at the 1% level. While MalSh (+) is realised to be statistically significant but at 10% level. MalCh (+) is understood to be not statistically significant.

Malay Dominated Board (MalBoD) is realised to be significant and has positive linked to the CSRD's quality (t-statistics = 3.354; p-value = 0.000). Thus, the result does support H1, which claims that the greater the proportion of Malays directors on the boardroom the higher the CSRD. Thus, it can be concluded that the existence of Malay members on the boardroom has positive influenced on the improvement of the quality of disclosures. According to Haniffa and Cooke (2005), firms which boards of directors controlled by Malays are anticipated to publish more CSRD compare to companies controlled by other ethnic groups. The reason for such action is that the directors of Malaysian companies will direct and manage the companies based on the principles of their own respective cultural values. In turn, as Malay is Muslim their actions are in conformity with the Islamic teaching. Thus, Islam is in favour of the idea of social accountability and the maximum disclosure principle (Lewis 2001). However, this result not confirming the research of Alkdai and Hanefah (2012). They found that the number of independent Muslim did not influence the extent of CSRD in the audit committee (Alkdai and Hanefah 2012). However, they results are

**Table 3** Multiple regression (N = 347)

Variable and predicted sign	Regression	VIF	t-value	p-value
MalBoD(+)	0.161	3.113	3.354	0.000
MalSh (+)	0.01	1.046	1.607	0.0545
MalCEO (+)	0.131	2.546	4.659	0.000
MalCh (+)	0.14	1.484	0.754	0.226
Summary statistics:				
Intercept	0.282			
R <sup>2</sup>	0.348			
Adjusted R <sup>2</sup>	0.341			
F-Test	45686***			

\*, \*\*, \*\*\* = Significant at the 10%, 5% and 1% level respectively using a two tailed test

related to audit committee which board is less powerful than the BOD. Therefore, less influential control to impact the direction and management of the firm including the disclosures practices of the firm.

Malay Dominated Shareholders (MalSh) also understood to be significant and has positive linked to the quality of CSRD (t-statistics =  $-1.607$ ; p-value =  $0.0545$ ), however, only at 10% level. Thus, H2 is supported, which asserts that the quality of CSRD will be improved the higher the number of Malay shareholders. This result confirmed the research done by Haniffa and Cooke (2005). This positive association suggests that the presence of Malay shareholders will increase the quality of CSRD. In short, the companies which are majority owned by Malays are expected to publish higher CSRD, assessed to the businesses owned by other ethnic groups. The main reason behind this is in conformity with the Islamic belief of social accountability, which is the full disclosure principle (Lewis 2001).

The Ethnicity of CEO (MalCEO) is shown to be statistically significant and has positive linked to the quality of CSRD (t-statistics =  $4.659$ ; p-value =  $0.000$ ) and support H3. This result confirmed the works done by scholars such as Al Arussi et al. (2009), Haniffa and Cooke (2002). This finding also proves that the ethnicity is a vital aspect in CSRD practice in Malaysia. Scholars have identified ethnicity as one of the vital demographic factors in the CSRD practice in Malaysia for the reason that it fulfils as a financial motivation to the person (Al Arussi et al. (2009); Haniffa and Cooke 2002). Grounded on a Hofstede–Gray theoretic model, the Malays might be predicted to be reasonably less secretive gauged to their Chinese countryman and low secrecy means higher reporting (Haniffa and Cooke 2002). Then, this view could be used to investigate whether the ethnicity of the CEO has an impact to the CSRD in Malaysia (Haniffa and Cooke 2002). As mentioned before, that cultural factors are expected to have some influence on the demand for a high-quality disclosure (Salleh et al. 2006) and the Malays are less secretive than the Chinese, hence, more disclosures.

Finally, the ethnicity of the Board of Directors' Chairperson (MalCh) has been found to be insignificant, even though in the predicted directions of the association to the quality of CSRD (t-statistics =  $0.754$ ; p-value =  $0.226$ ). Thus, H4 is not supported, which states the CSRD quality will be greater if the boardroom's chairperson is Malay. This negative association suggests that the existence of Malay Chairperson will not influence the reporting of CSRD. This result contrasts with the study done by Al Arussi et al. (2009), Haniffa and Cooke (2002). Both papers claimed that ethnicity is a vital aspect of CSRD practice in Malaysia. However, Al Arussi et al. (2009) study is on the association between audit committee and the extent of CSRD.

## 5 Conclusions

This paper has investigated whether the quality of CSRD in reporting of Malaysian public listed companies is linked with four of variables Malay Dominated Board,

Malay Dominated Shareholders, Ethnicity of CEO and the ethnicity of the Board of Directors' Chairperson in annual reports.

Our findings shown that the four variables show that all the independent variables Malay Dominated Board (MalBoD), Malay Dominated Shareholders (MalSh), Ethnicity of CEO (MalCEO) and the ethnicity of the Board of Directors' Chairperson (MalCh) showed association with quality of CSR in the predicted directions. Of these Malay Dominated Board (MalBoD), and Ethnicity of CEO (MalCEO) are highly significant at the 1% level. While, Malay Dominated Shareholders (MalSh), is found to be statistically significant but only at 10% level. Instead, the variable the ethnicity of the Board of Directors' Chairperson (MalCh) is revealed to be not significant. Most of the evidence of this research indicate that ethnicity performs a vital part in influencing the quality of CSR. This is a future evidence that Malays are vigorously participating in the CSR activities. As the government's special racial group, boards dominated by Malays implement a responsive legitimation approach by promoting socially responsibility acts to change the perceptions of other stakeholders (Haniffa and Cooke 2005).

The findings of the paper should be construed considering some limits. Firstly, the data that was examined in this study was for one year of data. Thus, it would be significant to run a longitudinal analysis on yearly basis as it might assist to uncover the trend of CSR. Secondly, the study only covers on the quantity of CSR. In future research, it would be beneficial to investigate quantity and quality of CSR together.

## References

- Abbott, W.F., Monsen, R.J.: On the measurement of corporate social responsibility: self-report disclosure as a method of measuring social involvement. *Acad. Manag. J.* **22**, 501–515 (1979)
- Ahmad, N.N., Sulaiman, M.: Environmental disclosures in Malaysian annual reports: a legitimacy theory perspective. *Int. J. Commer. Manag.* **14**(1), 44–58 (2004)
- Ahmad, N.N., Sulaiman, M., Siswantoro, D.: CSR disclosure in Malaysia: an analysis of annual reports of KLSE listed companies. *IJUM J. Econ. Manag.* **11**(1), 1–37 (2003)
- Al Arussi, A.S., Selamat, M.H., Hanefah, M.M.: Determinants of financial and environmental disclosures through the internet by Malaysian companies. *Asian Rev. Account.* **17**(1), 59–76 (2009)
- Alkdai, H.K., Hanefah, M.M.: Audit committee characteristics and earnings management in Malaysian Shariah-compliant companies. *Bus. Manage. Rev.* **2**(2), 52–61 (2012)
- Andrew, B.H., Gul, F.A., Guthrie, J.E., Teoh, H.Y.: A note on corporate social disclosure practices in developing countries: the case of Malaysia and Singapore. *British Account. Rev.* **21**, 371–376 (1989)
- Anuforo, P.U., Aripin, N., Mohamed, M.I.: The extent of corporate social responsibility reporting among Malaysian firms: evidence from past studies. *Int. J. Manag. Res. Rev.* **8**(5), 8–23 (2018)
- Baydoun, N., Willett, R.: Islam and accounting: ethical issues in the presentation of financial information. *Account., Commer. Finance: Islamic Perspect.* **2**(1), 1–25 (1997)
- Baydoun, N., Willett, R.: Cultural relevance of western accounting systems to developing countries. *Abacus* **31**(1), 67–92 (1995)

- Belal, A.R.: A study of corporate social disclosures in Bangladesh. *Manag. Audit. J.* **1615**, 274–289 (2001)
- Buniamin, S.: The quantity and quality of environmental reporting in annual report of public listed companies in Malaysia. *Issues Soc. Environ. Account.* **4**(2), 115–135 (2010)
- Cerin, P.: Communication in corporate environmental reports. *Corp. Soc. Responsib. Environ. Manag.* **9**, 46–66 (2002)
- Chau, G.K., Gray, S.J.: Ownership structure and corporate voluntary disclosure in Hong Kong and Singapore. *Int. J. Account.* **37**, 247–265 (2002)
- Cooke, T.E.: Disclosure in the corporate annual reports of Swedish companies. *Account. Bus. Res.* **19**(74), 113–124 (1989)
- Cooke, T.E.: An assessment of voluntary disclosure in the annual reports of Japanese corporations. *Int. J. Account.* **26**(3), 174–189 (1991)
- Craig, R., Diga, J.: Corporate accounting disclosure in ASEAN. *J. Int. Financ. Manag. Acc.* **9**(3), 247–273 (1998)
- Elijido-Ten, E.: Determinants of environmental disclosure in a developing country: an application of stakeholder theory. *Asia Pacific Interdisciplinary Research in Accounting (APIRA)*. Singapore: Asia Pacific Interdisciplinary Research in Accounting (APIRA) (2004)
- Esa, E., Ghazali, N.A.M.: Corporate social responsibility and corporate governance in Malaysian government-linked companies. *Corp. Gov.* **12**(3), 292–305 (2012)
- Fatima, A.H., Abdullah, N., Sulaiman, M.: Environmental disclosure quality: examining the impact of the stock exchange of Malaysia's listing requirements. *Soc. Responsib. J.* **11**(4), 904–922 (2015)
- Gambling, T., Abdel Karim, R.A.: *Business and Accounting Ethics in Islam*, Mansell (1991)
- Gelb, D.S., Strawser, J.A.: Corporate social responsibility and financial disclosures: an alternative explanation for increased disclosure. *J. Bus. Ethics* **33**, 1–13 (2001)
- Ghazali, N.A.: Ownership structure and corporate social responsibility disclosure: some Malaysian evidence. *Corp. Gov.: Int. J. Bus. Soc.* **7**(3), 251–266 (2007)
- Gray, R., Kouhy, R., Lavers, S.: Corporate Social and Environmental Reporting: A Review of the Literature and a Longitudinal Study of UK Disclosure. *Account. Audit. Account. J.* **8**(2), 47–77 (1995a)
- Gray, R., Kouhy, R., Lavers, S.: Methodological themes: constructing a research database of social and environmental reporting by UK companies. *Account., Audit. Account. J.* **8**(2), 78–101 (1995b)
- Guthrie, J., Cuganesan, S., Ward, L.: Industry specific social and environmental reporting: the Australian food and beverage industry. *Account. Forum* **32**, 1–15 (2008)
- Guthrie, J., Mathews, M.R.: Corporate Social Accounting in Australasia. In: (Lee.E.Preston, Ed.) *Research in Corporate Social Performance and Policy*, vol. 7, pp. 251–277 (1985).
- Guthrie, J., Parker, L.: Corporate social disclosure practice: a comparative international analysis. *Adv. Public Interest Acc.* **3**, 159–175 (1990)
- Guthrie, J., Parker, L.D.: Corporate social disclosure: a rebuttal of legitimacy theory. *Account. Bus. Res.* **19**(76), 243–252 (1989)
- Guthrie, J., Petty, R., Yongvanich, K., Ricceri, F.: Using content analysis as a research method to inquire into intellectual capital reporting. *J. Intellect. Cap.* **5**(2), 282–293 (2004)
- Haji, A.A.: Corporate social responsibility disclosure over time: evidence from Malaysia. *Manag. Audit. J.* **28**(7), 647–676 (2013)
- Haniffa, R.M., Cooke, T.E.: Culture, corporate governance and disclosure in Malaysian corporations. *Abacus* **38**(3), 317–349 (2002)
- Haniffa, R.M., Cooke, T.E.: The impact of culture and governance on corporate social reporting. *J. Account. Public Policy* **24**, 391–430 (2005a)
- Haniffa, R.M., Cooke, T.E.: The impact of culture and governance on corporate social Reporting Culture, corporate governance and disclosure in Malaysian corporations. *J. Account. Public Policy* **24**(5), 391–430 (2005b)

- Hossain, M., Tan, L., Adams, M.: Voluntary disclosure in an emerging capital market: some empirical evidence from companies listed on the Kuala Lumpur stock exchange. *Int. J. Account.* **29**(4), 334–351 (1994)
- Imam, S.: Corporate social performance reporting in Bangladesh. *Manag. Audit. J.* **15**(3), 133–141 (2000)
- Lewis, M.K.: Islam and accounting. *Account. Forum* **25**(2), 103–127 (2001)
- Majdi, S., Rahman, R.A.: Labour Market Consequences after Fraud and Lawsuit Revelation. *Int. Res. J. Financ. Econ.* **63**, 189–198 (2011)
- Neifar, S., Jarboui, A.: Corporate governance and operational risk voluntary disclosure: evidence from Islamic banks. *Res. Int. Bus. Financ.* **46**, 43–54 (2018)
- Neimark, M.: How to use content analysis in historical research. *Account. Historians Notebook* **6**(2), 19–23 (1983)
- Othman, S., Darus, F., Arshad, R.: The influence of coercive isomorphism on corporate social responsibility reporting and reputation. *Soc. Responsib. J.* **7**(1), 119–135 (2011)
- Rahman, I.M.A., Ismail, K.N.I.K.: Do Representation of Women directors and their demographic characteristics affect CSR disclosure? evidence from Malaysia. *Bus., Manage. Econ. Res.* **2**(4), 81–89 (2016)
- Razak, M.N.: The role of CSR in achieving Vision 2020. Keynote address by the Deputy Prime Minister of Malaysia at the Corporate Social Responsibility Conference, Kuala Lumpur, 21–22 June. Kuala Lumpur, pp. 21–22 June (2004)
- Salleh, Z., Stewart, J., Manson, S.: The impact of board composition and ethnicity on audit quality: evidence from Malaysian companies. *Malaysian Accounting Review* **5**(2), 61–83 (2006)
- Shinde, J.S., Wacker, R., Shinde, U.S., Hou, Z.J.: Superfluity and murkiness in the understanding of social responsibility: a content analysis. *J. Leadersh. Account. Ethics* **8**(3), 30–42 (2011)
- Sundarasan, S.D.D., Tan, J.Y., Rajangam, N.: Board composition and corporate social responsibility in an emerging market. *Corporate Governance International Journal of Business in Society* **16**(1), 35–53 (2016)
- Thompson, P., Zakaria, Z.: Corporate social reporting in Malaysia. *J. Corp. Citizsh.* **13**, 125–136 (2004)
- Uwuigbe, U., Uwuigbe, O., Ajayi, A.O.: Corporate social responsibility disclosures by environmentally visible corporations: a study of selected firms in Nigeria. *Eur. J. Bus. Manag.* **3**(9), 9–17 (2011)
- Yatim, P., Kent, P., Clarkson, P.: Governance structures, ethnicity and audit fees of Malaysian listed firms. *Manag. Audit. J.* **21**(7), 757–782 (2006)
- Zawawi, S.N., Rahman, R.A.: Fraud prevention mechanism and responsibility for fraud detection. *Accountants Today*, pp. 14–16 (2008)

# Elucidating the Role of Human Governance to Eradicate Corruption



Noor Aida Md Noor , Ainul Mohsein Abdul Mohsin ,  
and Siti Nabihah Abdul Khalid 

**Abstract** Corruption is considered a major issue and is faced by many countries, big and small. Efforts have been taken and multiple initiatives have been implemented to reduce this global problem but unfortunately, reports from various studies show that these efforts are ineffective. A person's character, good or bad is said to be the reflection of the state of his soul. Consciences, virtues and ethical behaviour are also believed to be located in the human soul and any damage to the soul results in immoral behaviours such as corruption. Hence, understanding the role of soul in the human body allows for a deeper understanding on how this spiritual element shapes human behaviour. First introduced in 2008, human governance is seen as the pathway to increase compliance and eradicate corruption. It discusses the principle of human beings going back to their essential nature. In essence, it differentiates human beings and being human. Hence, in order to see its importance in eradicating corrupt behaviour, it is important to first understand the concept underlying human governance, human models, and human soul. It provides an in-depth insight on the effectiveness of the concept of human governance in eradicating corrupt behaviours by going back to the essence of humans, a being with a soul.

**Keywords** Corruption · Education of soul · Human governance

## 1 Introduction

To many countries, corruption isn't a foreign issue and great effort has been employed to prevent it from becoming worse. It is deemed to be amongst the most serious issues faced by South-Eastern Asian nations, with only Singapore that has successfully dealt with it (Kapeli and Mohamed 2019). It is believed that when corruption is rampant, it negatively impacts on investments, economic growth, as well as stability and order of the country (Johnston 2014; Kempf and Graycar 2018; Alam Siddiquee and Zafarullah 2020). Based on the report presented by Transparency Index, Malaysia

---

N. A. Md Noor · A. M. Abdul Mohsin (✉) · S. N. Abdul Khalid  
Universiti Sains Malaysia, Gelugor, Malaysia  
e-mail: [ainabdulmohsin@usm.my](mailto:ainabdulmohsin@usm.my)



is ranked as the 57th least corrupted out of 180 nations in the year 2020. The country has dropped six spots in the Corruption Perceptions Index (CPI) as compared to the previous year. Singapore on the other hand, despite starting on an equal foundation as Malaysia, is reported to be the third least corrupt nation (Kapeli and Mohamed 2019). In an effort to deal with corruption, the Malaysian government has demonstrated its commitment in combating corruption by establishing the National Anti-Corruption Plan (NACP) 2019–2023 with the aim to address issues related to governance, integrity and anti-corruption comprehensively within five years time.

It is stated that the success factor of countries such as Singapore, Botswana, New Zealand, Hong Kong and Rwanda in dealing with corruption is mainly due to the political will of their leaders and policy makers (Quah 2017). Lee Kuan Yew, Singapore's first Prime Minister realised the rampant corruption issue faced by other Asian countries and put his utmost commitment in establishing a corrupt-free and effective government. Unfortunately, countries with high levels of corruption typically lack political will because the corrupted are usually in powerful positions and would resort to forms of corruption to maintain power (Senior 2006). Malaysia's failure to combat corruption is primarily due to four factors: "lack of political will, failure of proposed initiative to address causes of corruption, duplication and a lack of public support for corruption prevention" (Kapeli and Mohamed 2019). It is understandable that when dealing with the issue of the lack of political will, humans are ultimately the ones who are accountable and the driving force behind it. As a consequence, it is critical to concentrate on the human aspect of things.

The philosophy of Human Governance was first introduced by Salleh and Ahmad in their book, *Human Governance: A Paradigm Shift in Governing Corporations*. Although the word "governance" first surfaced to refer to the stewardship of a ship or organisation, it has now evolved to be a word that is widely used to denote the involvement of rules and regulation (Salleh and Ahmad 2008; Salleh 2015). It is argued that it is concerned with the governance of latent potential innate in man (Salleh and Anis 2019). It stated that "Human governance represents the idea that certain human values are eternally true, transcending man-made rules and regulations, while representing an untainted science of consciousness." (Ramli et al. 2019) The spiritual aspect is very vital, and therefore, it is of great importance to ensure that this aspect is well preserved in man (Ramli et al. 2019). Human conscience is located in the soul, alongside virtue and ethical behaviour. Therefore, the concept of "soul" is viewed to be crucial in this philosophy in ensuring good and virtuous conduct. By understanding the important role that the human soul plays, it is believed that human governance will collectively be seen as the pathway to promote compliance and eradicate corruption. The basic research question of this paper is to discuss why the concept of human governance is important in eradicating corruption.

Codes of Ethics have traditionally been used to promote good ethical conduct with great emphasis on rules and principles to govern the external behaviour. Codes of Ethics tend to fail due to the flaws in the concepts of human psychology that they are based on Salleh et al. (2009). The continuous unethical conduct despite the presence of ethical codes is an indicator that they are an inefficient tool (Umaruddin 2003). Essentially, humans as moral agents are the ones responsible over their actions, good

or bad. Having a conscience on the negative impacts of such disgraceful conduct for instance, corruption may help protect oneself from getting involved (Nkyabonaki 2019). As a result, it is important that we shift the focus away from external rules and toward the moral agents themselves, humans, in our efforts to eradicate corruption.

## 2 Concept of Human Governance

Human governance is deemed as an inner mechanism that emerges when humans are viewed as having a soul at the centre of their being in order to manifest oneness, wholeness, and excellence (Salleh and Ahmad 2008). A society can be divided into three groups when dealing with corruption: the incorruptibles, the corrupts, and the corruptibles. Apart from focusing on the sentences and punishment for the corrupts, emphasis also should be given to the corruptibles (students, the teachers, bank officers, MRT workers, law enforcers, policy makers, and every other person) who may encounter, or have already encountered situations that may cause their individual integrity to falter (Salleh 2015). The incorruptibles on the other hand are people who deter themselves from actions that are inclined to corruption at all costs. When dealing with corruption, it can be generally accepted that inner dimension influences one's behaviour and actions. As a result, great emphasis should be placed on ensuring positive character traits are reflected, as well as soul education should be widely and consciously practised in order to produce a corrupt free nation.

The concept of human governance is gaining traction in Malaysia, with the government realising its critical role in shaping the country for the better. According to "The NACP was developed with practical goals based on the initiatives done by government and private agencies to address issues around corruption, integrity and governance for the coming five years" (Ochulor and Bassey 2010). The NACP also gives great focus on the need to elevate education effectiveness and the development of public workers via programs based on the concept of human governance under Strategic Objective 2.4. This is seen as important because when humans are in touch with their "inner self and consciousness", people are more compliant (Wan Abdullah et al. 2020). Instead of relying on external factors to govern the people, human governance focuses on improving individual inner qualities as the foundation of good behaviour, with the goal of collectively striving to be a morally developed nation. It is also mentioned that human governance principle is to be utilised in the overall implementation of NACP to ensure it continues to be relevant and "live beyond its mandated timeline" (Wan Abdullah et al. 2020). This clearly shows the government's confidence in human governance as the crucial foundation for the future of Malaysia. With Malaysia being a melting pot of cultures, races and religions, the concept of human governance is one of shared values because, we all share the same basic essence of humanity, which includes a soul at the end of the day.

Prior to the Scientific Revolution Era that started with Copernicus, the material and non-material aspects of existence are generally accepted as being integral. The Scientific Revolution "opened a new world to humankind in that it emancipated the

material world, and thus science, from its long connection and constrain with theological dogma, the dichotomy between human mind and the external world ultimately separated human from God and the natural world” (National Anti-Corruption Plan 2019). This in return led to the view of the world consisting of dual realms that separates physical and non-physical dimension as postulated by Descartes. More and more scientific discoveries were made in this era which progressed towards positivism. The nature of positivism requires that science is certain and the relative truth (Anis 2019). This has made humans less and less tied to things that are not empirical such as religion and further widened the gap between religion and science. However, it is important to note that just because something is not scientifically proven, it does not exist. This is acknowledged by a group of quantum physicists who believe in the “non-physical origin of consciousness” and the existence of physical and non-physical at once (National Anti-Corruption Plan 2019). Erwin Schrödinger, Werner Heisenberg, and Amit Goswami are among the notable quantum physicists who hold this viewpoint.

There should not be a separation between science and non-science because ultimately, everything on Earth works interdependently. Human governance advocates oneness and wholeness. This is not only limited to their relationship with themselves and the Divine, but also rather inclusive of all beings. In the teachings of major religions, for instance Islam, Judaism and Christianity for instance, it is believed that humans are stewards or dominions of God whose responsibility does not only limit to worshiping God but also to maintain good relationship with other beings and the environment. In the Islamic context specifically, Muslims are to practice good relationships with Allah (*hablum minallah*), amongst humans (*hablum minannas*), and with the environment (*hablum minal alam*) (Sari and Arroisi 2021). When all these relationships are positively maintained in day-to-day actions, humans will not commit things that are considered harmful for themselves and the rest of the beings. Consequently, they will make conscious efforts to play the role that they are supposed to play on Earth in order to achieve the ultimate good in life and practise virtue.

## ***2.1 Virtue Ethics and Human Governance***

Virtue Ethics or Virtue Theory has long been discussed. In fact, it is the most ancient tradition in the philosophy of the West and originates from ancient Greek civilisation with Aristotle being the earliest to discuss the topic in his infamous book entitled “Nicomachean Ethics” (Rohmah 2019). Virtue Ethics is one of the three major moral theories alongside deontology that focuses on following moral rules and consequentialism that suggests the rightness of an action which is determined by the outcome. However, the main benefit of Virtue Ethics is it does not compromise people’s motivation and reasons, succumbing to ‘moral schizophrenia’ like most moral theories and eventually, makes it difficult for the agents to achieve a good life (Arjoon 2000).

“Virtue ethics offers an account of right and wrong based on what a ‘virtuous agent’ emphasizes following moral rules, and consequentialism, which determines

the permissibility of an action from its consequences” (Arjoon 2000). The word virtue can be traced back to the word “Arete” in Greek or “Virtus” in Latin which when translated, carries the meaning of excellence and manliness, respectively. Aristotle’s Virtue Theory has been adapted by several other prominent figures in philosophy such as Aquinas and Al-Ghazali who both added a more in-depth association to God in their virtue views. The impact that Virtue Theory had weakened throughout the period of Age of Reason or also known as “Renaissance the Scientific Revolution and Enlightenment” before being revived by contemporary era philosophers, Philippa Foot and Alasdair Macintyre (Rohmah 2019). In both classical and modern views, virtue is seen as the moral and intellectual excellences of one’s character and the course of action to nurture a highly functional and strong community.

Aristotle introduced a comprehensive theory with emphasis on the kind of person man wants to be, in other words it answers the question of “What kind of person do I want to be?” (Sakellariou 2015). Aristotle in *Nicomachean Ethics* had noted the difference between intellectual and moral virtues is that the former is acquired through the process of learning whilst the latter is concerned with the will and achievable via habituation (Rohmah 2019). “Phronesis” or termed “practical wisdom” in philosophical literature and the concept of moderation in virtue are the two things Aristotle based his practical ethics on Audi (2012), Irwin (1989). It is vital for people to practise phronesis and be virtuous in their lives in order to reach what he famously termed as *eudaimonia* or “human flourishing, or achieving one’s full potential” (Rohmah 2019; Irwin 1989; Kakkori and Huttunen 2007). Aristotle described *eudaimonia* as the “excellence in the human soul” (Bright et al. 2014). It noted that “To have a virtue is to have a praiseworthy character trait appropriate to pursuing the particular kind of good with respect to which the trait counts as a virtue” (Sakellariou 2015). However, it is worth noting that Aristotle did not share on how one should behave but rather focuses on a person’s character as he believes that by focusing on being a good person, the right actions will ensue.

Out of 15 virtue characters proposed by Aristotle, there are four that are considered as cardinal virtues (courage, temperance, justice and prudence), while the rest are closely related to them (Rohmah 2019). These four cardinal virtues are consistent with the teachings of Islamic scholar Imam Al-Ghazali, Catholic Priest Aquinas, and many other scholars (Salleh et al. 2009; Aristotle 1999). This shows that despite having different faiths, living life virtuously is universally demanded. This is in line with Dahlsgaard, Peterson and Seligman’s finding that there are six universal virtues shared by philosophical and religious traditions around the world (Confucianism, Taoism, Buddhism, Hinduism, Athenian philosophy, Judaism, Christianity, and Islam). Below are six core virtues (Table 1):

Virtue Ethics are relevant to be discussed, especially when they involve the topic of human governance as it helps in determining the right to do which is something that human governance promotes. It has the potential to succeed even in countries which are made up of various ethnicities and cultures as this view is commonly shared among humans, despite the difference in individual theological views. The

**Table 1** Core virtues (Dahlsgaard et al. 2005)

Virtue	Description
Courage	Emotional strengths that involve the exercise of will to accomplish goals in the face of opposition, external or internal; examples include bravery, perseverance, and authenticity (honesty)
Justice	Civic strengths that underlie healthy community life; examples include fairness, leadership, and citizenship or teamwork
Humanity	Interpersonal strengths that involve “tending and befriending” others; examples include love and kindness
Temperance	Strengths that protect against excess; examples include forgiveness, humility, prudence, and self-control
Wisdom	Cognitive strengths that entail the acquisition and use of knowledge; examples include creativity, curiosity, judgement, and perspective (providing counsel to others)
Transcendence	Strengths that forge connections to the larger universe and thereby provide meaning; examples include gratitude, hope, and spirituality

promotion of this theory may help to increase the level of compliance and decrease the corruption-inclined behaviours of its people.

**Human Model**

With the NACP giving great focus on human governance in eradicating corruption, it is important to have a more in-depth understanding of human models. It is suggested that in the effort to understand human character, we should first understand human nature based on the Greek, Islamic, Latin and English civilisation that described humans as a ternary model (Salleh and Ahmad 2008). Humans are comprised of three aspects; body, soul, and spirit (Intellect) (Dahlsgaard et al. 2005) and summarised the terms in the four aforementioned civilisation as below (Table 2):

Spirit and Intellect are identifiable with one another. While Intellect is considered “above” or “beyond” the soul, the mind or reason and other “human faculties such as will, affect or sentiment, imagination, and memory” are the substances in the soul (Dahlsgaard et al. 2005). The heart is the place of the intellect faculty and with its place being “above” the soul, it is considered “angelic” (Dahlsgaard et al. 2005). To better understand Intellect, Intellect or ‘aql differs from the conventional understanding of the brain (Stoddart 1985). It is inborn in man and the place where knowledge forms.

**Table 2** Three human aspects (Stoddart 1985)

Civilisation	The three human aspects		
English	Spirit (Intellect)	Soul	Body
Greek	Pneuma (Nous)	Psyche	Soma
Latin	Spiritus	Anima	Corpus
Islamic	Ruh (‘Aql)	Nafs	Jism

The three human aspects are corroborated by Salleh and Ahmad in 2008 (Ramli et al. 2019) and they postulated a modern human ternary model as follow:

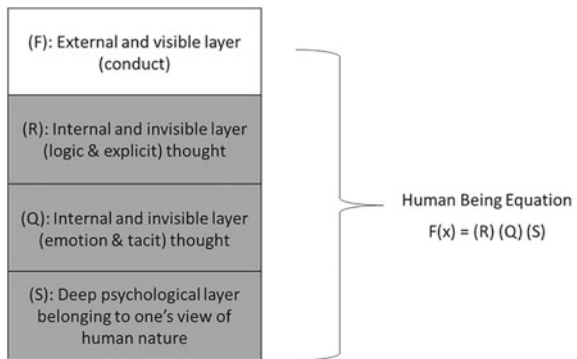
1. “Humans are viewed as the existence of a non-material soul residing in the biological body for locomotion”.
2. “The heart is the seat of the soul which embraces consciousness, values, and ethical behaviour”.
3. “While conscience is the ability of the mind to tell between right and wrong”.

Another human model worth exploring is Seiemon Ioi’s Four-layer Structural System Model. The top layer (F) refers to the layer that can be seen and carried out by the other three intangible inner layers. Layer (R) and (Q) deals with the inner substance of man that “is thought to conduct logical and explicit thought” and “emotional and tacit thought” respectively (Mat Akhir 2012). Layer (S) on the other hand deals with the psychological aspect that comprises ‘(R) and (Q) based on an individual’s perspective of human beings. The layer that distinguishes between man and beast is layer (R), where animals do not possess any logical aspect. It has been discovered that inner core values in man are what cause changes in culture of practise, and since the model is based on oriental and occidental thought, it is deemed suitable for use by both Japanese and non-Japanese society at large (Mat Akhir 2012) (Fig. 1).

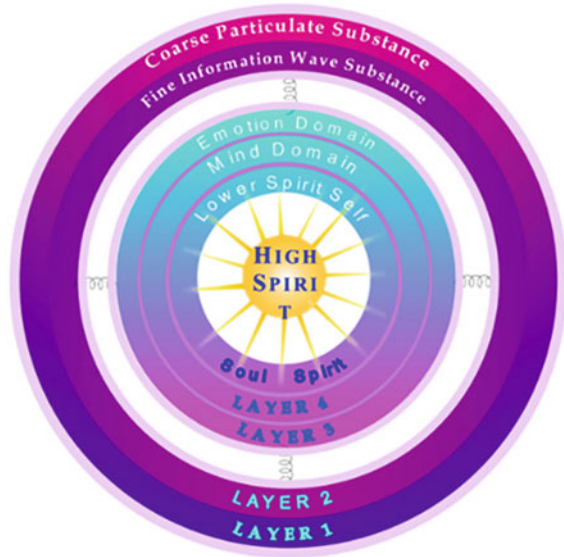
The next human model that is relevant to be touched on in this paper is by Tiller, Dibble, and Kohane. They share the Western New Science model and represent a good step forward in the evolution of science that acknowledges the non-material perspective (Tiller et al. 2001). Despite the fact that they are material scientists, they have introduced the concept of human as non-material essence in a bio-bodysuit. They explained the three layers in man where the two outer layers represent the physical reality, the middle layer as the soul self that acts as the middleman between bodily constitution and spirit, and at the core of it all, the God self (Salleh and Anis 2019; Anis 2019; Tiller et al. 2001) (Fig. 2).

The human models discussed in this paper acknowledged that humans are more than meets the eye. Despite being introduced by people of various cultures and backgrounds, they share the concept that humans as a highly complex being and

**Fig. 1** Four-layer structural system model



**Fig. 2** Whole person as bio-bodysuit model (Tiller et al. 2001)



instead of putting too much emphasis on the outer dimension, a more rigorous effort should be directed to the non-observable. The intangible and non-material aspect of what is known as the soul contains the critical elements that govern our actions, and it is the very foundation of the concept of human governance. Therefore, a deeper understanding of the soul is integral in order to employ human governance as a tool in eradicating corruption.

### Concept of Soul

The concept of the human soul has long been discussed. Aristotle believes that all organisms possess soul in them, however the same way all physical beings have shapes, there are also various kinds of soul (Stoddart 1985). According to Aristotle, ‘psyche’ or soul is the principle of life and the element that distinguishes between living and non-living (Tiller et al. 2001). The concepts of virtue and soul are intertwined and are something that we share with plants and animals, prompting Aristotle to describe humans as rational animals (Beier 2016). However, the aspects that distinguish humans from animals are intellect and will, which are located in one’s soul and are present in humans but absent in beasts (Aristotle 1999; Stoddart 1985; Feser 2018). It is to be emphasised that the activity of acquiring knowledge is linked to the soul since thinking is considered as one of man’s soul faculties (Audi 2012). In short, the state of the soul plays a major role in dictating actions and therefore, it is vital to ensure that this aspect is always well preserved.

Despite the fact that Aquinas and Al-Ghazali lived in different eras, held different beliefs, and practised different cultures, they share a few similarities in their perspectives on ethics and the soul. Both religious figures believed in the concept of soul



and saw happiness as part of the health of the soul and its sickness leads to unhappiness. Just how different sickness needs specific medication and remedy, the same goes for the human soul (Aristotle 1999). It is to be treated specifically and effectively. Both Aquinas and Al-Ghazali added to the virtue view of Aristotle; Aquinas introduces his religious virtues whilst Al-Ghazali proposed sufic virtues (Aristotle 1999). Aquinas, an Italian Catholic priest, and philosopher agrees with Aristotle's claim on humans as rational animals, and he also adds that humans are a hybrid of angels and apes. Aquinas argues that despite the soul being the substantial form of our body, the soul persists even after the body is without life, in other words, it merely becomes a corpse or "human-shaped lump of matter, probably prime matter" (Afifah 2018). Some argued on this, how can the soul linger on without a vessel? Aquinas tends to believe that there is a state called "incomplete substance" that the soul will be in after death. The substance's physical and powers may not manifest anymore, however, "the incorporeal properties and powers continue" as it is not fully exhausted by its vessel, the human body (Beier 2016).

In the Christian belief system, the body and soul will once again be complete when the body is resurrected on the Judgement Day and the two parts, body and soul will never be separated again. Aquinas believed that our actions are judged to be good by our intellectual faculties, and that these decisions influence a person's character (Aristotle 1999; Afifah 2018). Aristotle claimed that "The telos of a living being is in line with the order of its soul, and the latter corresponds to its specific nature" (Tiller et al. 2001). Like Aristotle, Aquinas adhered to the belief that each living thing possesses their own telos or goals and the telos of humans is to live a life worth living or reach the state of Eudaimon or happiness (Irwin 1989). What does life worth living means? It refers to a life where one's activity of the soul adheres to virtues (Irwin 1989).

Imam Al-Ghazali shared the same perspective on the soul as something that plays a significant role in human life and character. Al-Ghazali, like most Islamic scholars, believes in the eternity properties of the soul and it is in line with Aquinas' view on soul (Aristotle 1999). However, it is added that Al Ghazali's perspective on the human soul is regarded as having a higher status than Aquinas the Islamic scholar provided a more comprehensive tie between exercising virtues, training the soul and practising ethics. Al-Ghazali discovered that all spiritual phenomena stem from the essence of humans, known as "Self" (Salleh et al. 2009). It refers to the same substance in the human body that Aquinas and Aristotle acknowledge as soul, but Al-Ghazali discusses it in four components, Qalb or heart, Ruh or spirit, Nafs or soul, and 'Aql or intellect. In regards to the four components, Al-Ghazali concludes that they share a common definition, apart from the separate meaning they carry: "the physical Qalb, the Ruh which is related to the body and the nerves, the desire Nafs, and 'Aql the place from which knowledge develops" (Krista 2012). The said fifth meaning that blends these four terms is "the essence of the human being by which he knows all things i.e. something subtle in man that knows and perceives" (Krista 2012).

The concept of soul in the pursuit of happiness has long been discussed by many philosophers and theologians since the ancient Greek times. According to Aristotle,



happiness encompasses obtaining all of the goods that lead to human perfection and enrichment and can only be acquired through the practise of virtue (Mat Akhir 2008). This is heavily dependent on one's soul state, and the pursuit of happiness may render one with difficult choices. Imam Al Ghazali on the other hand viewed happiness as "the unification between knowledge, deeds, spiritual, and physical" to increase their level of faithfulness and piety towards Allah (Hosseini et al. 2016). This pursuit revolves around the notion that the non-physical dimension aspect which is the "soul" as the aspect that brings humans closer to the Divine, while all bodily functions in our body play a secondary role in assisting the soul (Yahya et al. 2020). The function does not exclude the senses and powers innate in lower animals and the power that sets human beings apart from animals the our reason faculty, the power of knowledge (Yahya et al. 2020). The lack of focus people gives to their state of soul which ultimately dictates their action may be seen as the reason for an increased and prolonged problem that we face currently, corruption.

As previously discussed, human governance is a concept that emphasises humans as having a soul at their core and is viewed as a means to promote compliant behaviour. As a result, it is almost impossible to separate the conversation about soul when discussing the natural essence of man. The truth is, people nowadays are so preoccupied with chasing after numbers, observables, and a materialistic world that makes us tend to forget who we are. The "what," "who," and "why" we were placed on this planet in the first place. Therefore, in order to promote compliant behaviour, we should reconnect with our spiritual side and understand the theory of the soul.

### **Human Governance in Eradicating Corruption**

One's character is the state of his soul. It is understood that in order for one to be virtuous, his intellectual faculty must always be superior to that of appetite or self-assertion to ensure that good character is reflected. "The only a person whose goodness or badness has matured into a habit is justly to be identified as a man of good or bad character" (Salleh and Anis 2019). Al-akhlaq, which means character in Arabic, is not only used in relation to knowledge of good versus bad, but rather knowledge is internalised into the soul, Nafs, which is located in the heart, Qalb, before leading to habitual actions that do not require much thought (Feser 2018). Since it is agreed that virtue is important and character reflects one's state of soul, focus should be concentrated on the human soul to ensure people have good characters.

"Human governance looks at the axiology, which includes values, religion, belief systems, culture, and ethics, in order to foster a culture of trust in which the human within the organisation is viewed as the soul of the organisation" (Mangini 2018). It differs from the traditional corporate governance which acts as the external human-made rule or law to promote good ethical behaviour. Human governance is concerned with doing the right thing, having the quality of ethical values and moral conduct by connecting with their innate qualities, and thus the issue of maintaining trust becomes secondary (Salleh and Aziuddin 2010). It contested that with Malaysia being a melting pot with people of various beliefs and practises, a holistic human governance approach is important in ensuring professional conduct (Lim and Lee 2016). The subject of integrity is central in human governance as it also relates to

the appreciation and practice of virtuous character based on the idea that God is all-knowing and never misses what people do (Sarawati 2018). Considering the notion that human consciences, virtues and ethical behaviour are all located in the soul, any damage to the soul will result in morally unethical behaviours such as corruption. Therefore, the purity state of the soul has to be emphasised to achieve the common qualities universally recognised in every society; honesty, integrity, respect, trust and excellence (Muhamad et al. 2019).

By inculcating human governance, it ensures that employees in an organisation are always in their best behaviour, carry out their duties in a positive environment, as well as ensure ethical and moral conduct are in place (Zulkefli et al. 2019). This is the reason why the principle of human governance is seen as universal, suitable and ought to be adopted by all, no matter what the circumstances are. Since it focuses on the inner mechanism of humans, the habitual conduct in a person's daily activities will naturally be picked up and practised in a professional setting. This includes refraining from unhealthy and immoral behaviour such as participating in corruption in any form, and as a result, people of higher integrity will be produced.

### 3 Conclusion

Based on the virtue theory asserted by Aristotle, concurred by Aquinas and Al-Ghazali, it is understood that virtuousness can be acquired through the process of habituation and practise. Aristotle, Aquinas and Al-Ghazali, all believed that people who are virtuous will attain a good life and happiness. Humans are indeed a complex being made up of both, physical and spiritual aspects that are interconnected and cannot function without one another. Government must play its role in pushing this issue forward and enhance their focus on the non-physical aspect of human as a way or tool to eradicate corruption. Emphasis should be given in nurturing the human soul as it is its state that determines one's character. The philosophy of human governance is relevant to be implemented as part of people's lives to eradicate corruption-inclined behaviour as well as ensuring a future with great focus on transparency, accountability, and integrity. The concept is vital because it goes back to the core being of human itself, being made up of a soul. Having people or citizens with good soul ensures good behaviour, allows the nation to eradicate corruption-prone behaviours among its people and increase the nations development process altogether.

**Acknowledgements** We would like to express our utmost gratitude to the Ministry of Higher Education Malaysia (MoHE) for the Fundamental Research Grant Scheme with Project Code: FRGS/1/2020/SS02/USM/02/1 awarded to carry out this research.

## References

- Afifah, N.: Exploring Character Education of Imam Al-Ghazali in Bidayah al-Hidayah, Maulana Malik Ibrahim State Islamic University Malang (2018)
- Alam Siddiquee, N., Zafarullah, H.: Absolute Power, Absolute Venality: The Politics of Corruption and Anti-corruption in Malaysia (2020). <https://doi.org/10.1080/10999922.2020.1830541>
- Anis, M.H.: Beyond the Physical Realm of Mindfulness: The Nature of Reality and Concept of Mind in Traditional Eastern Philosophy of Sufism and the Quantum Paradigm, University of Oulu (2019)
- Aristotle: Nicomachean Ethics (M. Oswald, Trans.). Prentice Hall, Upper Saddle River (1999)
- Arjoon, S.: Virtue theory as a dynamic theory of business. *J. Bus. Ethics* **28**(2), 159–178 (2000). <https://doi.org/10.1023/A:1006339112331>
- Audi, R.: Virtue ethics as a resource in business. *Bus. Ethics Q.* **22**(2) (2012). <https://doi.org/10.5840/beq201222220>.
- Beier, K.: The soul, the virtues, and the human good: comments on Aristotle's moral psychology. *Labyrinth* **18**(2), 137 (2016). <https://doi.org/10.25180/lj.v18i2.51>
- Bright, D.S., Winn, B.A., Kanov, J.: Reconsidering virtue: differences of perspective in virtue ethics and the positive social sciences. *J. Bus. Ethics* **119**(4), 445–460 (2014). <https://doi.org/10.1007/s10551-013-1832-x>
- Dahlsgaard, K., Peterson, C., Seligman, M.E.P.: Shared virtue: the convergence of valued human strengths across culture and history. *Rev. Gen. Psychol.* **9**(3), 203–213 (2005). <https://doi.org/10.1037/1089-2680.9.3.203>
- Feser, E.: Aquinas on the Human Soul. Wiley-Blackwell, Hoboken (2018)
- Hosseini, H., Zareie, T., Karami, M.: Evaluation of happiness concept in the Aristotle viewpoint. *J. Appl. Environ. Biol. Sci.* **6**(3), 104–111 (2016)
- Irwin, T.: Classical Thought. Oxford University Press, Oxford (1989)
- Johnston, M.: Corruption, Contention, and Reform. Cambridge University Press, Cambridge (2014)
- Kakkori, L., Huttunen, R.: Aristotle and pedagogical ethics. *Paid. J. Can. Philos. Educ. Soc.* **16**(1), 17–28 (2007). <https://doi.org/10.7202/1072603ar>
- Kapeli, N.S., Mohamed, N.: Battling corruption in Malaysia: what can be learned? *J. Financ. Crime* **26**(2), 549–555 (2019). <https://doi.org/10.1108/JFC-04-2018-0044>
- Kempf, R.J., Graycar, A.: Dimensions of authority in oversight agencies: American and Australian comparisons. *Int. J. Public Adm.* **41**, 1145–1156 (2018). <https://doi.org/10.1080/01900692.2017.1347947>
- Krista, H.D.: Thomas Aquinas: Soul-Body Connection and the Afterlife, University of Missouri (2012)
- Lim, G.N., Lee, M.S.: Human governance for teaching at higher learning institution in Malaysia. *J. Public Adm. Gov.* **6**(1), 1 (2016). <https://doi.org/10.5296/jpag.v6i1.8849>
- Mangini, M.: Rationality and ethics between western and Islamic tradition. *Religions* **9**(10) (2018). <https://doi.org/10.3390/rel9100302>
- Mat Akhir, N.S.: Al-Ghazali and his theory of the soul a comparative study. Penerbit Universiti Sains Malaysia, Pulau Pinang (2008)
- Mat Akhir, N.S.: Aql and noble character: a review from a scholarly perspective. *Soc. Sci.* **7**(5), 717–724 (2012). <https://doi.org/10.3923/sscience.2012.717.724>
- Muhamad, H., Salleh, A., Kasim, N.A.A., Suppiah, S.D.K.: Human governance: how ethical behaviour of accountants can be improved. *Int. J. Acad. Res. Bus. Soc. Sci.* **9**(7), 370–385 (2019). <https://doi.org/10.6007/ijarbss/v9-i7/6129>
- Naji, Z.S., Javadi, M., Alizamani, A.A.: The ethical dignity of human soul (The reflections of AL-Ghazali and Aquinas on the role of belief in human soul in the solution of ethical issues). *Hekmat va Falsafeh Wisdom Philos.* **6**(4), 69–80 (2011). <http://www.noormags.ir/view/fa/articlepage/1006614>
- National Anti-Corruption Plan: National Anti-Corruption Plan 2019 - 2023 (2019)

- Nkyabonaki, J.: Effectiveness of the public service code of ethics in controlling corrupt behaviour in the public service: opinion from the grassroots at Toangoma Ward-Temeke Municipal Council. *J. Asian Afr. Stud.* **54**(8), 1195–1212 (2019). <https://doi.org/10.1177/0021909619862835>
- Ochulor, C.L., Bassey, E.P.: Analysis of corruption from the ethical and moral perspectives. *Eur. J. Sci. Res.* **44**(3), 466–476 (2010)
- Quah, J.S.T.: Five success stories in combating corruption: lessons for policy makers. *Asian Educ. Dev. Stud.* **6**(3), 275–289 (2017). <https://doi.org/10.1108/AEDS-03-2017-0031>
- Ramli, N.A., Abdul Mohsin, A.M., Salleh, A., Mat Akhir, N.S.: Taxonomy of human characters in the governance of Malaysian government procurement practices – a theoretical. *Int. J. Account. Financ. Bus.* **4**(22), 34–50 (2019)
- Rohmah, H.: Pembinaan Karakter Siswa di SMP Negeri 4 Metro. *Ri'ayah J. Sos. Dan Keagamaan* **4**(01), 98 (2019). <https://doi.org/10.32332/riayah.v4i01.1510>
- Sakellariou, A.: Virtue ethics and its potential as the leading moral theory. *Discuss. Publ. Case West. Reserv. Univ.* **12**(1), 1–8 (2015). <http://www.inquiriesjournal.com/articles/1385/virtue-ethics-and-moral-theory>
- Salleh, A., Anis, M.H.: Insights: governance, integrity and corruption: a commentary from the perspective of human governance. *J. Gov. Integr.* **2**(2), 1–2 (2019). <https://doi.org/10.15282/jgi.2.2.2019.5462>
- Salleh, A., Aziuddin, A.: Human governance: bringing the meaning of integrity in the life of professional accountants. *IFAC Artic. Merit E-B.* **1944**, 1–11 (2010)
- Salleh, A., Ahmad, A., Kumar, N.: Human governance: a neglected mantra for continuous performance improvement. *Perform. Improv.* **48**(9), 26–30 (2009). <https://doi.org/10.1002/pfi.20105>
- Salleh, A.: Human governance from the accountants' perspective conversation questions (2015). [http://www.anm.gov.my/images/PDF/napsac/NAPSAC\\_2015\\_-\\_Kertas\\_Kerja\\_3\\_-\\_Prof\\_Dr\\_Arfah.pdf](http://www.anm.gov.my/images/PDF/napsac/NAPSAC_2015_-_Kertas_Kerja_3_-_Prof_Dr_Arfah.pdf). Accessed 22 June 2021
- Salleh, A., Ahmad, A.: *Human Governance: A Paradigm Shift in Governing Corporations*. MPH, Kuala Lumpur (2008)
- Sarawati, S.: Human governance: the art of emotional intelligence of leader through the model of spirituality. *Int. J. Eng. Technol.* **7**(2.29), 383–386 (2018). <https://doi.org/10.14419/ijet.v7i2.29.13659>
- Sari, N., Arroisi, J.: Critic on Auguste Comte's Positivism in Sociology (An Islamic Sociology Perspective). *Transformatif* **4**(2), 211–221 (2021). <https://doi.org/10.23971/ta.v4i2.2175>
- Senior, I.: *Corruption – The World's Big C*. Institute of Economic Affairs, London (2006)
- Stoddart, W.: The role of culture in education. *Stud. Comp. Relig.* **11**(1) (1985). [www.studiesincomparativereligion.com](http://www.studiesincomparativereligion.com). Accessed 13 June 2021
- Tiller, W., Dibble, W., Kohane, M.: *Conscious Acts of Creation: The Emergence of a New Physics*. Pavior Publishing, Walnut Creek (2001)
- Uchida, T., Ioi, S.: Utilizing the 'Four-layer Structural System Model' to organization Management- A Suggestion from a New Point of View (2000). <http://gebrcc.nccu.edu.tw/proceedings/APDSI/2000/list/pdf/P-197.pdf>. Accessed 22 June 2021
- Umaruddin, M.: *The Ethical Philosophy of Al-Ghazzali*. A.S. Noordeen, Kuala Lumpur (2003)
- Wan Abdullah, W.M.T., Daud, S., Muhammad Hanapiyah, Z.: Human governance and corruption risk in Malaysia public sector. *Glob. Bus. Manag. Res. Int. J.* **12**(4), 721–731 (2020)
- Yahya, N., Syed Omar, S.H., Yusoff, S.H.M., Shuhari, M.H.S., Rozali, M.H.: Element of happiness by Al Ghazali and relation in Islamic Psychospiritual. *Int. J. Acad. Res. Bus. Soc. Sci.* **10**(11), 1248–1253 (2020). <https://doi.org/10.6007/ijarbss/v10-i11/8202>
- Zulkefli, M.H., Salina, D., Taufik, W.A.: Maintaining integrity among employees through empowerment religiosity and spirituality. *Int. J. Bus. Econ. Law* **19**(2), 38–46 (2019)

# Islamic Social Finance, Modern Slavery of Children, and Sustainable Development Goals in Indonesia



Sari Lestari Zainal Ridho and Dodik Siswanto

**Abstract** The purpose of this study is to build an optimization model of Islamic social finance and evaluate the existence of Islamic social finance and its effect on reducing modern slavery of children, using the Islamic social finance optimization framework approach in alleviating poverty and several sustainable development goals in Indonesia. The existence of modern slavery which has re-emerged is an important concern to study because slavery is anti-development. Moreover, Islam seeks to abolish slavery, so that modern slavery should no longer occur in Islamic countries, including Indonesia. This research is conducted using a quantitative descriptive method, with Partial Least Square Method and data from Indonesia in particular since Indonesia is a country with the largest Muslim population in the world. This research is important to be carried out since this subject has never been studied quantitatively. The findings of this study, which are based on the discussion of existing data indicate that quantitatively, in the short term there is no impact on the distribution of Islamic social finance funds, in the form of zakat, infaq, sadaqah on modern slavery of children in Indonesia. Thus, Indonesia, considering that the existence of modern slavery is anti-development as marked by its effect on welfare, as an Islamic country with the largest population in the world should pay more attention to the eradication of modern slavery of children.

**Keywords** Economic · Islamic finance · Labor

## 1 Introduction

The Black Lives Matter Movement, in the United States, brings back the dark history of Black lives and one of them is slavery, considering that Black Lives is inseparable

---

S. L. Z. Ridho (✉)

Politeknik Negeri Sriwijaya, Palembang 30139, Sumatera Selatan, Indonesia

e-mail: [sarilestari@polsri.ac.id](mailto:sarilestari@polsri.ac.id)

D. Siswanto

Universitas Indonesia, Depok 16424, Jawa Barat, Indonesia

e-mail: [dodik.siswanto@ui.ac.id](mailto:dodik.siswanto@ui.ac.id)

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

B. Alareeni and A. Hamdan (eds.), *Sustainable Finance, Digitalization and the Role of Technology*, Lecture Notes in Networks and Systems 487,

[https://doi.org/10.1007/978-3-031-08084-5\\_53](https://doi.org/10.1007/978-3-031-08084-5_53)

729

from the history of slavery. In the long history of slavery, it is believed that some countries that practiced slavery at the beginning of human history were Islamic countries. Over time, the history of human civilization has changed, but the issue of slavery has now returned with a different face, more modern, that arises due to the gap between the rich and the poor, which allows exploitation with many people still trapped in poverty (Harding 2019).

Islam is indeed born in countries that undergo slavery, but Islam is a religion that seeks to eradicate slavery progressively, because slavery which was previously entrenched in these countries could not be abolished instantly along with the emergence of Islam. In Islam, slaves and the poor are two of the eight groups entitled to receive zakat. Based on Q.S. At-Taubah: 60, Zakah expenditures are intended only for the poor, the needy, those employed to collect [zakah], and for bringing hearts together [for Islam] and for freeing captives [or slaves], those who are in debt, the cause of Allah, and the [stranded] traveller—as an obligation [imposed] by Allah.

Zakat, infaq, sadaqah are the components/instrument of Islamic Social Financial (Beik 2019; Obaidullah and Shirazi 2017) which distribution is sought to optimally distribute welfare in the community and eliminate economic exploitation, under the Maqasid Sharia. Maqasid Sharia seeks to solve human welfare problems comprehensively, in line with sustainable development goals (Hardiana 2009). Hence, there are efforts to encourage the optimization of Islamic social finance (ZISWAF) for poverty alleviation and to achieve several Sustainable Development Goals (SDGs) (Bashori 2017). Thus it is expected that the ZISWAF will be able to create sustainable prosperity because welfare is believed to be more oriented to current conditions or in the short term, while sustainability is more oriented towards the future (Bakar et al. 2014).

The Islamic social financial optimization model that has been developed (Bashori 2017), aimed at achieving the 1st sustainable development agenda (end poverty), 2 (end hunger), 3 (good health), 4 (quality of education), 10 (reduced inequality). It is not yet directed at the goals of the 8th Sustainable Development Goals, decent work, with one of the targets is to end modern slavery (Johnston 2016), in addition to efforts to optimize Islamic social finance in poverty alleviation and the achievement of several Sustainable Development Goals that are in line with Maqasid Sharia. Given the existence of slavery is against the Maqasid Sharia and anti-development (McGrath and Watson 2017), it is important to add objective eighth in the framework of optimizing social financial finance in Indonesia, apart from the reasons previously stated, to end the expansion of modern slavery.

The emergence of slavery issue with a more modern face (Hernandez and Rudolph 2015; Such et al. 2020), became a trigger to examine whether the modern version of slavery, which arose due to poverty, was successfully eliminated in Islamic countries, such as Indonesia, through the distribution of zakat, infaq, sadaqah as the components of Islamic social finance, and the effect of such financing to development. Considering that the number of child laborers in Indonesia is currently quite large, with around 1 in 3 of the population being children aged 0–17 years (Windiarto, et al. 2019). Even though children are human capital for the future and Indonesia is a country with the largest Muslim population in the world, there are some doubts as well as pros and

cons on the influence of Islam on the economic and social performance of a country (Pryor 2007). In 2009, data disclosed by the Central Bureau of Statistics showed that there were 1.76 million child workers (Manpower Minister of Republik Indonesia 2014). The Indonesian government has made efforts to tackle child labor issues and stipulated laws that regulate the prohibition of employing children (Republik Indonesia 2003) comparable to the governments of other Muslim countries such as Ghana (Fuseini and Daniel 2019). However, nine years later, in 2018 based on Susenas data, there were still 1,709,712 child laborers in Indonesia (Zuraya 2020a).

Based on the above description, this study aims to develop an optimization model for Islamic Social Finance (Zakat, Infaq, Sadaqah) with the supreme goal to end modern slavery, through empirical analysis on the relationship between Islamic social finance and indicators of Zakat, Infaq, Sadaqah and the reduction/elimination of modern slavery. This research consists of five parts. The first part is an introduction, explaining the reasons for the importance of examining the issue of modern slavery in Islamic countries, followed by the second part that describing the theoretical basis of the study. The third part describes the methods used in the study, while the fourth part presents the calculation results of collected data, as well as the analysis, and lastly, the fifth part that comprising of the conclusions and recommendations.

## ***1.1 Objective***

Based on the background of this study, the purpose of this study is to develop an optimization model of Islamic Social Finance (Zakat, Infaq, Sadaqah) with the additional goal to end modern slavery and to analyze the impact of Islamic social finance (with indicators of Zakat, Infaq, Sadaqah) towards the reduction/elimination of modern slavery, poverty, hunger, and quality improvement of education quantitatively. The model was developed as a development framework to optimizing Islamic Social Finance in achieving several sustainable development goals, in accordance with the Maqasid Sharia in the Islamic country of Indonesia.

## **2 Theory**

### ***2.1 Modern Slavery***

Slavery is defined as the exploitation of laborers whose existence is recognized or regulated by institutions, regardless of how significant the structure is (Patterson 2001). Slavery as per this definition does not exist anymore in this world, but in practice slavery in a more modern form, modern slavery, is believed to still occur in various parts of the world, including Indonesia. The modern definition of slavery is quite diverse, often used interchangeably with other terms (McGrath and Watson

2017), as in forced labor. There are those who consider the two terms are the same (International Labor Organization, Walk Free Foundation 2017), but there are also those who consider them to be different (Zuraya 2020b).

In general, without distinguishing between modern slavery and forced labor, modern slavery is a form of forced labor that is carried out by individuals, groups, or private companies in all sectors (International Labor Organization, Walk Free Foundation 2017). It is also defined as all work made under threat of punishment so that the work is carried out without free willingness of the person doing the work. Based on this definition, forced labor contains three elements: first, there is the work that the worker must do for the employer; second, the work is carried out under threat; and third, the work performed against the workers' free will (International Labour Organization 2012).

## ***2.2 Child Labour and Modern Slavery of Children***

As mentioned previously, the definition of modern slavery, in general, is a form of work that is forced or made under duress, whereas in particular, modern slavery of children can be defined as children who are forced to work (Harding 2019). The Law of the Republic of Indonesia defines a child as any person under 18 (eighteen) years (Republik Indonesia 2014). Whilst, working children are children who do work to help their parents, train their responsibilities, discipline or skills that are carried out in the short term and after school time, with no element of exploitation in them, in contrary to the modern context of slavery in children. With regard to age restrictions, based on Law no. 20 of 1999, as to ratify the ILO Convention No. 138 concerning Minimum Age for Work, the government set the age of 15 years as the minimum age for work in Indonesia (International Labour Organization (ILO) 2018). According to these provisions, children under 15 years of age should not work or should not be forced to work. Children who are not supposed to work but still working are categorized as child labor.

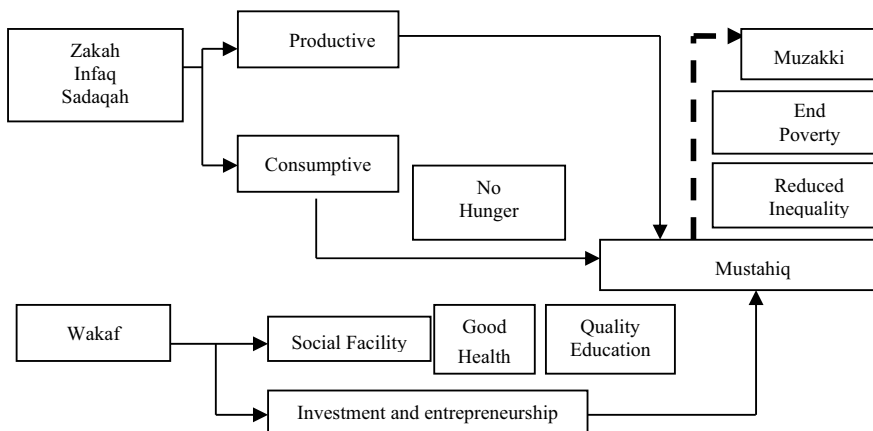
The definition of child labor is every child who does work which nature and intensity may disturb and endanger the health and safety of the child as well as the child's optimal development physically, mentally, socially, and intellectually. Child labor in a broad concept includes those who work in all production markets and some types of non-market production (especially the production of self-used goods). This includes all forms of work in the formal and informal sectors, as well as jobs inside and outside the household (Minister and of Republik Indonesia 2022). Back in 1987, the term used for child labor is child forced to work (International Labour Organization (ILO) 2018), in line with the modern context of children slavery.



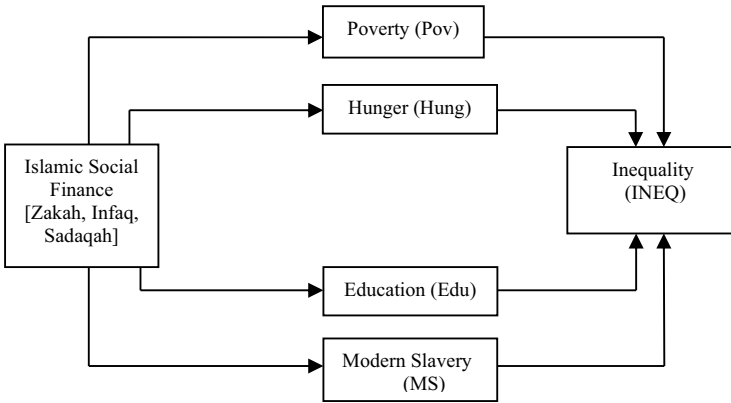
### 2.3 Islamic Social Finance and Efforts to Eliminate Slavery

Conventionally, social finance is a new financial market that is associated with the presence of a social economy that aims to provide solutions or to solve social problems efficiently (Andrikopoulos 2020). In particular, Islamic social finance is shariah compliant finance for social purposes and to improve the wealth distribution in society. Islamic social finance consists of several components/instruments or pillars (Beik 2019; Mohd Zain and Engku Ali 2117; Obaidullah and Shirazi 2017; Soyan Financial Consultancy 2017), including, (1) zakat, infaq, sadaqah (2) waqf, and (3) microenterprise. Zakat is an obligatory charity, compulsory for Muslims (Ahmad et al. 2015), while infaq and sadaqah are voluntary-based. As previously mentioned, numerous efforts have been made to optimize Sharia Social Finance (ZISWAF) in poverty alleviation and in achieving Sustainable Development Goals (SDGs), as depicted in Fig. 1 with several simplifications, which are adjusted to this research. Based on Fig. 1, the optimization of Islamic social finance is aimed at achieving the 1st sustainable development agenda (end poverty), 2 (end hunger), 3 (good health), 4 (complete education), and 10 (end inequality).

The distribution of zakat, infaq, and sadaqah for productive and consumptive activities is expected to reduce hunger, poverty, and inequality experienced by mustahiq. In the end, poverty reduction and reduced or end inequality are expected to reduce the number of mustahiq who then upgrade their status to muzakki. In this study, a research model was built with a simplification compared to the Social Finance Optimization as shown in Fig. 1, but there is an additional goal for the 8th SDGs, namely decent work, which seeks to eliminate modern slavery, to achieve sustainable development. This is in line with the purpose of Islamic social finance distribution



**Fig. 1** The framework of social finance optimization bashori 2017 Source adapted from *Kerangka Optimalisasi Keuangan Sosial Syariah (ZISWAF) dalam Pengentasan Kemiskinan dan Mencapai beberapa Sustainable Development Goals (SDGs)* (Bashori 2017)



**Fig. 2** Research conceptual framework: analysis development model of Islamic social finance (ZIS) impacts on the alleviation of inequality by accomplishing Sustainable Development Goals (SDGs); end poverty, end hunger, improve education quality, and end modern slavery

and QS. At-Taubah: 60, so that the conceptual framework or diagrammatic approach model in this study is as shown in Fig. 2.

### 3 Methodology

#### 3.1 Data

This section explains about the data used in this study and the reason underlying their usage, with respect to the requirements of the method(s) being used. The data used is of 2016–2017 time period, particularly collected from Indonesia, for the reason that Indonesia is a country with the largest Muslim population in the world and the way of life of its people is influenced by Islamic values. The data sources are the Central Bureau of Statistics as well as the Ministry of Women’s Empowerment and Child Protection (Ikawati 2017; Windiarto 2018; Windiarto et al. 2019), as depicted in Table 1.

Data on modern slavery was using data on child labor of 10–14 years, even though children are defined as all individuals below 18 years old, because based on the labor law of Indonesia, the minimum age of the workforce is 15 years and above. To measure inequality, we used per capita expenditure data. Based on the indicators used by the Indonesian Central Bureau of Statistics (<https://sirusa.bps.go.id/sirusa/index.php/indidik/197>), per capita expenditure is described as the cost incurred for the consumption of all household members for a month divided by the number of household members. Whereas the composition of household expenditure can be used as a measure to assess the level of the economic welfare of the population, changes in one’s income will have an effect on shifting patterns of expenditure. The higher

**Table 1** Source of data

Variable	Indicator	Description	Source
Islamic Social Financial	Distribution of Zakat Infaq Sadaqah (ZIS)	Distribution of Zakah, Infaq, and Sadaqah by Province	Indonesia Zakat Outlook (Center of Strategic Studies - The National Board of Zakat 2020)
End poverty	Poverty <b>Eradicate Extreme Poverty</b> (POV)	Number of Poor Population by Province	Statistic Indonesia
End hunger	Hunger <b>End all forms of malnutrition</b> (HUNG)	Prevalence of malnourished children under five by provinces in Indonesia (PSG), malnutrition under five (0–59 months) by Province	Statistic Indonesia
Quality education	Education <b>Complete primary education</b> (EDU)	Primary School Gross Enrollment Rate, by Province	Statistic Indonesia
Decent work	Modern Slavery <b>End modern slavery</b> (MS)	Total Child Labour 10–14 years, by Province	National Labor Force Survey, Survei Angkatan Kerja Nasional (Sakernas) 2016, BPS (Ikawati 2017)
Reduced inequality	Inequality (INEQ)	Average per capita expenditure per month in urban and rural areas by province and group of goods by Province	Statistic Indonesia

Source BPS, 2017, 2020; Baznaz, 2020 (Center of Strategic Studies - The National Board of Zakat 2020; Ikawati 2017)

the income, the higher the non-food expenditure, hence the expenditure model can be used as a tool to measure the level of welfare of the population. Thus, the changes in its composition are used as indicators of changes in welfare levels.

### 3.2 Model Development

This section consists of an explanation on the proposed model, its main references and modification. As previously explained, the purpose of this study, in general, is to analyze the correlation between Islamic social finance and modern slavery, and

several other variables based on the Sharia/Islamic social finance optimization framework (ZISWAF) approach in poverty alleviation and in achieving several Sustainable Development Goals (SDGs) (Bashori 2017). The model was developed with the addition of the 8th goal of the SDGs, decent work, which is relevant to the purpose of zakat distribution, namely ‘end slavery’, as the novelty in this study. The existence of Islamic social finance, in the form of Zakat, Infaq, Sadaqah, is expected to be able to eradicate poverty (Ammani et al. 2014), hunger, to improve the quality of education, and to end child labor, so that in the end it can reduce inequality (Ammani et al. 2014). Zakat is also used to develop human resources capacity, among others, through education (Arshad et al. 2015), which is then expected to reduce inequality (Hasan 2020), to end hunger, modern slavery, and poverty.

The regression model can be formulated mathematically as follows:

$$\text{INEQ} = \alpha_1 \text{EDU} + \alpha_2 \text{HUNG} + \alpha_3 \text{MS} + \alpha_4 \text{POV} + e_1 \quad (1)$$

$$\text{EDU} = \beta_1 \text{ZIS} + e_2 \quad (2)$$

$$\text{HUNG} = \gamma_1 \text{ZIS} + e_3 \quad (3)$$

$$\text{MS} = \delta_1 \text{ZIS} + e_4 \quad (4)$$

$$\text{POV} = \lambda_1 \text{ZIS} + e_4 \quad (5)$$

### 3.3 Method

This study was conducted using a quantitative approach with the PLS method. PLS is an alternative method of Structural Equation Modelling (SEM) which can be used to anticipate complex variable relationship problems at small data sample sizes (30 to 100). SEM is used to determine the complexity of the relationship between latent variables and other latent variables, as well as the relationship between latent variables and their indicators. Latent variables (constructs) are variables that cannot be measured directly, so they need indicators to measure them. SEM is formed by measurement equations using aspects of factor analysis and structural equations using aspects of multiple regression analysis.

SEM is called a measurement model, also known as the confirmatory factor analysis model. SEM in which all model variables are observed is called a structural model. The two types of models can be mixed. In a mixed model, if the measurement sub-model is relatively simple, it is common to combine the structural and measurement sub-model into one system and estimate all parameters simultaneously. For more complex latent constructs, however, it is also quite common to perform

exploratory factor analysis in the first stage, then use the factor scores obtained from the first stage as the observed variables in the structural model. Further, the term path analysis can be used synonymously with SEM, but generally connotes the use of graphic depiction from SEM to analyze the magnitude and significance of the direct, indirect, and total effects between variables (Mokhtarian and Ory 2009).

PLS-SEM, also referred to as variant-based SEM, was developed to offer a structural equation modeling approach with much greater flexibility (Hair et al. 2019). PLS is defined by two equations, namely the inner model and outer model. The inner model specifies the relationship between the latent construct and other latent constructs, while the outer model specifies the relationship between the latent construct and its indicators. The PLS model evaluation is divided into the following two evaluation steps: (1) Evaluate the outer model (measurement model), including the value of outer loading, average variance extracted (AVE), and composite reliability (CR). (2) Evaluate the inner model (structural model), including the value of path coefficients, and *R-square* ( $R^2$ ).

## 4 Results and Analysis

### 4.1 Overview Modern Slavery in Children in Indonesia

The Indonesian government has made efforts to eliminate child labour which is a modern form of slavery of children in Indonesia. These efforts have been started a long time ago, as early as in 1992, when the Government of Indonesia and the ILO signed a Memorandum of Understanding on the prevention and elimination of child labour (International Labour Organization (ILO) 2018). In 2020, the Ministry of Manpower of the Republic of Indonesia targeted the number of child workers reduced to 9,000 child workers. Since 2008 to date, child labour that has been withdrawn from the worst forms of child labour is as many as 134,456 child workers out of 1,709,712 children based on the 2018 National Socio-Economic Survey data. Based on the Public Relations Bureau of The Ministry of Manpower of the Republic of Indonesia, Friday, June 12, 2020, the commitment to eliminate child labour is marked by the ratification of the ILO Convention Number 138 regarding the minimum age allowed to work under Law Number 20 of 1999 (<https://kemnaker.go.id/news/detail/kemnaker-targetkan-Interested-9-ribu-perja-children-2020>).

According to the Minister of Manpower of the Republic of Indonesia, child workers tend to be in exploitative work situations and forced to work for quite a long period. This evidence was based on the 2012 National Labour Force Survey data which showed that most children work more than 40 h per week. Child labourers in Indonesia are at risk of having unsafe jobs because they are working more than the standard working hours of adults. Although there is no comprehensive data on child labour, children who work in the worst jobs have been found in types of work such as in drug trafficking, prostitution, deep-sea fishing, mining, and domestic work

(Minister and of Republik Indonesia 2022). Existing data collected by Child Labour Survey conducted by the ILO in 2009, shows that a total of 985,000 children aged 5–14 years, or about 44% of total child labour, are exposed to hazardous conditions, such as dust or vapour, hazardous objects, extreme cold or heat, chemicals, dangerous equipment, and hazardous heights. The highest exposure to risky conditions is those who work in agriculture and manufacturing where about 1 in 2 children in the sector are exposed to at least 1 hazardous condition (Minister and of Republik Indonesia 2022). Not only related to longer working hours, but the wages received are mostly also far from what it should be. Data from the Indonesian Central Bureau of Statistics mention that the average wage/salary in 2017 was IDR 2,742,621 (Central Statistics Agency 2020), while in the same year, the average wage/salary for working children was only IDR 1,106,374 (Windiarto 2018), significantly less than adults'. It is even possible for the children to be working on the job as unpaid workers (Badan Pusat Statistik 2009).

#### ***4.2 Partial Least Square Islamic Social Finance, Modern Slavery of Children and Sustainable Development Goals in Indonesia***

As previously mentioned, the PLS model evaluation is divided into 2 evaluations, namely the evaluation of the outer model and the evaluation of the inner model which will be analyzed in this section.

##### **1. Evaluation of the Outer Model (Measurement Model)**

Evaluation of the outer model aims to see the validity and reliability of a model. Evaluation of the outer model (measurement model) is including the value of outer loading, average variance extracted (AVE), and composite reliability (CR). The outer loading value is the coefficient of the measurement model that measures the validity of the PLS model construct. The outer loading value is said to be valid when outer loading is  $>0.5$ , based on the data processing result outer loading value in the PLS-SEM model is  $>0.5$  (1.000), all outer loading values are found to be valid.

##### **2. Evaluation of the Inner Model (Structural Model)**

In term of R-Square Coefficient of Determination, based on the output the R-square ( $R^2$ ) value obtained are:

1. The EDU model is 0.019 which means that the diversity of the EDU construct can be explained by the 1.9% ZIS construct.
2. The HUNG model is 0.030 which means that the diversity of the HUNG construct can be explained by the 3% ZIS construct.
3. MS model is 0.077 which means that the MS construct diversity can be explained by the 7.7% ZIS construct.

4. POV model of 0.162 means that the diversity of the POV construct can be explained by the 16.2% ZIS construct
5. The INEQ model is 0.275 which means that the diversity of INEQ constructs can be explained by the EDU, HUNG, MS, and POV constructs together at 27.5% and the remaining is explained by the error variable representing other variables not included in the model.

In order to check the significance of the SEM model with PLS, the bootstrapping process was then carried out. The purpose of this significance test is to determine the effect of exogenous variables on endogenous variables. Since the significance test (t-test) for Path Coefficients was not displayed, the Bootstrapping method was provided. In the bootstrapping process, 10,000 bootstrapping samples were used. Using this process, the correlation between the influence of exogenous and endogenous variables was obtained, as shown in Table 2 and Table 3. The results of the path hypothesis are depicted in Fig. 3.

*Hypothesis Testing (Path Coefficient)*

The path coefficient value is the path coefficient that measures the effect amongst the constructs. Hypothesis testing in PLS-SEM can be done using the t value, compared with the t table value. In this study, to test this t, the value of the path coefficients is significant if the p-value  $\leq \alpha$  with  $\alpha$  is 1%, 5%, or 10%. The output results in Table 2 show that: (1) there is a significant direct effect of the ZIS variable on POV (positive effect), meaning that if ZIS increases, the POV will increase; (2) there is a significant direct effect of the ZIS variable on HUNG (negative effect), meaning that if ZIS increases, HUNG will decrease, thus; (3) there is a direct and insignificant effect of the ZIS variable on EDU, meaning that if the ZIS increases/decreases, the EDU will not be affected; (4) there is a direct and insignificant effect of the ZIS variable on MS, meaning that if ZIS increases/decreases, MS will not be affected; and (5) there

**Table 2** Significance test results for direct effect (Significance test (path coefficients))

Path coefficient	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P-values
EDU->INEQ	-0.379	-0.391	0.098	3.861	0.000***
HUNG->INEQ	-0.193	-0.184	0.081	2.385	0.017**
MS->INEQ	-0.207	-0.225	0.078	2.650	0.008***
POV->INEQ	-0.178	-0.168	0.084	2.130	0.033**
ZIS->EDU	-0.138	-0.145	0.091	1.514	0.130
ZIS->HUNG	-0.172	-0.171	0.080	2.152	0.031**
ZIS->MS	0.277	0.269	0.172	1.616	0.106
ZIS->POV	0.402	0.395	0.145	2.781	0.005***

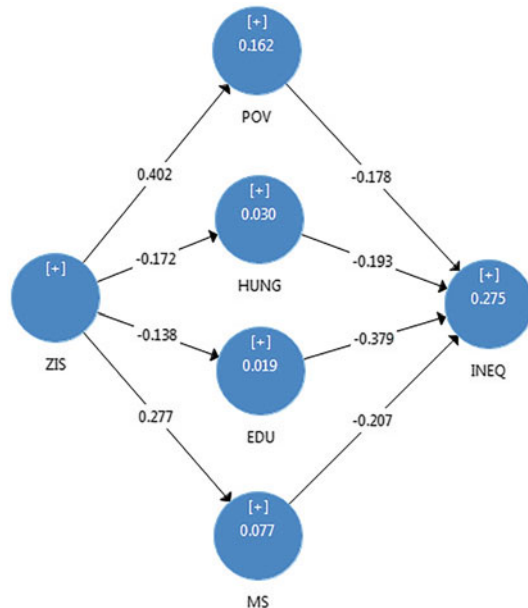
\*\*\*Significant for alpha ( $\alpha$ ) = 1%; \*\*Significant for alpha ( $\alpha$ ) = 5%; \*Significant for alpha ( $\alpha$ ) = 10%

**Table 3** Significance test results for the indirect effect

Total indirect effect	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ( O /STDEV)	P-values
ZIS ->INEQ	-0.044	-0.027	0.071	0.614	0.539
Specific indirect effect	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ( O /STDEV)	P-values
ZIS->EDU->INEQ	0.052	0.061	0.048	1.081	0.280
ZIS->HUNG->INEQ	0.033	0.034	0.024	1.381	0.167
ZIS->MS->INEQ	-0.057	-0.059	0.045	1.277	0.202
ZIS->POV->INEQ	-0.072	-0.062	0.037	1.915	0.056*

\*\*\*Significant for alpha ( $\alpha$ ) = 1%; \*\*Significant for alpha ( $\alpha$ ) = 5%; \*Significant for alpha ( $\alpha$ ) = 10%.

**Fig. 3** Bootstrapping results  
 Source Research data processed, 2021



is a significant direct effect of the EDU, HUNG, MS, and POV variables on INEQ (negative effect).

The output results in Table 3 shows that: (1) there is an indirect effect that is not significant for the ZIS variable on INEQ, meaning that if ZIS increases/decreases, INEQ will not be indirectly affected; (2) there is an indirect and insignificant effect



of the ZIS variable on INEQ through EDU, HUNG, and MS, meaning that if ZIS increases or decreases, INEQ will not be indirectly affected; and (3) there is a significant indirect effect of the ZIS variable on INEQ through POV (negative effect), meaning that if ZIS increases, INEQ will experience a decrease indirectly through POV; and vice versa, if ZIS decreases, INEQ will increase indirectly through POV.

### 4.3 Analysis

This section provides details about the critical discussion on the findings, an explanation of the novelty of the study, justifications of the results, and discussions on how do the results differ or equate to other related studies. The first finding shows that there is a significant direct negative effect of the education variable on the inequality variable, indicating that if the gross enrollment rate of primary schools increases, the average monthly expenditure will decrease; and vice versa if the gross enrollment rate of elementary schools decreases, the average monthly expenditure will increase. This happens because many workers in Indonesia do not attend school (around 3% in 2017, Central Statistics 2020) or do not complete primary school (about 13% in 2017, Statistic Indonesia 2020) when they entered the labor market. This situation has been going on for several years (Ridho et al. 2018). Not being involved in the world of education and entering the labour market, shape the increasing welfare or reducing inequality, this condition is quite unfortunate considering that education is a roadmap for sustainable development (Abu-Goukh et al. 2012).

This finding is contradictory to previous studies that highlighted the need for a proper education because education is associated with reduced or lower inequality (Hasan 2020) and contrary to previous research conducted in several other Islamic countries, it shows an insignificant effect between education and decreased inequality (Acar and Dogruel 2012). Our study also found that there is a direct and significant negative effect of the hunger variable on inequality. It means that there is a significant direct negative effect on the prevalence of malnourished toddlers on the average per capita monthly expenditure. If the prevalence of malnourished children under five decreases, the average per capita expenditure per month increases. The prevalence of malnourished children under five is a form of malnutrition that indicates insufficient food consumption (Mondeika 1970) which is opposite to the increase in average expenditure, indicating better welfare, or in other words, reduced inequality. Thus, it becomes essential for Islamic social financial institution to achieve its mission towards a healthy society (Zainon et al. 2014), especially for the less fortunate (Kassim-lakha and Bennett 2013).

Furthermore, there is a significant direct negative effect of the number of child labourers on the average expenditure per capita per month, meaning that if the number of child labourers decreases, the average expenditure per capita per month will increase, indicating an increase in welfare and a decrease in inequality. This finding is in line with the opinion arguing that the existence of slavery and development are two opposites (McGrath and Watson 2017). This is the reason for the

importance of eliminating modern slavery, especially among children, because in addition to children being the future human capital, the end of slavery is also important for the global development. As proven in previous studies, the effect of slavery on economic development becomes clearer over time. In agreement with that, the results of this study show that the widespread phenomenon of slavery is associated with lower progress of economic development (Bezemer et al. 2014).

Likewise, there is a significant direct negative effect of the number of poor people on the average expenditure per capita per month, indicating that if the number of underprivileged population decreases, the average per capita monthly expenditure or welfare will increase. This particular purpose of distributing Zakat, Infaq, Sadaqah with the existence of Islamic social finance is in line with Maqasid Sharia and sustainable development goals (Surah At Taubah: 60) (Syed Azman and Engku Ali 2019). The distribution of Zakat, Infaq, Sadaqah (ZIS) has a direct and insignificant effect on the gross enrolment rate of elementary schools, meaning that if the distribution of Zakat, Infaq, Sadaqah increases/decreases, the gross enrolment rate of elementary schools is not affected.

Another significant direct negative effect of the distribution of Zakat, Infaq, Sadaqah is found on hunger, in the form of the prevalence of malnourished children under five. If the distribution of Zakat, Infaq, Sadaqah improves, the prevalence of malnourished children under five will decline; and vice versa, if the distribution of Zakat, Infaq, Sadaqah decreases, the prevalence of malnourished children under five will increase. This shows empirically, the achievement of Islamic social finance objectives as it should be, as proposed in the optimization of its use (Bashori 2017).

On the other hand, a direct and insignificant effect of the distribution of Zakat, Infaq, Sadaqah is found on the number of child workers, meaning that any increase/decrease in the distribution of ZIS does not affect the number of child workers. However, the distribution of Zakat, Infaq, Sadaqah is found to have a direct and significant positive effect on the number of poor people. When the distribution of ZIS improves, the number of poor people will increase; and vice versa, if the distribution of Zakat, Infaq, Sadaqah decreases, then the number of poor people will decrease. This is contrary to the belief that the solution to improving the socio-economic situation of the community and overcoming poverty is to build or strengthen the sustainability of Islamic financial institutions in society (Sulayman 2015). This phenomenon occurs due to the 'poverty mentality' in many communities. Whenever a program or activity is organized as poverty assistance programs in Indonesia, for example during the distribution of infaq and sadaqah, people often suddenly acted as if they are 'poor'. This mentality causes an increase in the number of poor people.

This study also found a significant indirect negative effect of the Zakat, Infaq, Sadaqah variables on inequality through poverty, meaning that if ZIS distribution increases, then inequality will decrease indirectly (indicating by the number of poor people); and vice versa, when the amount of ZIS distribution decreases, inequality will increase indirectly through poverty. This finding is in consistent with previous research examining the relationship between finance and inequality (Hasan 2020), which stated that financial redistribution has an effect on reducing inequality. These

findings indicate the importance of achieving the goal of zakat to improve the equilibrium of welfare in society through optimal wealth redistribution.

And lastly, we found no direct effect of the distribution of zakat, infaq, sadaqah on the attainment of basic education and the reduction of modern children slavery in Indonesia, even though education and child labor has an effect on or is important for reducing inequality. This finding is contradictory to the opinion presented by previous research, that mentioned social finance allocation should be aimed at developing human resources (Arshad et al. 2015).

## 5 Conclusion

This section consists of an explanation on the findings against the research questions. As stated earlier, the purpose of this study is to generally analyze the effect of Islamic Social Finance (ZIS) in alleviating inequality through the realization of several Sustainable Development Goals (SDGs). Based on the results and discussion in this study, it can be concluded that in the short term there is a significant direct negative effect of the distribution of zakah, infaq, sadaqah on hunger; meaning that if the distribution of ZIS increases, hunger will decrease; and vice versa, if the distribution of ZIS decreases, then hunger will increase. In addition, there is a significant direct positive effect of ZIS on poverty, which shows when the distribution of ZIS increases, then poverty will increase; and vice versa. This phenomenon happens due to the poverty mentality of some communities in Indonesia. There is also a significant indirect negative effect of ZIS distribution on welfare through poverty, showing that if Zakah, Infaq, Sadaqah increases, then welfare will experience an indirect decrease through poverty; and vice versa, if the distribution of Zakah, Infaq, Sadaqah decreases, then welfare which is inversely proportional to inequality will increase indirectly through poverty. This finding is related to the previous phenomenon that found an increase in the number of 'poor people' as a result of the assistance program for the poor from Islamic social finance.

However, there is no direct influence or impact on Islamic social finance in the form—zakat distribution, infaq, sadaqah—on the attainment of basic education and the reduction in the number of modern slavery of children in Indonesia, even though education and the existence of child labor are affecting and crucial for eliminating inequality. Indonesia as a country with the largest Muslim population in the world—although it is still debatable whether the Muslim residents are true believers or just being Moslem by culture—is in fact, still struggling with the issue of child workers, children who experience modern slavery and have not been positively affected by the existence of Islamic Social Finance.






## References

- Abu-Goukh, M.E. et al.: Engineering education for sustainability and economic growth in developing countries (the sudanese case). *Procedia Soc. Behav. Sci.* **102**, 421–431 (2013). Ifee 2012. <https://doi.org/10.1016/j.sbspro.2013.10.757>.
- Acar, S., Dogruel, F.: Sources of inequality in selected MENA countries. *Struct. Change Econ. Dyn.* **23**(3), 276–285 (2012). <https://doi.org/10.1016/j.strueco.2012.03.004>
- Ahmad, R.A.R., et al.: Assessing the satisfaction level of zakat recipients towards zakat management. *Procedia Econ. Finance* **31**(15), 140–151 (2015). [https://doi.org/10.1016/s2212-5671\(15\)01141-7](https://doi.org/10.1016/s2212-5671(15)01141-7)
- Ammani, S.A., et al.: Zakah on employment income in Muslims majority states of Nigeria: any cause for alarm? *Procedia Soc. Behav. Sci.* **164**, 305–314 (2014). <https://doi.org/10.1016/j.sbspro.2014.11.081>
- Andrikopoulos, A.: Delineating social finance. *Int. Rev. Financ. Anal.* **70**, 101519 (2020). <https://doi.org/10.1016/j.irfa.2020.101519>
- Arshad, R., et al.: Human capital and Islamic-based social impact model: small enterprise perspective. *Procedia Econ. Finance* **31**(15), 510–519 (2015). [https://doi.org/10.1016/s2212-5671\(15\)01195-8](https://doi.org/10.1016/s2212-5671(15)01195-8)
- Badan Pusat Statistik: Pekerja Anak di Indonesia 2009 (2019)
- Bakar, A.A., et al.: Modelling economic wellbeing and social wellbeing for sustainability: a theoretical concept. *Procedia Environ. Sci.* **28**, 286–296 (2015). *Sustain* 2014. <https://doi.org/10.1016/j.proenv.2015.07.037>
- Bashori, M.A.: Mendorong Pengembangan Islamic Social Finance dalam Rangka Mewujudkan Masyarakat Sejahtera, Makassar (2017). <https://doi.org/10.4337/9781784710736.00011>
- Beik, I.S.: Islamic Social Finance Islamic Social Finance (ISF) Its emergence: The Milestones Components of ISF ISF as Pillar of Islamic Economy, October 2019
- Bezemer, D., et al.: Slavery, statehood, and economic development in Sub-Saharan Africa. *World Dev.* **57**, 148–163 (2014). <https://doi.org/10.1016/j.worlddev.2013.12.004>
- Center of Strategic Studies - The National Board of Zakat: Indonesia Zakat Outlook 2020. BAZNAS, Center of Strategic Studies, The National Board of Zakat, Jakarta Timur (2020)
- Fuseini, T., Daniel, M.: Child begging, as a manifestation of child labour in Dagbon of Northern Ghana, the perspectives of mallams and parents. *Child. Youth Serv. Rev.* **111**, 104836 (2020). <https://doi.org/10.1016/j.chilyouth.2020.104836>
- Hair, J.F., et al.: Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *J. Bus. Res.* **109**, 101–110 (2020). <https://doi.org/10.1016/j.jbusres.2019.11.069>
- Hardiana, M.D.: Innovative Islamic social finance. *ISEF* (2009). [https://doi.org/10.1007/978-94-007-0753-5\\_3097](https://doi.org/10.1007/978-94-007-0753-5_3097)
- Harding, E.: Modern slavery of children in India. *Lancet Child Adolesc. Heal.* **3**(1), 14 (2019). [https://doi.org/10.1016/S2352-4642\(18\)30379-1](https://doi.org/10.1016/S2352-4642(18)30379-1)
- Hasan, I., et al.: Finance and wealth inequality. *J. Int. Money Finance* **108** (2020). <https://doi.org/10.1016/j.jimonfin.2020.102161>
- Hernandez, D., Rudolph, A.: Modern day slavery: what drives human trafficking in Europe? *Eur. J. Polit. Econ.* **38**, 118–139 (2015). <https://doi.org/10.1016/j.ejpolco.2015.02.002>
- Ikawati, D., et al.: Profil Anak Indonesia 2017. Kementrian Pemberdayaan Perempuan dan Perlindungan Anak (KPPPA), Jakarta (2017)
- International Labor Organization, Walk Free Foundation: Global Estimates of Modern Slavery: Forced Labour and Forced Marriage (2017)
- International Labour Organization: ILO Global Estimate of Forced Labour (2012). ISBN: 9789221264125; 9789221264132 (web pdf)
- International Labour Organization (ILO): Menghapus Pekerja Anak di Indonesia: Dukungan 25 Tahun. International Labour Organization, Jakarta (2018)
- Johnston, R.B.: Transforming Out World: The 2030 Agenda For Sustainable Development (2016). <https://doi.org/10.1201/b20466-7>

- Kassim-lakha, S., Bennett, J.: Philanthropic funding for health in Pakistan. *Lancet* **381**(9885), 2236–2237 (2013). [https://doi.org/10.1016/S0140-6736\(13\)60678-9](https://doi.org/10.1016/S0140-6736(13)60678-9)
- Manpower Minister of Republik Indonesia: Peta Jalan (ROADMAP) Menuju Indonesia Bebas Pekerja Anak Tahun 2022, Jakarta (2014)
- McGrath, S., Watson, S.: Anti-slavery as development: a global politics of rescue. *Geoforum* **93**, 22–31 (2018). <https://doi.org/10.1016/j.geoforum.2018.04.013>
- Mohd Zain, N.R., Engku Ali, E.R.A.: An analysis on Islamic social finance for protection and preservation of Maqāṣid al- Shari‘ah. *J. Islam. Finance* **2117**(Spec. Issue), 133–141 (2017)
- Mokhtarian, P.L., Ory, D.T.: Structural equations models. *Int. Encycl. Hum. Geogr.*, 10–17 (2009). <https://doi.org/10.1016/B978-008044910-4.00541-1>
- Mondeika, T.: Hunger and Malnutrition. Elsevier (1970). <https://doi.org/10.1001/jama.1970.03180060097034>
- Obaidullah, M., Shirazi, N.S.: IRTI Islamic social finance report 2017 (1438h). ResearchGate 2017, 1–105 (2017). <https://doi.org/10.13140/RG.2.2.26825.44645>
- Patterson, O.: Slavery: Comparative Aspects. Elsevier (2001). <https://doi.org/10.1016/B978-0-08-097086-8.12146-4>
- Pryor, F.L.: The economic impact of Islam on developing countries. *World Dev.* **35**(11), 1815–1835 (2007). <https://doi.org/10.1016/j.worlddev.2006.12.004>
- Republik Indonesia: Law of the Republic of Indonesia Number 35 of 2014 concerning Amendments to Law Number 23 of 2002 concerning Child Protection (2014)
- Republik Indonesia: Undang Undang Republik Indonesia no 13 tahun 2003 tentang Ketenagakerjaan, Indonesia (2003)
- Ridho, S.L.Z., et al.: Wages, life expectancy and working population in Indonesia: the implications of demographic bonus. *Icobame 2018*, 7–11 (2019). <https://doi.org/10.2991/icobame-18.2019.2>
- Soyan Financial Consultancy: Social Financing: A Shariah Compliant Model, June 2017
- Such, E., et al.: Modern slavery and public health: a rapid evidence assessment and an emergent public health approach. *Public Health* **180**, 168–179 (2020). <https://doi.org/10.1016/j.puhe.2019.10.018>
- Sulayman, H.I.: Growth and sustainability of Islamic finance practice in the financial system of Tanzania: challenges and prospects. *Procedia Econ. Finance* **31**(15), 361–366 (2015). [https://doi.org/10.1016/s2212-5671\(15\)01210-1](https://doi.org/10.1016/s2212-5671(15)01210-1)
- Syed Azman, S.M.M., Engku Ali, E.R.A.: Islamic social finance and the imperative for social impact measurement. *Al-Shajarah Spec. Issue Islam. Bank. Finance* 2019, 43–68 (2019)
- Windiarso, T., et al.: Profil Anak Indonesia Tahun 2018. Kementerian Pemberdayaan Perempuan dan Perlindungan Anak (KPPPA), Jakarta (2018)
- Windiarso, T., et al.: Profil Anak Indonesia Tahun 2019, Jakarta (2019)
- Zainon, S., et al.: Legitimacy and sustainability of social enterprise: governance and accountability. *Procedia Soc. Behav. Sci.* **145**, 152–157 (2014). <https://doi.org/10.1016/j.sbspro.2014.06.022>
- Zuraya, N.: Kemnaker targetkan tarik 9.000 Pekerja Anak pada 2020 (2020). <https://republika.co.id/berita/qbth9o383/kemnaker-targetkan-tarik-9000-pekerja-anak-pada-2020>
- Zuraya, N.: Kemnaker targetkan tarik 9.000 Pekerja Anak pada 2020. Policy Press, Bristol (2020)

# The Benefits of Traditional Postnatal Practices: A Narrative Review of Cultural Beliefs vs Scientific Findings



Siti Fatimah Ab Ghaffar , Irma Izani Mohamad Isa ,  
Normaizatul Akma Saidi , Nurul Hafizah Mohd Yasin ,  
and Hasif Rafidee Hasbollah 

**Abstract** This review attempts to explore the traditional postnatal practices based on cultural beliefs and evidence-based benefits. This narrative review involved published quantitative and qualitative studies, review papers and guidelines and review documents by the Ministry of Health Malaysia. A literature search was conducted by using these databases-Medline, Science Direct and Google Scholar. There are some evidences to support some of the postnatal practices in providing physical and psychological benefits to postpartum mothers. For example, postnatal body massage could reduce anxiety and postnatal depression. Breast massage caused a reduction in breast pain from breast engorgement and improved lactation. A hot compress could reduce breast pain and prevent postpartum weight retention. These findings are essential for healthcare providers to support or refute the traditional postnatal practices and allow better integration of traditional postnatal practices into modern medicine. More studies with good research design are needed to evaluate the effectiveness and safety of the traditional postnatal practices.

**Keywords** Postnatal · Evidence-based · Cultural belief · Benefit · Massage · Abdominal wrap

## 1 Introduction

The postnatal or postpartum period can be referred to as the period between immediately after delivery and six weeks when the mother's physical health reverts to the pre-pregnancy state (Mathai et al. 2010). This period is critical since most of the death of postpartum mothers and babies occurs during this time (World Health Organisation 2020). Women in their postpartum period also experience a few health issues ranging

---

S. F. Ab Ghaffar · N. A. Saidi · N. H. M. Yasin (✉) · H. R. Hasbollah  
Faculty of Hospitality, Tourism and Wellness, University Malaysia Kelantan, Kota Bharu,  
Malaysia  
e-mail: [hafizah.my@umk.edu.my](mailto:hafizah.my@umk.edu.my)

I. I. Mohamad Isa  
Perdana University-Royal College of Surgeon Ireland School of Medicine, Perdana University,  
Kuala Lumpur, Malaysia

from mild problems like exhaustion, weight gain, constipation, and sore breasts to severe problems like wound infection, thromboembolism, haemorrhage and postnatal depression (Mathai et al. 2010). In Asian, it is believed that postpartum women are weak, fragile and vulnerable to illnesses. Therefore, confinement is commonly being practised to restore the mother's physical health status (Withers et al. 2018).

Traditional postnatal practices are widely varied and their uses depend on the cultural beliefs and ethnic groups (Withers et al. 2018; Kim-Godwin 2003). The common postnatal practices across Asian countries are massage, traditional herbs use, beliefs related to hot–cold balance, taboo and superstition (Withers et al. 2018). In Malaysia, the three main races, namely Malays, Chinese and Indians, have unique postnatal practices that are mostly influenced by culture (Fadzil et al. 2016; Mohd Yusoff et al. 2018). However, these three ethnic groups also share certain similar principles such as confinement period length, postpartum diet and massage, and keeping body warmth (Fadzil et al. 2016; Mohd Yusoff et al. 2018).

The Malay traditional confinement practices are believed to provide physiological and psychological support to postpartum mothers and are vital in preventing health problems in later years (Fadzil et al. 2016; Mohd Azmi et al. 2019). The most common type of complementary and alternative medicine used among postpartum mothers to maintain their wellbeing was massage (76.6%), hot stone compress (67.3%), abdominal wrap (61.7%), and followed by herbal medicine (33.1%) (Nik Yusof Fuad et al. 2020). These practices are being passed down by older generations to restore the energy and normal function of reproductive organs and encourage wound recovery and weight loss (Hishamshah et al. 2012; Ministry of Health Malaysia 2020). Despite the various cultural beliefs on the benefit of traditional postnatal care, the scientific findings that evaluating the effectiveness of these traditional postnatal practices are still lacking (Fadzil et al. 2016). The main purpose of this review was to explore the scientific benefits of traditional postnatal practices and compare that with cultural beliefs. To our knowledge, this is the first study that attempts to tackle this objective. Furthermore, the provision of the traditional postnatal service by the government and private sectors was also briefly discussed.

## 2 Method

This narrative review involved published papers, including quantitative and qualitative studies, review papers, and review and guidelines documents by the Ministry of Health Malaysia available until 2020. An electronic literature search was conducted by using Medline, Science Direct and Google Scholar. Articles that are not written in the English language were excluded. The keywords used for the literature search were postpartum, postnatal, traditional, culture, practice, benefit, effect, massage (or *urut*), hot compress (or *tungku*), abdominal wrap (or *bengkung*) and herbal bath. All papers that were found based on these keywords and in English were included; and not restricted to studies from Malaysia only; since some of those postnatal practices were also being implemented in certain countries, particularly Asian countries.

Reference lists of the previously found papers also provided some additional papers. Papers related to postnatal food or herb consumption were being excluded. Since this is a narrative review, there was no analysis conducted to assess the quality of the study.

### 3 Results

The findings on culturally perceived benefits vs scientific evidence of traditional postnatal practices were summarised in Table 1.

#### 3.1 *Body and Breast Massage*

In Malay postnatal practice, body massage is usually performed by an experienced midwife for three sessions at the beginning of the confinement period within the first week and three sessions at the end of confinement period (on day 39, 40 and 41). Body massage after childbirth is believed to help realign body weight to the standard weight and toning over-stretched areas of the skin (Ministry of Health Malaysia 2009). Massage is also said to improve blood circulation, eliminate excess fluids, minimize swelling, and accelerate recovery (Ministry of Health Malaysia 2009). However, there are no experimental studies to support the cultural benefits of postnatal massage in improving blood circulation and reducing excess fluids and swelling. The benefit of therapeutic massage in improving blood flow had been reported in sports medicines (Gasibat and Suwehli 2017). However, there are some limitations in the studies, including lack of control group and the device used in measuring the blood flow (Gasibat and Suwehli 2017).

One of the purposes of practising traditional postnatal care is to prevent postnatal depression, also known as '*meroyan*' in Malay. In a cross-sectional study involving 421 postpartum women in Kelantan, the logistic regression model showed that postnatal massage is a protective factor of postnatal depression with an odds ratio of 0.2 (Azidah et al. 2006). The psychological benefits of postnatal massage had also showed in other Asian countries. In Japan, an aromatherapy massage had been proven effective in improving the mental status of postpartum mothers (Imura 2006). In a randomised controlled trial involving sixty Taiwanese postpartum women, back massage was also found to improve the sleep quality of postpartum mothers (Ko and Lee 2014). A recent longitudinal study conducted in a rural area in Pakistan had found *chila* or traditional postpartum practices as a protective factor of postnatal depression, mainly by providing psychological support to postpartum mothers (Lemasters et al. 2020).

Massage is also claimed to help breastfeeding mothers improve the flow and production of breast milk and relieve breast engorgement (Ministry of Health Malaysia 2009). In India, a quasi-experimental study had reported that back massage



**Table 1** Summary of cultural beliefs vs evidence-based benefits of traditional postnatal practices

Traditional postnatal practices	Benefits	
	Cultural beliefs	Scientific evidence
Massage	<ul style="list-style-type: none"> <li>• Realigning body weight to the normal weight and toning over-stretched areas of the skin, improves blood circulation that assists the elimination of excess fluids, minimises swelling, accelerates the recovery process (Ministry of Health Malaysia 2009)</li> <li>• Help breastfeeding mothers in improving the flow and production of breast milk, relieving breast engorgement (Ministry of Health Malaysia 2009)</li> </ul>	<ul style="list-style-type: none"> <li>• Improved blood flow in sport medicine although limited evidence (Gasibat and Suwehli 2017)</li> <li>• Reduced breast pain by <i>oketani</i> breast massage and other types of breast massages (Anderson et al. 2019; Witt et al. 2016; Cho et al. 2012)</li> <li>• Improved lactation (Patel and Gedam 2013)</li> <li>• Reduced anxiety and depression among postpartum mother (Azidah et al. 2006; Imura 2006; Lemasters et al. 2020)</li> <li>• Improved the quality of sleep (Ko and Lee 2014)</li> <li>• Increased the secretion of serotonin and dopamine hormones that prevent depression and anxiety, respectively (Field et al. 2004)</li> </ul>
Hot compress	<ul style="list-style-type: none"> <li>• Dissolve residual blood clots in the uterus, help it contract, break down fat tissue, and help women’s bodies return to their pre-pregnancy state (Ministry of Health Malaysia 2009)</li> <li>• Massaged in a particular style, to “lift” the womb and prevent it from sagging in old age (Ministry of Health Malaysia 2020)</li> </ul>	<ul style="list-style-type: none"> <li>• Prevent postpartum weight retention (Fadzil et al. 2018)</li> <li>• Decrease breast pain (Ketsuwan et al. 2018)</li> </ul>
Abdominal wrap	<ul style="list-style-type: none"> <li>• Provide lower abdominal support and helps realign the spine to its normal shape (Ministry of Health Malaysia 2009)</li> <li>• Restore and deflate the abdomen and regain the original body shape (Mohd Yusoff et al. 2018)</li> </ul>	<ul style="list-style-type: none"> <li>• Increase abdominal muscles strength and decrease waist to hip ratio (El-Mekawy et al. 2013)</li> <li>• Reduce postoperative pain after caesarean delivery (Ghana et al. 2017; Gustafson et al. 2019)</li> <li>• Contrasting findings in preventing postpartum haemorrhage (Ghana et al. 2017; Gustafson et al. 2019)</li> </ul>

(continued)

**Table 1** (continued)

Traditional postnatal practices	Benefits	
	Cultural beliefs	Scientific evidence
Herbal bath	<ul style="list-style-type: none"> <li>• Postpartum mothers are advised to avoid taking a bath in the early morning to prevent the ‘wind’ from entering the body (Mohd Yusoff et al. 2018)</li> <li>• Practised by the Indian to improved blood flow and reduce fatigue (Fadzil et al. 2016)</li> </ul>	<ul style="list-style-type: none"> <li>• Provide a relaxing effect and help in the recovery of a postpartum woman by their antioxidation, antibacterial, analgesic and anti-inflammatory activities (Panyaphu et al. 2012)</li> </ul>

was effective in improving lactation or milk supply, as manifested by increased weight gain of the babies (Patel and Gedam 2013). Different types of breast massage had been proven to help reduce immediate pain and resolve symptoms of blocked mammary duct (Anderson et al. 2019; Witt et al. 2016; Cho et al. 2012). Apart from reducing breast pain, a quasi-experimental study had also shown the effectiveness of *Oketani* breast massage in enhancing suckling conditions of babies (Cho et al. 2012).

### 3.2 Hot Compress

Hot compress, also known as ‘*bertungku*’ in Malay, can be defined as a point massage on specific body areas like the abdomen, chest, limbs, shoulder and neck (Ministry of Health Malaysia 2009). The ‘*tungku*’ uses an object like river stone or iron, which is heated and placed on some herbal leaves like *Alpinia galangal* (*lengkuas*), *Morinda citrifolia* (*mengkudu*) or *Piper betel* (*sirih*), before it is wrapped with a layer of cloth (Mohd Yusoff et al. 2018) (Fig. 1). Hot compression is believed to dissolve residual blood clots in the uterus and help it to contract (Ministry of Health Malaysia 2009). It is perceived to be suitable for “lifting” the womb and preventing it from sagging in old age (Ministry of Health Malaysia 2020). However, there was no retrievable evidence to support the traditional claims that hot compress can prevent uterine prolapse or stimulate uterine contraction or lochia production.

People also believe that hot compress helps break down fat tissue and help women’s body return to its pre-pregnancy state (Ministry of Health Malaysia 2009). In the regression model of a study, never using hot stone compression together with several other factors including, low physical activity, higher energy intake in the diet and not continuing breastfeeding six months postpartum explained 55.1% variation in weight retention two to six months after the postpartum period (Fadzil et al. 2018). Besides, in a randomized control study in Thailand, hot and herbal compresses also decreased breast pain among postpartum mothers who had breast engorgement (Ketsuwan et al. 2018).

**Fig. 1** Hot stone compress or '*tungku*'. A heated ball-like shaped river stone wrapped with herbal leaves for hot stone compression



### 3.3 Abdominal Wrap

The abdominal wrap is also known as '*bengkung*' or '*barut*' in Malay. The traditional body wrap is a long cloth used to cover the area, starting from just beneath the breastbone down to the thighs (Mohd Yusoff et al. 2018). Nowadays, '*bengkung*' has also been alternatively used as an abdominal binder, girdle and corset (Sajar et al. 2016). Usually, an herbal paste made from specific herbs and spices is smeared on the entire abdomen before the wrapping is done. '*Bengkung*' is tightly wrapped around the women's waist to provide lower abdominal support and help realign the spine to its normal shape (Ministry of Health Malaysia 2009). It is also believed to help in reducing body weight, deflating the abdomen and restoring the original body shape after delivery (Mohd Yusoff et al. 2018).

However, the effect of "*bengkung*" on body weight reduction after delivery was not proven before (Fadzil et al. 2018). Nonetheless, a quasi-experimental study involving thirty Egyptian postpartum women had found that the use of abdominal binder after vaginal delivery led to a 28% higher increment of abdominal muscles strength and 3.4% higher reduction in waist/hip ratio compared to abdominal exercise (El-Mekawy et al. 2013). Besides, based on the results of two randomised controlled

trials, elastic abdominal binder reduced postoperative pain after delivery (Ghana et al. 2017; Gustafson et al. 2019). However, these two studies had reported contrasting findings on the effect of abdominal binder in preventing postpartum haemorrhage (Ghana et al. 2017; Gustafson et al. 2019).

### 3.4 Herbal Bath

Specific bathing prohibitions or restriction in many cultures could be linked to the 'hot' and 'cold' beliefs (Dennis et al. 2007). The herbal bath provides an alternative to bathing restriction due to these beliefs and can expose the body of the postpartum mother to the heat (Kim-Godwin 2003). In Malay culture, warm bathing is allowed, although postpartum mothers are advised to avoid taking a bath in the early morning to prevent the 'wind' from entering the body (Mohd Yusoff et al. 2018; Dennis et al. 2007). The water used in the herbal bath needs to be warm or hot and is added with various herbs such as *Desmodium gangeticum* (*daun meringan*) (Mohd Yusoff et al. 2018).

Among the Indians, an herbal bath immersed with many different leaves is practised to improve blood flow and reduce fatigue (Fadzil et al. 2016). A study reported that the medicinal plants used in the preparation of herbal baths in a community in Northern Thailand contain phytochemicals that have antioxidation, antibacterial, analgesic and anti-inflammatory activities (Panyaphu et al. 2012). The phenolic compounds and flavonoids may help in the immunity and recovery of the postpartum woman by their antioxidation activities. Besides, the good-smelling volatile oils in hot water can increase blood circulation, clear airways and make one feel relaxed (Panyaphu et al. 2012).

## 4 Discussion

### 4.1 The Physical and Psychological Benefits of Postnatal Practices

From the modern medical perspective, certain traditional postpartum practices may positively affect health by providing good rest, nourishment, and appropriate hygiene (Dennis et al. 2007). In Malaysia, among all the traditional postpartum practices being studied, hot stone compression was the only practice found to have a role in weight loss at six months after childbirth (Fadzil et al. 2018). The hot stone compression is usually concentrated in the abdominal area, thus allowing more fat burning in this area. Besides, the support provided by an abdominal wrap or binder can lead to increased abdominal muscles strength (El-Mekawy et al. 2013). This effect seems to justify the benefit of abdominal wrap in supporting the spine and improving posture.

Pain reduction is another important outcome of these postnatal practices. Postpartum women suffer considerable pain during postpartum period from Caesarean operation, perineal tear, episiotomy wound, epidural injection site and breast engorgement. The use of an abdominal binder can help to alleviate the pain from Caesarean operation through circumferential compression to reduce stress on the surgical wound during movement and walking (Gustafson et al. 2019). Nonetheless, a review had mentioned the need for more studies to investigate its effect in managing pain and improving mothers' functional capacity during the postnatal period (Szkwara et al. 2019). Besides, breast massage and hot compresses help to relieve breast pain resulting from breast engorgement, plugged ducts and mastitis.

WHO recommendation had pointed out the importance of assessing both emotional wellbeing and social support of the postpartum mothers and families (Mathai et al. 2010). Postnatal depression is the most common psychological problem among postpartum mothers. In Malaysia, the prevalence of postnatal depression was ranging from 6.8% to 27.3% (Mohd Arifin et al. 2018). A review had reported that the lack of social support during the postpartum period could significantly contribute to postnatal depression (Norhayati et al. 2015). The good side of massage therapy is that it can prevent postnatal depression, anxiety and sleep problem among postpartum mothers. Massage produces these calming and relaxing effects by increasing serotonin and dopamine hormones and reducing cortisol levels in mothers with depression and anxiety (Field et al. 2004). In line with the WHO recommendation of exclusive breastfeeding for the first six months of a baby's life, breast massage helps to increase milk production through its relaxation effect (Patel and Gedam 2013).

The protective effect of massage in reducing postnatal depression risk could indirectly be due to social support gathered during massage sessions (Azidah et al. 2006). By having a postnatal massage or observing postnatal practices, postpartum mothers can have more access to social support, thus reducing the incidence of postnatal depression. Most importantly, massage during the postpartum period, is generally safe and a study had reported that there was no mother or child physical harm or adverse events that had occurred from that (Fogarty et al. 2019). However, some side effects that might occur post massage procedures include temporary pain, discomfort, bruising, swelling, and allergic reactions to massage oils (Ministry of Health Malaysia 2019).

#### ***4.2 Integration of Traditional Postnatal Care into Modern Medicine***

Most women in Malaysia believe in the importance of observing traditional postnatal practices to avoid ill health in later life (Fadzil et al. 2016). Furthermore, studies in the local population had reported the high prevalence of utilisation of postnatal care practices (Nik Yusof Fuad et al. 2020; Hishamshah et al. 2012). The Ministry of Health Malaysia is keen to promote safe practices in Malay postpartum care

according to the WHO Traditional Medicine recommendation (Ministry of Health Malaysia 2020; WHO Traditional Medicine Strategy 2002-2005 2020). This stand had led to the setting-up of integrated Traditional and Complementary Medicine (T&CM) units in hospitals throughout Malaysia. This integration aimed to promote health in postpartum mothers and avoid harmful beliefs or practices that can badly affect postpartum mothers and babies (Ministry of Health Malaysia (2009).

The postnatal wellness massage and midwifery care services are offered in a few government hospital settings and are free of charge (Ministry of Health Malaysia 2009). The midwifery care service is similar to traditional postnatal care and consists of whole-body massage, hot compress and body wrap. However, the coverage and accessibility to the midwifery service under T&CM are limited since a few selected hospitals provide it and conducted only in hospital settings (Ministry of Health Malaysia 2020; Raja Ikram and Abd Ghani 2015). Moreover, there is a lack of integration between the T&CM and modern medicine where both systems are being treated in isolation (Raja Ikram and Abd Ghani 2015). An integrated service via electronic health records was proposed to standardize information exchange between modern and traditional medicine providers (Raja Ikram and Abd Ghani 2015). Apart from that, little is known about other factors, such as awareness, accessibility and resource, which could influence the utilisation of the midwifery care service provided by the government hospital.

### ***4.3 Private Postnatal Service***

Since the postnatal care practice is still highly observed among Malaysian women, there is also a high demand for private postnatal services. This had led to the setting up of many private postnatal care centres in Malaysia nowadays. Postnatal care service is exceptionally well-received in the Chinese community (Mohd Yusoff et al. 2018). There is also a rapid expansion of the utilisation of private postnatal care services by the Malay community. One example of postnatal care service is MamaCare, a program by the National Population and Family Development Board, Malaysia. This program offers a holistic postnatal care service designed to optimize the wellness status of postpartum mothers and families. Additionally, MamaCare programme also gives postnatal care training for older women and single mothers from low-income families.

The postnatal service by private centres is delivered by a trained confinement lady taking care of both the mother and new-born baby. The confinement lady will accompany the mother during the day or stay together at the mother's house to attend to the mother's needs like bathing, preparing "confinement" meals and helping out with simple house chores like cleaning and laundry. For the Chinese community, most of the service operates at the postnatal centres, where the postpartum mother will receive such treatments. The services offered for Malay postnatal care, are body massage, herbal bath, hot compress and body wrap. For all these services, the charge can be very costly.

Although the factors contributing to using private postnatal care service are unknown, this could be influenced by demographic and economic factors (Mohd Yusoff et al. 2018). In Singapore, postpartum women in the urban setting particularly described their husbands as their main support source. They did not rely only on their mother or mother-in-law for support during the postnatal period (Naser et al. 2012). This also means that the husbands have a big responsibility in taking care of the baby. These women are also somewhat lenient in practising confinement. This trend may cause the mothers to feel a lack of support and isolated (Fadzil et al. 2016). These factors indicate a strong need for additional support and care for postpartum mothers, particularly those living in urban area. Therefore, the private postnatal service serves as an alternative option for this situation.

One of the limitations of this study lies on the heterogeneity of the research types and study design. For example, different research types were included, whether it is qualitative or quantitative. In term of study design, this review included both intervention study and cross-sectional study. Another limitation of this review is that it included studies that were conducted in different populations or settings. This is because there is possibility of discrepancies in the implementation of such postnatal practices in different populations. For example, postnatal massage would differ in term of the technique, duration and substances or massage oil used for the massage. Therefore, this factor could reduce the generalisability of the study findings. Future studies have to address these issues in order to produce more quality research in postnatal practices.

## 5 Conclusion

The present study reported scientific findings of traditional postnatal practices. This study found that the physical benefits provided by the traditional postpartum practices are mainly related to weight loss and pain reduction. Whereas, the importance of these traditional postnatal practices lies on their psychological impacts in reducing anxiety and postnatal depression among the postpartum mothers. Some of these benefits are parallel to the WHO recommendations pertaining to postnatal care that include exclusive breastfeeding and providing social support. However, there is limited or no retrievable evidence to support or refute some other traditionally claimed benefits of the practices.

This information will also help healthcare providers to support the traditional postnatal practices, thus allowing better integration of traditional postnatal practices into modern medicine. Since postnatal care practice is still highly observed among Malaysia women, integrating the two systems would enable individuals to have respectful, cost-effective and effective access to traditional medicine. More local studies of high quality are needed to evaluate such practices' effectiveness and safety. Future studies in this area can also evaluate the factors associated with the provision and utilisation of postnatal care by the government and private sectors.



**Acknowledgements** We acknowledge the continuous support granted by the Dean of Faculty of Hospitality, Tourism and Wellness, University Malaysia Kelantan to this study.

## References

- Mathai, M., Von Xylander, S., Zupan, J., Mathai Matthews, Z.J., Zupan, J.: WHO technical consultation on postpartum and postnatal care. World Health Organisation, pp. 1–56 (2010) World Health Organisation. <https://doi.org/9789241506649>. Accessed 20 Nov 2020
- Withers, M., Kharazmi, N., Lim, E.: Traditional beliefs and practices in pregnancy, childbirth and postpartum: a review of the evidence from Asian countries. *Midwifery* **56**, 158–170 (2018)
- Kim-Godwin, Y.S.: Postpartum beliefs & practices among non-western cultures. *MCN Am. J. Matern. Nurs.* **28**, 74–78 (2003)
- Fadzil, K., Shamsuddin, F., Wan Puteh, S.E.: Traditional postpartum practices among Malaysian mothers: a review. *J. Altern. Complement. Med.* **22**, 503–508 (2016)
- Mohd Yusoff, Z., Amat, A., Naim, D., Othman, S.: Postnatal care practices among the Malays, Chinese and Indians: a comparison. In: SHS Web of Conferences, vol. 45, pp. 1–6 (2018)
- Mohd Azmi, N.A., Abdul Rahim, N.A., Omar, E.A.: Malay traditional practices surrounding the postpartum period: a qualitative case study. *Evid. Midwifery* **17**(2), 40–46 (2019)
- Nik Yusof Fuad, N.F., Ching, S.M., Awg Dzulkarnain, D.H., Cheong, A.T., Zakaria, Z.A.: Complementary alternative medicine use among postpartum mothers in a primary care setting: a cross-sectional study in Malaysia. *BMC Complement. Med. Ther.* **20**, 197 (2020)
- Hishamshah, M., et al.: Belief and practices of traditional post partum care among a rural community in Penang Malaysia. *Internet J. Third World Med.* **9**, 1–9 (2012)
- Ministry of Health Malaysia. [www.moh.gov.my/index.php/database\\_stores/attach\\_download/348/267](http://www.moh.gov.my/index.php/database_stores/attach_download/348/267). Accessed 20 Nov 2020
- Ministry of Health Malaysia, Traditional and Complementary Medicine Practice Guideline on Malay Postnatal Care (2009)
- Gasibat, Q., Suwehli, W.: Determining the benefits of massage mechanisms: a review of literature. *Artic. J. Rehabil. Sci.* **2**, 58–67 (2017)
- Azidah, A.K., Shaiful, B.I., Rusli, N., Jamil, M.Y.: Postnatal depression and socio-cultural practices among postnatal mothers in Kota Bharu, Kelantan, Malaysia. *Med. J. Malaysia* **61**, 76–83 (2006)
- Imura, M.: The psychological effects of aromatherapy-massage in healthy postpartum mothers. *J. Midwifery Women's Heal.* **51**, 21–27 (2006)
- Ko, Y.L., Lee, H.J.: Randomised controlled trial of the effectiveness of using back massage to improve sleep quality among Taiwanese insomnia postpartumwomen. *Midwifery* **30**, 60–64 (2014)
- Lemasters, K., et al.: Maternal depression in rural Pakistan: the protective associations with cultural postpartum practices. *BMC Public Health* **20**, 1–13 (2020)
- Patel, U., Gedam, S.: Effect of back massage on lactation among postnatal mothers. *Int. J. Med. Res. Rev.* **1**, 5–11 (2013)
- Anderson, L., Kynoch, K., Kildea, S., Lee, N.: Effectiveness of breast massage for the treatment of women with breastfeeding problems: a systematic review. *JBI Database Syst. Rev. Implement. Rep.* **17**, 1668–1694 (2019)
- Witt, A.M., Bolman, M., Kredit, S., Vanic, A.: Therapeutic breast massage in lactation for the management of engorgement, plugged ducts, and mastitis. *J. Hum. Lact.* **32**, 123–131 (2016)
- Cho, J., Ahn, H.Y., Ahn, S., Lee, M.S., Hur, M.-H.: Effects of oketani breast massage on breast pain, the breast milk pH of mothers, and the sucking speed of neonates. *Korean J. Women Heal. Nurs.* **18**, 149–155 (2012)
- Fadzil, F., et al.: Predictors of postpartum weight retention among urban Malaysian mothers: a prospective cohort study. *Obes. Res. Clin. Pract.* **12**, 493–499 (2018)



- Ketsuwan, S., Baiya, N., Paritakul, P., Laosooksathit, W., Puapornpong, P.: Effect of herbal compresses for maternal breast engorgement at postpartum: a randomized controlled trial. *Breastfeed. Med.* **13**, 361–365 (2018)
- Sajar, N., Aziz, A.A., Aris, A.: Malay *Bengkung*: traditional to contemporary design. In: Anwar, R., Mahamood, M., Md. Zain, D., Abd Aziz, M., Hassan, O., Abidin, S. (eds.) *Proceedings of the Art and Design International Conference (AnDIC 2016)*, pp. 63–71. Springer, Singapore (2018). [https://doi.org/10.1007/978-981-13-0487-3\\_8](https://doi.org/10.1007/978-981-13-0487-3_8)
- El-Mekawy, H., Eldeeb, A., El-Lythy, M., El-Begawy, A.: Effect of abdominal exercises versus abdominal supporting belt on post-partum abdominal efficiency and rectus separation. *Int. Sci. Index.* **7**, 44–48 (2013)
- Ghana, S., Hakimi, S., Mirghafourvand, M., Abbasalizadeh, F., Behnampour, N.: Randomized controlled trial of abdominal binders for postoperative pain, distress, and blood loss after cesarean delivery. *Int. J. Gynecol. Obstet.* **137**, 271–276 (2017)
- Gustafson, J.L., Dong, F., Duong, J., Kuhlmann, Z.C.: Elastic abdominal binders reduce cesarean pain postoperatively. *Kansas J. Med.* **11**, 48–53 (2019)
- Dennis, C.L., Fung, K., Grigoriadis, S., Robinson, G.E., Romans, S., Ross, L.: Traditional postpartum practices and rituals: a qualitative systematic review. *Women's Heal.* **3**, 487–502 (2007)
- Panyaphu, K., Sirisa-ard, P., Ubol, P.N., Nathakarnkitkul, S.: Phytochemical, antioxidant and antibacterial activities of medicinal plants in Thailand as post partum herbal bath. *Phytopharmacology* **2**, 92–105 (2012)
- Szkwara, J.M., Milne, N., Hing, W., Pope, R.: Effectiveness, feasibility, and acceptability of dynamic elastomeric fabric orthoses (DEFO) for managing pain, functional capacity, and quality of life during prenatal and postnatal care: a systematic review. *Int. J. Environ. Res. Public Health* **16** (2019)
- Mohd Arifin, S.R., Cheyne, H., Maxwell, M.: Review of the prevalence of postnatal depression across cultures. *AIMS Public Heal.* **5**, 260–295 (2018)
- Norhayati, M.N., Nik Hazlina, N.H., Asrenee, A.R., Wan Emilin, W.M.A.: Magnitude and risk factors for postpartum symptoms: a literature review. *J. Affect. Disord.* **175**, 34–52 (2015)
- Field, T., Diego, M.A., Hernandez-Reif, M., Schanberg, S., Kuhn, C.: Massage therapy effects on depressed pregnant women. *J. Psychosom. Obstet. Gynecol.* **25**, 115–122 (2004)
- Fogarty, S., McInerney, C., Stuart, C., Hay, P.: The side effects and mother or child related physical harm from massage during pregnancy and the postpartum period: an observational study. *Complement. Ther. Med.* **42**, 89–94 (2019)
- Ministry of Health Malaysia, *Traditional and Complementary Medicine Practice Guideline on Malay Massage* (2019). <http://tcm.moh.gov.my/v4/pdf/guideline/MALAYTRADITIONAL.pdf>
- WHO *Traditional Medicine Strategy 2002–2005*. <https://doi.org/WHO/EDM/TRM/2002.1>. Accessed 23 Nov 2020

- Raja Ikram, R.R., Abd Ghani, M.K.: A framework for integrated postnatal care services for traditional Malay medicine and modern medicine. *Int. J. Appl. Eng. Res.* **10**, 4939–4947 (2015)
- Naser, E., Mackey, S., Arthur, D., Klainin-Yobas, P., Chen, H., Creedy, D.K.: An exploratory study of traditional birthing practices of Chinese, Malay and Indian women in Singapore. *Midwifery* **28**, 865–871 (2012). <https://doi.org/10.1016/j.midw.2011.10.003>

# **Sustainable Finance, Innovation and Business Uncertain Situations**

# Climate Risks in Tunisia



Haykel Hadj Salem, Nadia Mansour , and Salha Ben Salem

**Abstract** Every country in the world has been affected by climate change. Global warming is considered a structural handicap for developed economies as well as developing economies. All the scientists have agreed that global warming can lower the pace of their growth and it can disrupt its financial stability. For some countries, this phenomenon can even worsen their financial instabilities. For these reasons, scientific research has been directed towards very advanced empirical studies linking the climate cycle with the economic cycle and these have been noticed by the development of the Integrated Assessment Models (IAM). This kind of model is considered as a macroeconomic model of climate change but in our case, we introduce this module in the Dynamic Stochastic General Equilibrium Model applied for the Tunisian economy. Our paper develops an environmental DSGE (E-DSGE) model whose objective is to try to sensitize political decision-makers as well as Tunisian financial decision-makers, to be more concerned about climate change in their economic policies from an evaluation of the effects of these climatic changes on financial stability in Tunisia. This study finds the negative effect of temperature on the whole of macroeconomic variables which led to the persistence of financial instability in Tunisia.

**Keywords** Climate change · Banking · Financial stability · Tunisia

## 1 Introduction

The first central bank in history, the Riks bank had been created to finance the war expenses of the Swedish government. Today it is another form of “war” that central

---

H. H. Salem · S. B. Salem  
University of Monastir, Monastir, Tunisia

N. Mansour (✉)  
University of Sousse, Sousse, Tunisia  
e-mail: [Mansour.nadia@usal.es](mailto:Mansour.nadia@usal.es)

Larime Laboratory, University of Salamanca, Salamanca, Spain

banks should lead, alongside the signatory states of the Paris Agreement of 2015, against climate change and its consequences.

“Climate change is a macroeconomic phenomenon: it is global. The analysis of climate change also overlaps in important ways with other issues traditionally covered by research in macroeconomics: growth and development, technological change, and globalization (in trade in goods and financial markets, knowledge spillovers, etc.)” (Hassler and Krusell 2018).

Within this framework, the mandates of central banks assign them an objective of price stability. And, henceforth, a financial stability objective. The management of climate risk is fully within the remit of the second objective because the climate risk is a source of financial risks (Galhau 2019). This observation is at the heart of the ambition of the Central Banks and Supervisors Network for Greening, the Financial System - NGFS, launched by the Banque de France at the end of 2017.

Likewise, and bridging two of the most pressing concerns which are facing emerging countries (Junior and Cintado 2021), namely financial inclusion and climate change, the Central Bank of Tunisia (CBT) has reiterated its unwavering commitment to promoting inclusive green finance through the progressive adherence of the banking system to a logic of societal responsibility, and especially since it has joined the Network of Central Banks and Supervisors Network for Greening, the Financial System—NGFS.

This article sets out, in the first section, the environment - DSGE model of Tunisia. The second section will present the relationship between financial stability and Climate Change. In the third section, we will focus on the interpretation of the results.

## 2 Literature Review

William Nordhaus is among the first economists who evaluate the macro-economic impacts of climate change, rely on the economic aspects of reducing carbon emissions. We can add also, Kenneth Arrow, Joseph Stiglitz (Report of the Intergovernmental Panel on climate change, IPCC), Kenneth Rogoff, and Paul Krugman. Since the reflections of the latter economists, researchers have oriented their research on this topic. A variety of studies have focused on assessing the economic impacts of climate change because the decision-makers and their advisors need methodologies to determine if/when and how to adapt to climate change. We will be content to present a few studies related to our topic.

The paper of Batten (2018) identified some channels through which physical and transition risks of climate change are transmitted to the macro-economy, either through unpredictable and predictable shocks. Like a previous Bank of England study, this study analyzed also the macroeconomic risks deriving from climate change, using some theoretical and empirical modeling. Some studies have succeeded to help a wider range of economic agents to understand the economic consequences

of climate change and to consider it a necessity when we evaluate some economic issues.

Acevedo et al. (2020) evaluate the effects of weather shocks on economic activity for low-income countries and high-income countries and compare them. Their study finds a negative effect of temperature on the majority of macroeconomic variables: output (agricultural and industrial output), investment, labor productivity. They conclude that low-income countries suffer than high-income countries. For example, after seven years an increase of 1 degree in average annual temperature decreases the aggregate output by about 2 % and the investment about 10% for the case of hot low-income countries.

Batten et al. (2020) showed, from physical risks and from transition risks of Climate change could affect a central bank's ability to meet its monetary stability objectives. The macroeconomic impact of climate change is explained in two ways: through gradual warming and through extreme weather events (droughts, floods, storms, and sea level rises). Climate change can cause an increase in inflationary pressures, a decrease in national and international production, larger financial losses, lower wealth, and lower GDP. They add that climate risks can affect central banks' monetary policy objectives and they propose some possible policy responses (Rubio 2020).

### **3 The Economic System, the Financial Stability, and Climate Change**

#### ***3.1 The Economic System and Climate Change: The Integrated Assessment Models (IAM)***

The researchers are oriented to join climate to the economy with the aim to predict the impacts of greenhouse gas emissions during these two decades. They offer integrated assessment models (IAM) which are designed to present the relationship between the portrayal of the climate and the process of economic growth. These models are popular in this domain because they focus also on the long-run or short-run effects (economic damages and environmental damages). The interest of these researches consists to understand the impact of climatic change on human lives and livelihoods in the two kinds of countries (developing and developed countries). The IAM literature presents this kind of model with its own strengths and weaknesses and it can breakdown into fall into five structures: welfare optimization, general equilibrium, partial equilibrium, simulation, and cost minimization.

In our article, we choose the welfare optimization models. This kind of model can be added to our DSGE model (Mansour et al. 2021) because we can remind that the production of goods and services can serve the consumption and the investment and can cause both emissions and economic output. From this cycle, we note greenhouse gas emissions affect the climate and cause damages that reduce production. We add

also that abatement reduces emissions but causes costs that reduce also economic output. This kind of model which maximizes the discounted present value of Welfare across all time periods is also considered like a Dynamic optimization model. From the climate–economics models literature, we can present two-level of welfare optimization models: a global like a DICE-2007 (Nordhaus 2008) and a regional like a RICE-2004 (Yang and Nordhaus 2006).

Each IAM has two connected models: the climate model and the economic model. The relation between these two parts of the same IAM is explaining by the damage function and an abatement function. For example, the damage function translates the output of temperature (other climate characteristics) from the climate model to the economic model. This relationship can be presented in its simple form. The damage function can be presented as following:

$$D = a + T^b$$

With:

D: the value of damages (in dollars or as a percent of output)

T: the difference from that of an earlier period

b: the shape or steepness of the curve

From many articles, we note that the damage function has three proprieties: the choice of exponents and other parameters (a quadratic function of temperature change), the form of the damage function (continuity), and the characteristics of damages (damages are modeled as losses to economic output (or GDP) and losses to income (GDP per capita).

### ***3.2 The Financial Stability and Climate Change***

Climate change is the main cause of the doubling of natural disasters in the world in twenty years, the UN warned on Monday 12 October, noting that natural disasters have killed more than 1.2 million people since 2000. Over the last 20 years (2000–2019), 7,348 natural disasters have been recorded worldwide (at an estimated cost of nearly \$3 trillion), almost double the number between 1980 and 1999, a report by the UN Office for Disaster Risk Reduction (UNSDIR) reveals. Also, climate risk has increasingly emerged as one of the main risks to the environment.

Unfortunately, the measures taken so far to combat rising temperatures are still insufficient, and this is likely to disrupt the business world, while the global economic crisis is likely to continue to worsen. Also, much work remains to be done to assess the costs of the economic impacts of climate change. Indeed, “Climate change poses significant risks to financial stability”, warned Lael Brainard, on 9/11/2020, one of the officials of the US Central Bank (Fed).

In this context, to the tragedy of the commons, the Governor of the Central Bank of England and Chairman of the Financial Stability Board Mark Carney, in his speech entitled “The Tragedy of the Horizons” in September 2015, added a second tragedy:

that of “distant horizons”. These go far beyond political time or the time of financial supervisors. In this sense, Carney (2018) has highlighted three ways in which climate change can threaten financial stability:

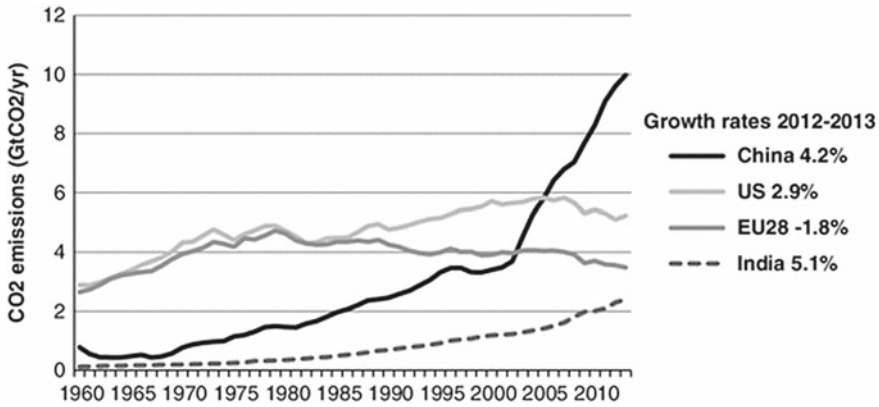
1. Physical climate risks (Giacomo and Silvia 2021), i.e. the uncertain financial impacts on economic agents and asset portfolios resulting from the effects of extreme weather events (whose frequency and intensity are set to increase exponentially) as well as increases in average temperatures and sea levels. The insurance sector probably remains the most affected by these risks (note that, according to Swiss reinsurer Swiss Re, the cost of natural and man-made disasters in 2017 is estimated at USD 337 billion, and the losses borne by insurers at nearly USD 144 billion);
2. Transition risks (Battiston et al. 2021), i.e. uncertain financial impacts, materializing through the sudden revaluation of certain assets (or even their collapse: the “Minsky moment”) resulting from the effects of the implementation of a low-carbon economic model on economic agents (such as regulatory reforms and technological developments). These risks are mainly conveyed by sectors that are over-exposed to global warming or unprofitable in the context of its limitation, namely “stranded assets” (i.e. investments or assets experiencing depreciation due to market developments, in particular, the fossil fuel sector);
3. Litigation risks (Chenet et al. 2021), i.e. the financial consequences of possible lawsuits seeking climate change liability (which include not taking sufficient account of climate risks). For example, in January 2018, New York City sued five oil companies in federal court for their climate change liability. The Paris Council, on 6 February 2018, decided to study the feasibility of taking the oil companies to court, raising the question of the legal recognition of “climate crimes”.

Having become aware of the systemic impact of climate risk, the role of the regulator is to encourage the incentives to finance the energy transition than to put in place an adequate framework for the management of the risks of financial institutions. So, the role of the regulator (banking, insurance, and financial) is threefold:

1. to encourage the financial sector to finance the low-carbon transition;
2. addressing the existing knowledge gap and climate risk assessment by financial institutions;
3. aligning the horizons for risk management (Fig. 1).

The financial sector is thus gradually becoming aware of the systemic impact, both in a non-linear manner and unpredictable climate change. The major public financial institutions first (Bank European Investment Bank; European Bank for Reconstruction and Development), then the UNEP Finance Initiative, and the financial institutions themselves have taken up the subject. Note the rise of green bonds; the disinvestment movement of certain fossil fuels; exponential investment in renewable energy; the creation of green investment funds; the rise of green bonds; the disinvestment movement of certain fossil fuels; the exponential of socially responsible investment; the “Finance for Tomorrow” initiative launched by the Paris financial center





**Fig. 1** Climate risks according to greenhouse gas emission trajectories. *Source:* Schoenmaker and Van Tilburg (2016)

in June 2017; etc.). Setting up a “green” financial system therefore now involves a range of issues (the pursuit of sustainable economic growth; tackling systemic climate risk; meeting investors’ expectations; and, more anecdotally, the issue of the competitiveness of the financial markets. global financial markets; etc.).

Tunisia committed itself at the 21st Conference of the Parties (COP 21) to reduce its CO2 emissions by 41% by 2030. This commitment expresses Tunisia’s determination to take its share of responsibility and contribute to the global effort to combat global warming. A national strategy [1] was put in place in October 2012 as part of the implementation of the United Nations Framework Convention on Climate Change, with the support of the German cooperation agency GIZ.

The Tunisian government has not clearly announced which scenario was finally chosen, but its choices of economic development and its attitude of follow-through lead us to believe that it has opted, despite its inefficiency, for the “all economic” scenario. This choice implies an extreme sensitivity to the oil game and a very strong need for adaptation.

#### 4 The E-DSGE Model of Tunisia: The DSGE Model of Tunisia with the Integration of the Climate Change

Our E-DSGE model of Tunisia is a DSGE model which we introduce climate change following the DICE model of Nordhaus (2008) and the model of Rannenberg (2016).

##### The structure of the E-DSGE model of Tunisia

###### 1. Households

The economy features by a representative household who is infinitely-lived and determine their consumption,  $C_t$ , and labor supply,  $l_t$ , so that to maximize its utility function:

$$E_t \left\{ \sum_{i=0}^{\infty} \beta^i \left[ \ln(C_{t+i} - hC_{t+i-1}) - \frac{\nu}{1+\varphi} (I_{t+i}^s)^{1+\varphi} \right] \right\}$$

where  $E_t$  is the expectation operator,  $\beta^i$  is the household’s subjective discount rate and  $h$  denotes the degree of internal habit formation.  $\varphi$  is the intertemporal elasticity associated with labor supply.

The household saves by depositing funds with banks and by buying government bonds at a nominal risk-free rate.<sup>1</sup>

This household is subject to the following budgetary constraint:

$$P_t C_t = w_t P_t l_t + P_t prof_t + R_{t-1} B_{t-1}^T - B_t^T - P_t T_t$$

The household receives the real wage,  $w_t$  from supplying labor to retailers and derive profit income from their ownership of retail firms and capital goods producers.  $B_{t-1}^T$  is the financial assets (deposit and government bonds) owned by the households at the end of period  $t - 1$  remunerated in period  $t$  with a nominal risk-free rate,  $R_{t-1}$ . These revenues are exploited in the purchase of retailer goods  $C_t$  at an aggregate price  $P_t$ , payment taxes  $T_t$ , and invest their financial assets.

### 2. Capital Goods Producers

Capital goods produce are owned by households. They produce new capital goods using a technology that yields  $1 - \frac{\eta_i}{2} \left( \frac{I_{t+i}}{I_{t+i-1}} - 1 \right)^2$  capital goods for each unit of investment expenditures  $I_t$ , with  $\eta_i \geq 0$  denoting the curvature of the investment adjustment cost. Capital goods are sold to entrepreneurs at currency price  $P_t Q_t$ . The real expected profits of the capital goods producer are then given by

$$E_t \left\{ \sum_{i=0}^{\infty} \frac{Q_{t+i}}{Q_t} \beta^i I_{t+i} \left[ Q_{t+i} \left( 1 - \frac{\eta_i}{2} \left( \frac{I_{t+i}}{I_{t+i-1}} - 1 \right)^2 \right) - 1 \right] \right\}$$

$Q_t$  denotes the marginal utility of real income of the household.

### 3. Retailers

The retailers are indexed by  $i$  and produce the varieties of the products consumed. Each retailer operates under monopolistic competition and is owned by households, with the demand for its product given by

$$Y_t(i) = \left( \frac{P_t(i)}{P_t} \right)^{-\epsilon} Y_t$$

where:  $\epsilon > 1$  is the elasticity of substitution between different varieties. Retailers use the labor force  $l_t(i)$  of the households and rent capital services  $K_t^s(i)$  at the rental

---

<sup>1</sup> We assume that both assets have the same maturity and therefore they are perfectly substitutable and earn the same interest rate.

rate  $r_t^k$  from entrepreneurs. Hence, the production of the retailer firm  $i$  is as follow:

$$Y_t(i) = \exp(\Omega_t) (K_t^s(i))^\alpha (\exp(a_t)l_t(i))^{1-\alpha}$$

where  $a_t$  is transitory productivity shock.

$\Omega_t < 1$  is the percentage of the output that is lost because of climate change. Like Nordhaus and Szyorc (2013), we assume that loss coefficient:

$$\Omega_t = \frac{1 - AB_t}{1 + CD_t} = \Omega_{AB} \Omega_{CD}$$

where  $\Omega_{AB}$  is the climate damage function and it measures the losses implied by natural disasters or production distraction.  $\Omega_{CD}$  are the abatement costs and it represents the investment cost required to shift from fossil fuel to clean energy sources. The latter components, also called mitigation costs, are the cost of reducing Greenhouse gas (GHG) emissions.

Generally, climate damages are represented by Nordhaus with a quadratic function of the atmospheric temperature  $T_{At}$  such as:

$$CD_t = a_1 T_{At} + a_2 T_{At}^2$$

where:  $a_1$  et  $a_2$  are scale parameters. In some cases, we have  $a_1$  is null or  $a_2$  is null. In our study, we consider  $a_2$  is null.

The climate damage coefficient  $\Omega_{CD,t} = (1 + CD_t)^{-1}$  represents the fraction of output, most commonly GDP in global macroeconomic models lost because of the increase in temperatures. We add that most researchers consider in their studies only damages in the expression of  $\Omega$ , in other words  $\Omega = \Omega_{CD}$ , and introduce the mitigation cost elsewhere or they ignored it (like in our case).

Retailers are subject to nominal rigidities in the form of Calvo (1983) contracts witch mean that only a fraction,  $1 - \xi^P$ , is allowed to optimize their price in a given period. The firms that are not allowed to optimize their prices index them to past inflation at a rate  $\gamma_p$  and the steady-state inflation rate at rate  $1 - \gamma_p$ .

#### 4. Bankers

The financial intermediation is risk-neutral and dies with a fixed probability  $1 - \theta$  after receiving the interest income on the loans they supply in the precedent period. If banker  $q$  dies, he consumes his accumulated real net worth  $N_t^b(q)$  at the end of period  $t$ . Dying bankers are substituted by new ones who receive a transfer  $N_n^b$  from households, which under the calibration presented very small.

The model assumes that Banks derive income from offering loans to nonfinancial firms.<sup>2</sup> Banker attributes two kinds of credits. The first kind is “risky inter period loans”. The  $B_t(q)$ , to entrepreneurs who need to purchase their capital stock at the

---

<sup>2</sup> Gertler and Karadi (2011) assume that banks derive profit by buying equity stakes, which makes them owners.

period  $t + 1$ . These credits are due at the starting of period  $t + 1$ . The second kind is “risk-free intro period working capital loans”,  $L_t^r(q)$ , to retailers who used to pay for the labor and capital services dedicated to the production at the end of period  $t$ .

The financial friction is introduced in the model through the fact that, after collecting deposits, the banker can distract a fraction of assets collected from the household and declare bankruptcy, if the bank is not adequately profitable (the moral hazard problem). This implies that the ability of a bank to attract deposits and to extend loans to entrepreneurs is positively related to its current net worth and its expected future wealth. Therefore, the intermediaries’ leverage ratio is facing an endogenous constraint. This constraint held on bank capacity to offer credit is playing an amplification role similar to the financial accelerator in the model. This problem of moral hazard only concerns the management of inter period credit and friction in a banks-entrepreneurs relationship.

Specifically, a banker can deflect a part  $0 \leq \lambda \leq 1$  of loans to entrepreneurs and use it. In this case, the banker declares bankruptcy and households recuperate the residual assets. This signifies that households will only make deposits if the banker has no incentive to default, that is, if  $[V_t^b(q) > \lambda L_t^e(q)]$ , where  $V_t^b(q)$  denotes the value of banker  $q$ ’s expected final wealth

$$V_t^b(q) = E_t \left\{ \sum_{i=0}^{\infty} (1 - \theta)\theta^i \left( \frac{1}{\prod_{j=0}^i R_{t+1+j}^r} \right) N_{t+1+i}^b(q) \right\}, R_{t+1}^r = \frac{R_t}{\Pi_{t+1}}$$

In the management of intra-period credits, there is no moral hazard problem between bankers and depositors, and also no friction in the bank–retailer relationship. Hence, the equilibrium credit rate equals the deposit rate, indicating that banks do not attract profit in this management. The intra-period credits activity thus is not affected by  $N_t^b(q)$  and  $V_t^b(q)$ , and therefore does not affect on lending to entrepreneurs.

To offer credit, the bank uses its own net worth (accumulated capital),  $N_t^b(q)$ , and the nominal deposits collected from households  $B_t(q)$ . Hence,  $P_t L_t^e(q) = P_t N_t^b(q) + B_t(q)$ .

The bank net worth is given by:

$$\begin{aligned} P_t N_t^b(q) &= [R_t^b P_{t-1} L_{t-1}^e(q) - R_{t-1} B_{t-1}(q)] \exp(e_t^z) \\ &= P_{t-1} [(R_t^b R_{t-1}) L_{t-1}^e(q) + R_{t-1} N_{t-1}^b(q)] \exp(e_t^z) \end{aligned}$$

where  $R_t^b$  is the net average return the bank wins on the inter period loan supply in period  $t - 1$ .  $e_t^z$  is an exogenous capital shock. The model assumes that all banks choose the identical ratio between inter period loans (loans to entrepreneurs) and their net worth. Therefore,  $L_t^e = \varphi_t^b N_t^b$ , where  $\varphi_t^b$  is the endogenous bank leverage. The variability  $\varphi_t^b$  is crucial for the results and it presents the main parameters for the total leverage, i.e. the ratio of total loans to bank net worth  $L_t/N_t^b$ .

$N_t^b$  is composed of the net worth of bank exist in the mark at the period  $t$ ,  $N_{et}^b$ , and net worth of new bankers,  $N_n^b$ .

$$N_t^b = N_{et}^b + N_n^b$$

$N_{et}^b$  is given by  $N_{et}^b = \theta Z_{t-1,t} N_{t-1}^b$ ,

$$Z_{t-1,t} = \frac{[(R_t^b - R_{t-1}) \varnothing_{t-1}^b + R_{t-1}]}{\Pi_t} \exp(e_t^z)$$

where  $Z_{t-1,t}$ ,  $t$  is the growth rate of the real net worth of the bankers in period  $t - 1$  and who is already in activity in period  $t$ .

In the equilibrium, we assume that  $V_t^b(q) = \lambda L_t^e(q)$ , and thus  $\lambda$  is calibrated so that it check this incentive compatibility constraint. If we divide both sides of the incentive constraint by  $N_t^b(q)$  we obtained  $\lambda \varnothing_t^b = \frac{V_t^b}{N_t^b}$  (remember that  $L_t^e = \varnothing_t^b N_t^b$ ).

Where  $\frac{V_t^b}{N_t^b}$ , measure the bank profitability since it presents the ratio of the anticipated value of being a banker to the net worth of the bank in the period  $t$ . this constraint can be expressed as

$$\widehat{\varnothing}_t^b = \widehat{L}_t^e - \widehat{N}_t^b$$

$$\widehat{\varnothing}_t^b = E_t \left\{ \theta \beta^2 Z^2 \widehat{\varnothing}_{t+1}^b + \varnothing^b \frac{R^b}{R} (\widehat{R}_{t+1}^b - R_t) \right\}$$

The equation shows that the Bank leverage positively related to the anticipated sum of profit margins on loan supply in period  $t$  and  $\widehat{R}_{t+1+i}^b - R_{t+i}$  d after.

### 5. Entrepreneurs

At the end of period  $t$ , the risk-neutral entrepreneur  $j$  buys capital  $K_t^j$  for price  $P_t Q_t$ . In period  $t + 1$ , the entrepreneur rents part of his capital stock to retailers at a rental rate  $P_{t+1} R_{t+1}^k$  and then sells the non-depreciated capital stock at price  $P_{t+1} Q_{t+1}$ . The average return to capital across entrepreneurs is given by

$$R_t^K = \Pi_{t+1} \frac{r_{t+1}^k + Q_{t+1}(1 - \delta)}{Q_t}$$

The gross nominal return on capital is affected by an idiosyncratic shock,  $\omega_{t+1}^j$ , generating a posterior heterogeneity among entrepreneurs. It presents in a log-normal distribution with mean 1, and variance  $\sigma^2$ . Thus, the posterior assets return of the entrepreneur are  $\omega_{t+1}^j R_{t+1}^K K_t^j P_t Q_t$ .

To finance investment, the entrepreneur uses his net worth,  $P_t N_t^j$ , and the credit,  $P_t L_t^j$ , borrowers from the bank at a gross nominal loan rate,  $R_t^L$ . Where  $P_t L_t^j = P_t(Q_t K_t^j - N_t^j)$ . Loan and interest are repaid in period  $t + 1$ . Therefore, there exists a threshold value,  $\varpi_{t+1}^j$ , below which the return to the investment project is not sufficient to refund the bank loan. This threshold is defined such thus the posterior

gross return on capital is equal to the loan borrowed by the bank:  $\omega_{t+1}^j R_{t+1}^K K_t^j P_t Q_t = R_{t+1}^L P_t L_{t+1}^j$

The presence of idiosyncratic risk gives rise to asymmetric information between the borrower and the bank regarding the outcome of the investment project. The bank proceeds to a costly state verification only if the entrepreneur defaults, that is, when  $\omega_{t+1}^j < \varpi_{t+1}^j$ . In this case, the bank pays a fraction,  $\mu$ , to check “the true value” of the borrower and which is proportional to the posterior gross return,  $\mu \omega_{t+1}^j R_{t+1}^K K_t^j P_t Q_t$ .

Like the bank’s program, the model supposes that after the realization of  $\omega_{t+1}^j R_{t+1}^K$ , entrepreneurs die with a fixed probability  $1 - \gamma$ . Dying entrepreneurs consume their equity  $V_t$ . This assumption ensures that entrepreneurs never become fully self-financing. The fraction  $1 - \gamma$  of entrepreneurs who have died are replaced by new entrepreneurs in each period who receive a transfer. We form households, which under our calibration is very small.

Following Christiano et al. (2010), any debt contract between the entrepreneur and the bank ( $L_t^j, R_t^L$ ) has to yield an expected revenue to the bank such that its expected return on these loans equals  $E_t R_{t+1}$ . Hence, the participation constraint of banks in the market for loans to entrepreneurs is given by

$$P_t L_t^j R_t = R_{t+1}^L P_t L_t^j \int_{\omega_{t+1}^j}^{\infty} f(\omega^j) d\omega^j + (1 - \mu) R_{t+1}^k P_t Q_t K_t^j \int_0^{\omega_{t+1}^j} \omega^j f(\omega^j) d\omega^j \tag{12}$$

This equation shows that in expectation level the entrepreneurial sector supports all costs related with bankruptcy via the loan rate. That is, it supports a very high-interest rate which covers also the bankruptcy costs of the bank.

Rannenberg (2016) demonstrates that all entrepreneurs choose the same leverage  $\varphi_t^e = Q_t N_t K_t$ , implying that  $\omega_{t+1}^j$  is the same across all firms as well.<sup>3</sup> Up to first order, these equations give rise to a relationship between  $E_t R_{t+1}^K$  and  $E_t R_{t+1}^b$  as follow:

$$E_t \widehat{R}_{t+1}^K - E_t \widehat{R}_{t+1}^b = \chi' \left( \widehat{K}_t + \widehat{Q}_t - \widehat{N}_t \right)$$

where  $\chi' \geq 0$ . Higher entrepreneurial leverage increases the probability of bankruptcy and thus expected marginal bankruptcy costs, which requires an increase in the entrepreneurial quasi-profit margin,  $E_t \widehat{R}_{t+1}^K / E_t \widehat{R}_{t+1}^b$ .

Finally, the total entrepreneurial net worth at the end of period t consists of that part of entrepreneurial equity  $V_t$  not consumed by dying entrepreneurs and a transfer from households to entrepreneurs  $W^e$ .

---

<sup>3</sup> Refer to Rannenberg (2016), Appendix A.4 for more details on the entrepreneur’s maximization program.

$$N_t = \gamma V_t + W^e$$

### 6. Monetary Policy and Market Equilibrium

The central bank determines the risk-free (nominal) interest rate following the interest feedback rule of the form:

$$R_t - 1 = (1 - \rho_i) + \psi_\pi(\log(\pi_t) - \log(\pi)) + \psi_y(\log(Y_t) - \log(\bar{Y}_t)) + \rho_i(R_{t-1} - 1) + e_t^i$$

where,  $\rho_i$  measure the interest rate smoothing,  $\psi_\pi$  and  $\psi_y$  are the coefficient associated to the deviation of the inflation from its target and to the output gap, respectively. When studying the impulse response functions, we follow a standard calibration in the literature also used by Alimi et al. (2017) and set  $\rho_i = 0.3$ ,  $\psi_\pi = 1.53$ , and  $\psi_y = 0.48$ .

### 7. Market Equilibrium

Our model presents these equilibrium equations:

$$S_t = (1 - \xi^p) \left( \frac{\Pi_t}{\Pi_t^*} \right)^\epsilon + \xi^p \left( \frac{\Pi_t}{\Pi_{t-1}^{\gamma_p}} \right)^\epsilon S_{t-1}$$

$$C_t^p = C_t + C_t^e + C_t^b$$

$$Y_t = S_t \left( I_t + C_t + \frac{R_t^k}{\Pi_t} Q_{t-1} K_{t-1} \mu \int_0^{\varpi_t} \omega f(\omega) d\omega \right)$$

$$GDP_t = I_t + C_t + G_t$$

### 8. Exogenous Shocks Process

In our article, we focus on three shocks: productivity shock, climate shock, and financial shocks. For each shock, we will consider stochastic processes.

For our first shock, the productivity shock denoted by  $a_t$  is modelled as an autoregressive process of the ratio of gross value-added (GVA) in million dinars and the number of employed persons, from 2000–2020 Q1. The autoregressive coefficient of total factor productivity  $\rho_a$  is equal to 0,9 with a standard deviation  $\varepsilon_a$  equal to 0,22. Volatility of the total productivity is very low because the new technologies are usually introduced slowly in respect to the quarterly periods.

$$a_t = \rho_a a_{t-1} + \varepsilon_t^a \quad \varepsilon_t^a \sim i.i.dN(0,1)$$

The second shock denoted  $\Omega_t$  like a climate choc, specially a chock to atmospheric temperature. The autoregressive coefficient of climate shock  $\rho_\Omega$  is equal to 0,8 with

a standard deviation  $\sigma_\Omega$  equal to 0,5. Volatility of the atmospheric temperature has a slowly increasing because Tunisia is a Mediterranean country.

$$\Omega_t = \rho_\Omega \Omega_{t-1} + \varepsilon_t^\Omega \quad \varepsilon_t^\Omega \sim i.i.dN(0,1)$$

Our third shock denoted  $Z_t$  like a financial choc, specially chock of bank asset growth rate. The autoregressive coefficient of climate shock  $\rho_Z$  is equal to 0,7 with a standard deviation  $\sigma_Z$  equal to 5%. The volatility of the atmospheric temperature has a slowly increasing because Tunisia is a Mediterranean country.

$$d Z_t = \rho_Z Z_{t-1} + \varepsilon_t^Z \quad \varepsilon_t^Z \sim i.i.dN(0,1)$$

### 9. Calibration of the E-DSGE Model for Tunisia

The E-DSGE model Of Tunisia which are exposed in detail by Rannenberg (2016) and we add the climate coefficient from Nordhaus (2008). The parameters of this model are calibrated in this section using Dynare 4.4.2 developed by Adjemian et al. (2012) and MATLAB R2016a. We calibrate the model’s parameters to broadly match the real data of the Tunisian economy at the quarterly frequency, from 2000 Q1 to 2020 Q1. All series are referred to as the Central bank of Tunisia (CBT) and from the national statistics institute of Tunisia (INS).

However, if parameters cannot be available from data their value is calibrated from similar model mechanisms. Hence, the choice of parameter values that we will use for our quantitative analysis consists of two sets. The first set contains those that are often used in the relevant literature and are considered conventional values. The second set, on the other hand, is those that are meant to capture the economic features of the Tunisian economy during the tested period.

We set the discount factor of households,  $\beta$ , at 0,983. for the retail sector, we fix,  $\xi_p$  equal to 0,75, which is amply classic in the DSGE literature. This signifies an average time of four quarters. The monitoring cost,  $\mu$ , is set to respect the bankruptcy costs estimated by Carlstrom and Fuerst (1997). Finally, we assume that retailers have to wholly pre-finance their capital and labor costs via working capital loans, thus  $\psi_k$  and  $\psi_l = 1$ .

The capital elasticity of output ( $\alpha$ ), the depreciation rate of capital,  $\delta$ , and the elasticity of work disutility,  $\varphi$ , are fixed at 0.35, and 0.025 and 0.25 respectively as cited by Belhadj and Abdeli (2015).

Parameter	Description	Value
$\varphi$	The elasticity of work disutility	0.25
$\beta$	Subjective discount factor	0.985
$\mu$	Monitoring cost	0.298
$\alpha$	The capital elasticity of output	0.35
$\xi_p$	Calvo parameters	0.75
$\delta$	Capital depreciation rate	0.025

(continued)



(continued)

Parameter	Description	Value
$\gamma_p$	Degree of price indexation	0.3
$\psi_l$	Share of wage bill that retailers finance by loan	1
$\psi_k$	Share of capital bill that retailers finance by loan	1
$R^L - R$	The spread of the loan rate to the nominal risk-free rate	1.40%
$(1 - \theta)$	The probability of bankruptcy	0.1%
	Banks leverage ratio	1/0.125
$\frac{N^b}{L}$	Bank capital ratio, percent	<b>5.694%</b>

Some of the parameters relating to the various frictions in the banking and entrepreneurial sector are calibrated such that the steady-state values of the key financial variables in the model match their averages in the real data. This methodology is also applied by Rannenberg (2016), the standard deviation of an idiosyncratic productivity shock,  $\sigma$ , is equal to 0.35, according to Rannenberg (2016).

The leverage ratio by which Tunisian banks were subject since 1999 is set at 8%. The spread  $R^L - R$  is calibrated such that the quarterly interest rate margin is equal to 1.40%.<sup>4</sup> This percentage is attached to that estimated by Levin et al. (2006) for 796 and over the period 1997Q1–2004Q4. The target  $\frac{N^b}{L}$  is calculated according to the Basel I agreement, which represents the average ratio between tangible common equity (TCE) and the total credit granted to the economy. Since the banking sector is supported by the Tunisian central bank, so, we set the probability of bank death  $1 - \theta$  to 0.01%.

It is concretely supposed that firms have a higher default probability than banks, that is why we set the steady-state probability of firms failure,  $1 - \gamma$  at 10%, Jouni and Rebei (2013). The share of assets delivered to the new banks,  $W^b$ , is set to 0.0001.<sup>5</sup> We calculate, on the same sample period, the bank capital ratio,  $\frac{N^b}{L}$ , with noted the average ratio between the bank net worth, available in the dataStream database, and the total debts. To correspond to the data this ratio is set to 5.694%.

For the policy rule, we following the same parameters used by Alimi et al. (2017). We set the inflation coefficient,  $\psi_\pi$ , equal to 1.53, the output gap coefficient,  $\psi_y$ , equal to 0.48, and the smoothing parameters,  $\rho_i$ , equal to 0.3.

<sup>4</sup> The net interest rate margin presented as the cost of external finance. It's equal to 3.9% at the end of 2018, which is equivalent to 1.40% per quarter  $(R^L - R)^{1/4}$  according to the report of the central bank in 2018.

<sup>5</sup> We set  $W^b$  very small to show that their value does not impact the macroeconomic dynamic.

## 5 The Interpretation of the Results

### Productivity Shock and Climate Change Shock

The transmission of productivity and climate change shock is examined by looking at the impulse responses of keys variables in the models. Every variable’s reaction is expressed as the percentage deviation from its steady-state, except for rate variables, which are in percentage points. The reduction of the output in the case of climate change is very important than in the case of productivity shock. This implies that the impact of an increase in temperature weighs on overall production and therefore on the economy than a shock in productivity. The reduction in output generally due to the decrease in consumption, investment, credit supply, and the firm’s net worth. This result is confirmed by Fabris (2020), who notes that climate change has a significant impact on economic production by reducing labor productivity and diverting resources from investment in current productive capital and innovation to climate change adaptation. However, on the other hand, the points out that there is growing evidence that investors and financial markets do not fully understand, at least not immediately, the impact of weather shocks on output and productivity (Fig. 2).

After 10 periods, the figure shows the climate change has a positive effect on investment in Tunisia. We can explain this positive relationship according to two ways. Firstly, the increase of inflation pushes the central bank to reduce its nominal interest rate with an effect positively on investments project. Secondly, the second way is considered from the increase of government spending on public investment.

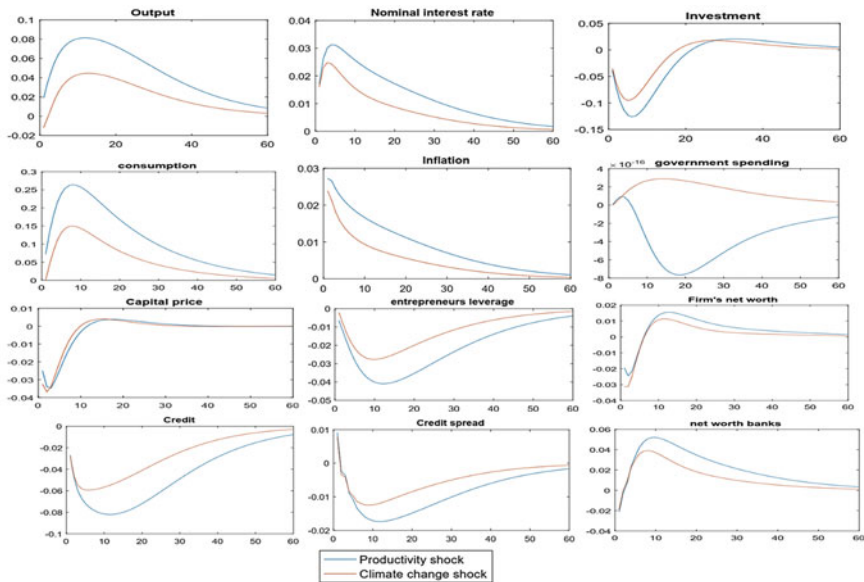


Fig. 2 Dynamics of key variables following productivity and climate change shock

We show that temperature rise has an adverse impact on both labor supply and labor productivity. Various empirical studies have shown that labor productivity is lower at higher temperatures. Decreasing temperatures also affect the reallocation of the labor force, so instead of dealing with the creation of new products, a part of the labor force is based on jobs aimed at reducing the negative effects of climate change.

From a financial point of view, the climate change shock has (in the first period) the same impact on financial variables, such as credit spread, credit supply, and the bank's net worth, as the productivity shock.

### Financial Shock and Climate Change Shock

Some central banks have started studying the implications of climate change for the financial sector, primarily due to their responsibility for financial regulation and supervision. Recent research suggests that, in addition to large physical and economic losses, the unmitigated climatic change could also affect the stability of the financial system. Our model is well suitable to analyze this hypothesis.

The figure below shows the impulse response of the financial and climate shocks. The climate shock is the same that those in the above graph. The financial shock is measured by an unexpected and persistent contraction in bank capital (Kb) as Rannenberg (2016). This shock is calibrated in a way such that it determines a fall of bank capital by 5% on impact (Fig. 3).

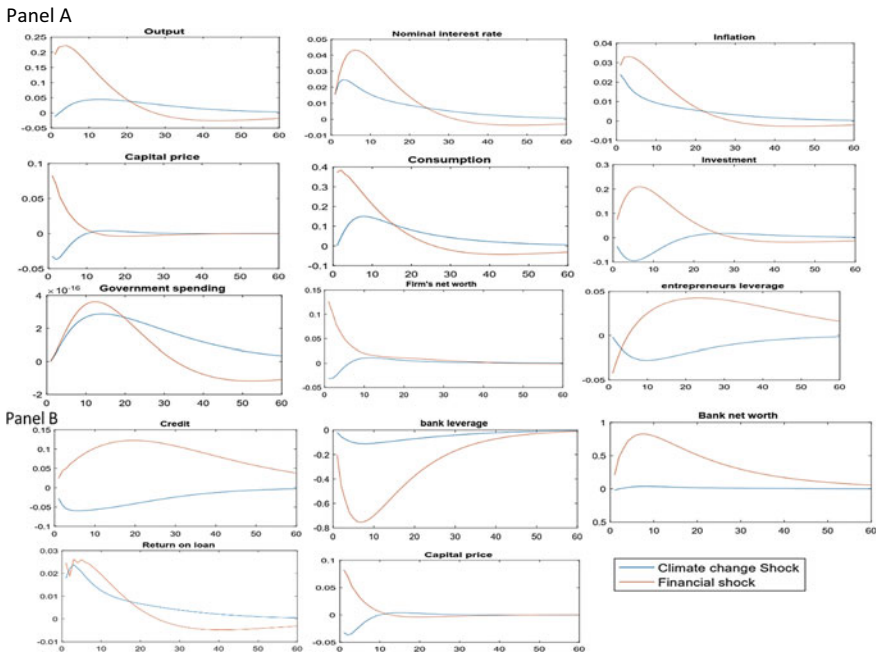


Fig. 3 Dynamics of key variables following financial and climate change shocks

Panel B shows that climate change is one of the many structural shocks that affect the financial system variables, even more than the financial shock. The rise in the climate affect negatively the net value of the firm witch and hence its ability to demand credit. In our model, we introduce the hypothesis of Kiyotaki and More (1997) and Icaviollo and Neiri (2010), in which the credit supply is contracted by the net value of the entrepreneur. If the latter decreases, the entrepreneur becomes less solvent vis-a-vis the bank, and therefore their credit will decline.

The increase in temperature could decrease also the capital price (especially the toxic assets) and reduce the borrowers' ability to repay banks. This leads to a rise in the payment default and losses on the credit portfolios" (Gelzinis and Steele 2019). Brainard (2019) suggests that if the assets' value does not accurately reflect climate-attached risks, a sudden correction could result in losses to financial sectors, which could, in turn, decrease credit supply in the economy. Further, this will affects the credit return and put a strain on the bank's value (Mansour and Zouari 2018).

We conclude that the bank could experience significant losses due to the climate change events which is more dig, serious, and hard than in the events of financial shock. That's way, some studies (mostly on European banks) have concluded that the banking system is beginning to take climate risks into account although they have found significant shortcomings in the identification, measurement, and management of banks' exposure which makes predictions regarding their vulnerability to these risks difficult (Sevillano and González 2019).

## 6 Conclusion

In several Central banks of developing countries, climate change is not considered a major constraint to their financial stability (Mansour and Zouari 2019). Despite this, some central banks of developed countries start to take into account climate change and they try to introduce their financial policies. These commitments can push their customers or their suppliers, such as central banks in developing countries, to follow this path as well. Through our study, we have shown that it is important that the central bank of Tunisia must focus, give more importance and take into account climatic shocks as a significant risk that can destabilize its financial situation to converge on its financial instability. From the results of our E-DSGE model, applied to the Tunisian case, we have shown that climatic shocks can negatively influence the real sphere (the different macroeconomic aggregates), despite the presence of a technological shock which explains the phenomenon of innovation that exists in the Tunisia productive device, on the one hand. On the other hand, we have that the scenario of a climatic shock accompanied by a financial shock can influence the Tunisian financial device, it can aggravate the financial instability which Tunisia has been experiencing since the "spring revolution". These results lead us fully understand the climatic effects and to take them in the first degree during the financial policies appropriated or initiated by the central bank for an improvement of the financial situation of Tunisia. The majority of the central bank of developing countries, including that of Tunisia, which continues

to be blinded by economic and financial tools to restore their financial situations, while there are obstacles and climatic risk that they can distort their forecasts and their financial reforms to converge on such and such a situation.

### **Policy Recommendation**

The figures prove that climate change has an amplifying effect on macroeconomic and financial variables. Therefore, if the government does not take into consideration the impact of this shock in its recovery strategies, it can cause significant losses in the economy.

The primary responsibility for strategic planning rests with governments, which have a variety of policy options at their disposal. For instance, they can introduce environmental regulations (e.g. standards on fuel efficiency); implement climate-friendly infrastructure investment programs (e.g. smart electrical grids); and design market-based policies to shift the preferences of households and companies towards low-carbon activities. The main proposed policy instrument has been carbon pricing, which could be implemented either through the introduction of a tax on the carbon content of goods and services, or the creation of a cap-and-trade system of emission allowances. Other market-based instruments, such as the introduction of subsidies for clean technologies and a phasing-out of fossil fuel subsidies, also follow a similar logic, Mazzucato and Semieniuk (2018) and Campiglio et al. (2018).

To avoid physical damages and the associated financial instability, a transition to a carbon-free economy is ultimately necessary. However, the transition itself might increase the risks of economic dislocation and ‘stranded’ assets (transition risks). For instance, meeting the 2 °C temperature threshold will probably require a large portion of existing reserves of oil, gas and coal to remain in the ground and thus be written off from the balance sheets of the companies that own them, Pfeiffer et al (2016). Other physical assets that could lose value include part of the electricity generation capacity, real estate, transportation infrastructure and carbon-intensive industrial technology. Such asset stranding could not only lead to economic losses and unemployment, but could also affect the market valuation of the companies that own these assets, thus negatively impacting their investors, and potentially triggering cascade effects throughout the interconnected financial system.

While some disruption at the sectoral level is inevitable, the transition as a whole could represent an opportunity for sustainable and inclusive economic prosperity. However, this is likely to be possible only in the presence of a comprehensive and harmonized set of policies aimed at supporting the low carbon transition and managing its complex dynamics, OECD (2017).

Whether a well-designed set of fiscal and environmental policies by the government will demonstrate adequate to meet Paris atmosphere goals is liable to discuss. Certain market frictions existing in financial systems, probably won’t be appropriately addressed by valuing instruments, subsequently giving deficient incentives to mobilize low-carbon investments at the scale and speed required. More significantly, government atmosphere strategies may not without any person prevent financial instability during the transition; in fact, they might exacerbate transition risks, if

implemented too abruptly and without the necessary precautions. Finally, the perception that carbon pricing could damage businesses and consumers often makes it a politically unpalatable choice for governments constrained by the electoral cycle, thus leading them not to act with the strength that would be required to ensure a smooth transition, Campiglio et al. (2018).

## References

- Battiston, S., Dafermos, Y., Monasterolo, I.: Climate risks and financial stability. *J. Financial Stab.* **54**, 100867 (2021)
- Brainard, L.: Why climate change matters for monetary policy and financial stability. In: Research conference “The Economics of Climate Change”. Federal Reserve Bank of San Francisco, San Francisco (2019)
- Campiglio, E., Dafermos, Y., Monnin, P., Ryan-Collins, J., Schotten, G., Tanaka, M.: Climate change challenges for central banks and financial regulators. *Nat. Clim. Change* **8**(6), 462–468 (2018). ISSN 1758-678X
- Chenet, H., Collins, J.R., Lerven, F.: Finance, climate-change and radical uncertainty: towards a precautionary approach to financial policy. *Ecol. Econ.* **183**, 106957 (2021)
- Galhau, F.V.: Climat: les banques centrales se mobilisent. Banque de France (2019)
- Gelzinis, G., Steele, G.: Climate Change Threatens the Stability of the Financial System (2019). <https://www.americanprogress.org/issues/economy/reports/2019/11/21/477190/climate-change-threatensstability-financial-system/>
- Giacomo, M.B., Silvia, R.: Climate risks and weather derivatives: a copula-based pricing model. *J. Financial Stab.* **54**, 100877 (2021)
- Hassler, J., Krusell, P.: Chapter 8 - Environmental macroeconomics: the case of climate change. In: *Handbook of Environmental Economics*, vol. 4, pp. 333–394 (2018)
- Junior, C.J.C., Cintado, A.C.C.: Rent-seeking in an emerging market: a DSGE approach. *Econ. Syst.* **45**, 100775 (2021)
- Mansour, N., Zouari, E.: Prudential regulation and banking risk in MENA countries. *Glob. J. Manag. Bus. Res.* **30**, 25–38 (2018)
- Mansour, N., Zouari, E.: Banking interaction and financial stability: MENA countries. *Glob. J. Manag. Bus. Res.* (2019)
- Mansour, N., Ben Salem, S., Hadj Salem, H.: Banking stability and prudential regulation interactions in DSGE model for Tunisia. In: *The Importance of New Technologies and Entrepreneurship in Business Development: In the Context of Economic Diversity in Developing Countries*. Springer, Cham (2021)
- Mazzucato, M., Semieniuk, G.: Financing renewable energy: who is financing what and why it matters. *Technol. Forecast. Soc. Change* **127**, 8–22 (2018)
- Nordhaus, W.D.: *A Question of Balance: Economic Modeling of Global Warming*. Yale University Press, New Haven (2008)
- OECD: *Investing in Climate, Investing in Growth* (2017)
- Pfeiffer, A., Millar, R., Hepburn, C., Beinhocker, E.: The ‘2 C capital stock’ for electricity generation: committed cumulative carbon emissions from the electricity generation sector and the transition to a green economy. *Appl. Energy* **179**, 1395–1408 (2016)
- Rannenberg, A.: Bank leverage cycles and the external finance premium. *J. Money Credit Bank.* **48**(8), 1569–1612 (2016)
- Rubio, M.: Monetary policy, credit markets, and banks: a DSGE perspective. *Econ. Lett.* **195**, 109481 (2020)
- Schoenmaker, D., Van Tilburg, R.: What role for financial supervisors in addressing environmental risks? *Comp. Econ. Stud.* **58**, 317–334 (2016)

- Sevillano, J.S.M., González, L.R.: *The Risk of Climate Change for Financial Markets and Institutions: Challenges, Measures Adopted and International Initiatives*. Banco de España, Madrid (2019)
- Yang, Z., Nordhaus, W.D.: Magnitude and direction of technological transfers for mitigating GHG emissions. *Energy Econ.* **28**, 730–741 (2006)

# Ensuring of Financial Stability of the Enterprise by Financial Management Tools



Novykova Innola , Chorny Roman , Chorna Nelia , Malik Mykola , and Rybak Andrii 

**Abstract** The article examines the current state tax system's impact on the ability to finance investment costs of the enterprise. In unstable market environment conditions of domestic enterprises' financial management system, the investment activity intensification problem for the purpose of their sustainable development and competitive position strengthening maintenance is actual. The insufficient level of modern enterprises' investment activity is due to limited investment resources. One of the important factors influencing this process is the current taxation system. For businesses, taxes are part of the profits that can be invested in their own development. In these conditions, the objective is to form an investment management system that would provide the company with the opportunity for sustainable development, contribute to the growth of production, increase profitability, increase competitiveness in the market. The scientific work proposes enterprise investment costs financing sources planning model depending on the limit value of the tax burden integrated coefficient. The developed model is an important component of financial management, which determines the level of financial constraints on the opportunities for enterprise development. The comparison of the actual and the limit tax burden integrated coefficient values made it possible to determine the periods in which the enterprise's tax burden did not limit the possibility of borrowing funds to finance investment activities.

**Keywords** Investments · Costs · Financial management · Tax burden · Investment management · Investment program · Performance

---

N. Innola (✉)

Separated Structural Subdivision, Institute of Innovation Education, Kyiv National University of Construction and Architecture, Kyiv, Ukraine

C. Roman · C. Nelia

West Ukrainian National University, Ternopil, Ukraine

e-mail: [neolla@ukr.net](mailto:neolla@ukr.net)

M. Mykola

Kyiv National Scientific Centre "Institute of Agrarian Economics", Kyiv, Ukraine

e-mail: [malik\\_coop@iae.kiev.ua](mailto:malik_coop@iae.kiev.ua)

R. Andrii

Kyiv National University Taras Shevchenko, Kyiv, Ukraine

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

B. Alareeni and A. Hamdan (eds.), *Sustainable Finance, Digitalization and the Role of Technology*, Lecture Notes in Networks and Systems 487,

[https://doi.org/10.1007/978-3-031-08084-5\\_56](https://doi.org/10.1007/978-3-031-08084-5_56)

783



## 1 Introduction

The main purpose of enterprise financial management is to maximize the enterprise's and its owners' welfare, by steadily increasing its market value. This goal is largely provided by one of the important special financial management functions - investment management, which is aimed at continuous development and improvement of enterprise operating activities and to maintain sufficient and stable investment financing.

Each business entity in its activities constantly strives to maximize profits, optimize capital structure and ensure financial stability, enterprise investment attractiveness for all stakeholders, creating an effective mechanism for managing enterprise, attracting additional funds. Absolutely all spheres of economic life are sensitive to the influence of the current taxation system. Enterprises investment activity is no exception. Every manager, trying to maximize his profits, tries to reduce his costs, including through taxes and other mandatory payments. That is why, in order to make informed investment decisions, financial managers need to take into account the impact of the tax burden on the ability to raise funds from outside, which will ultimately affect the enterprise's investment activity.

## 2 Literature Review

Scientific researches of many domestic and foreign scientists are devoted to the methodological bases of enterprise investment activity management. Among them are Y. Aniskin, A. Asaul, I. Blank, L. Borshch, I. Verkhohlyad, J. Hitman, and E. Kazakevich, J. Keynes, N. Klimova, P. Kukhta, T. Levchenko, K. McConnell and S. Brew, T. Mayorova, N. Menkyu, I. Mostovschikova, D. Northcott, V. Osetsky, L. Pochtovaya, A. Peresada, A. Popov, I. Roizman, O. Savluk, D. Sokolov, I. Solovyova, G. Kharlamova, D. Chervaneva. However, the impact issue of such external factor, as the current tax system, regarding the financing of enterprise investment costs remains insufficiently studied. That is why it is important to develop a financial management system that will take into account the tax impact as a limitation of opportunities for business development.

## 3 Methodology

To achieve the goal of scientific work and solve problems in the research process used general and special methods: abstraction, analysis and synthesis, induction and deduction to justify the importance of studying taxes impact on financing investment costs of the enterprise; comparative (for the tax burden diagnosis, its integral and marginal value); graphical (to illustrate the results of comparing the actual and critical

values of the integrated tax burden coefficient). The method of constructing schemes and models was used to visualize the algorithm for planning sources of financing investment costs depending on the level of tax burden.

## 4 Results

Discussions about the impact of taxes on investment and business development last quite a long time. Thus, D. Ricardo argued that taxes hinder the process of capital creation and accumulation, each new tax becomes a new burden for production and leads to increase in the natural price of goods, destroying the incentive for development (Ricardo 1955). According to the study results of taxes impact on incentives to invest, N. Menkew identified two main factors - changes in corporate income taxes and investment tax credit. In his opinion, corporate income tax reduces the incentive to invest, because determining the amount of profit for taxation is based on the amount of depreciation, determined on the basis of prices paid for capital goods at the time of their acquisition. However, inflation increases the replacement cost, which usually becomes higher than the initial one, and therefore the income tax base grows. As a result, financial opportunities for investment are reduced. This is the most relevant for countries with intense inflation. Thus, in order for income tax not to undermine investment incentives, it is necessary to adjust depreciation amounts to take into account the increase in the cost of acquisition and restoration of fixed assets. But the investment tax credit reduces the cost per unit of capital and stimulates its accumulation (Menkyu 1994). Modern foreign experience shows that in order to minimize taxes, it is necessary to spend most of the income on investments, not dividends, because in world practice, income from increase in the value of shares is taxed at a lower rate than income in the form of dividends. In the system of tax management, which according to a very common point of view, there is a component of enterprise financial management (Glushchenko 2017), to assess the impact of the tax system on the enterprise activities it is advisable to use the following indicators (Demchenko and Odnolko 2018; Malyshkin 2015; Shcherbatenko and Ryaboshapka 2015):

### 1. Partial tax burden coefficients:

- from income tax ( $CTB_{IT}$ )

$$CTB_{IT} = \frac{IT_i}{P_i} \quad (1)$$

where  $IT_i$  - corporate income tax accrued in the  $i$ -th period;

$P_i$  - the company's profit in the  $i$ -th period;

- on other taxes and fees ( $CTB_{OTFi}$ )

$$CTB_{OTF_i} = \frac{TP_{O_i}}{E_{O_i}} \quad (2)$$

where  $TP_{O_i}$ —other taxes and mandatory payments accrued by the enterprise in the  $i$ -th period;

$E_{O_i}$ —operating expenses in the  $i$ -th period.

2. Tax Payments Ratio (TPR)—sets the share of actual outgoing cash flow from taxes and mandatory payments of the  $i$ -th period in the total amount of incoming cash flow from operating activities for the same period:

$$TPR_i = \frac{(TP_i + TC_i)}{ICF_i} \quad (3)$$

$TP_i$  - the total amount of taxes paid and mandatory payments in the  $i$ -th period;

$TC_i$  - transaction costs of the  $i$ -th period;

$ICF_i$  - incoming cash flow of the  $i$ -th period from operating activities.

3. Tax capacity of products (TCP) - the ratio of the total amount of accrued tax liabilities and income from operating activities:

$$TCP_i = \frac{TATL_i}{IOA_i} \quad (4)$$

where  $IOA_i$  - income from operating activities of the  $i$ -th period.

To determine the possibilities of financing enterprise investment activity depending on the tax burden level, an appropriate algorithm has been developed (Fig. 1).

The algorithm uses the following symbols:

$FR_i$  - financial result of the  $i$ -th period;

$GFR_i$  - gross financial result of the  $i$ -th period;

$R_i$  - revenue from the sale of goods, works, services of the  $i$ -th period;

$TP_i$  - the total amount of taxes and mandatory payments of the  $i$ -th period;

$i$  - serial number of the planning period.

$n$  - is the total number of planning periods;

$r_{\text{expect}}$  - the expected interest rate on bank commercial loans;

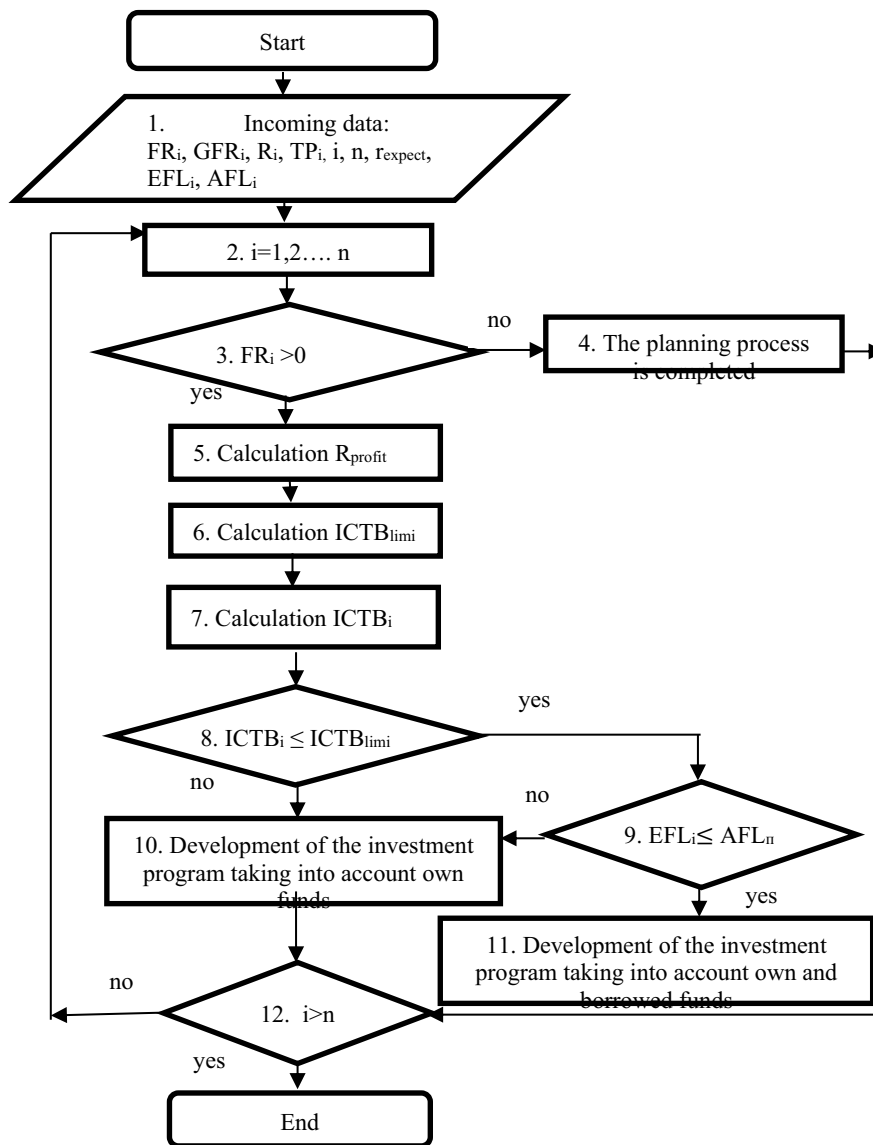
$EFL_i$  - the expected value of the lever of financial leverage of the  $i$ -th period;

$AFL_i$  - acceptable value of the lever of financial leverage of the  $i$ -th period;

$ICTB_{\text{limi}}$  - limit value of the integrated tax burden coefficient of the  $i$ -th period;

$ICTB_i$  - integrated tax burden coefficient of the  $i$ -th period.

According to the algorithm:



**Fig. 1** Algorithm for planning sources of financing investment costs depending on the level of tax burden (Author's development)

Block 1. To determine the integrated tax burden coefficient and its threshold value, an array of input information is formed.

Block 2. Starts a cycle that determines the number of planning periods.

Block 3. If the financial result is less than 0, then there is a transition to block 4, otherwise to block 5.

Block 4. If the financial result is negative, the planning process is completed.

Block 5. The maximum value of sales profitability of the  $i$ -th period is calculated:

Block 6. The marginal integrated enterprise tax burden coefficient of the  $i$ -th period is determined.

Block 7. The integrated enterprise tax burden coefficient of the  $i$ -th period is determined.

Block 8. If the integrated coefficient of the tax burden does not exceed the limit value, then there is a transition to block 9, otherwise—to block 10.

Block 9. The level of financial risks associated with lending is checked. If the expected value of financial lever is more than acceptable for the company, then there is a transition to block 10, otherwise—to block 11.

Block 10. The investment program is being developed taking into account own sources of financing.

Block 11. The investment program is being developed taking into account own and borrowed funds.

Block 12. The condition of the cycle completion is checked. If the calculations are made for all periods, the planning process is completed, if not—there is a transition to block 2.

If in the  $i$ -th period profitable activity is expected and the tax burden coefficient is greater than its marginal value, the possibility of financing investment costs is limited by own funds. If the ratio is less than the threshold value, it is possible to borrow funds, which expands the volume of investment activity. However, it is necessary to take into account the level of financial risks associated with lending. If the expected value of the leverage is more than acceptable for the company, then borrowing funds is impractical. It allowed us to estimate the relationship between the total amount of taxes and fees that are accrued and the set of indicators that can serve as a basis for comparison. The results of the calculation showed that the highest relationship is inherent in the gross financial result, which is recommended to be used as a basis for comparison in terms of the enterprise profitable activities. If the activity becomes unprofitable, the basis of comparison is net income. The reliability of the analysis results was confirmed by the corresponding values of Student's T-test and Fisher's F-test. Therefore, the integrated tax burden coefficient should be determined by the following parametric models:

– at  $GFR > 0$ :

$$ICTB = \frac{ATL}{GFR} \quad (5)$$

– at  $GFR > 0$ :

$$ICTB = \frac{NI}{GFR} \quad (6)$$

where GFR - gross financial result;

ATL - the total amount of accrued tax liabilities;

NI - net income from product sales.

The possibility of financing investment costs is influenced by the limit value of the integrated tax burden coefficient, which is the limit on the possible use of own and borrowed funds to finance investment costs. The procedure for calculating the threshold value of the integrated tax burden coefficient is based on the method of financial leverage, according to which the price of borrowed funds is acceptable for the company if the economic return on assets exceeds or equals the current average rate on loans (Gnatenko 2019). Therefore, the limit value of the integrated tax burden coefficient is determined by the formula:

$$ICTB_{limi} = \frac{TP_i}{(R_{profit} \times R_i)} \times 100 \quad (7)$$

where  $R_{profit}$ —the marginal value of profitability of sales, determined by the formula:

$$R_{profit} = 0.07 + 0.18 \times r + 0.04 \times r \quad (8)$$

where  $r$  - is the current average interest rate on loans.

Estimation of financing investment expenses possibilities depending on the tax burden level is carried out according to LLC Ukrtranstorg specializing in automobile transportations of construction and industrial freights across Ukraine and the countries of the European Union (YouControl 2021).

Analysis of the tax burden partial indicators of Ukrtranstorg LLC in 2018–2020 (Table 1) showed their reduction. Thus, the tax burden coefficient on income tax during 2018–2019 was 18% as provided by tax legislation. In 2020, the company had a negative financial result, which explains zero value of the tax burden on income tax in this period.

The tax burden on other taxes and mandatory payments has grown steadily: from 13.7% in 2018 to 19.1% in 2020. This is largely due to the increase in the minimum

**Table 1** Indicators of LLC “Ukrtranstorg” tax burden diagnostics for 2018–2020

Indicator	Years		
	2018	2019	2020
Partial tax burden coefficients on:			
– Income tax	0,180	0,180	0,000
– Other taxes and fees	0,137	0,175	0,191
Coefficient of tax payments	0,040	0,049	0,064
Tax intensity of products (goods, works, services)	0,115	0,096	0,178

wage, which led to the increase in accruals for it. Comparison of the tax burden partial indicators is not possible due to the different comparison bases used in their calculation.

The dynamics of the company's tax payment ratio, which increased every year, was also negative. This is due to the decrease in the amount of cash inflows from operating activities. The dynamics of tax intensity of services in the studied period had an unstable trend and in general in 2020 increased compared to 2018.

According to the results of calculations, the dynamics of the integrated coefficient of the tax burden of LLC "Ukrtranstorg" for 2018–2020 confirms the fact of tax pressure rapid growth on the company (Table 2).

The results of the integrated tax burden coefficient limit values determining are given in Table 3.

The results of comparing the actual and critical values of the tax burden integrated coefficient of LLC "Ukrtranstorg" for 2018–2020 are evidenced by the data shown in Fig. 1.

Data analysis of Fig. 1 testified that the company had the opportunity to finance investment costs only in 2018 and 2019, the pressure of the tax burden allowed the company to use borrowed funds to finance investment costs. And already in 2020 the source of investment activity financing was exclusively own means that considerably limits investment possibilities of the enterprise.

**Table 2** Calculation of the integrated tax burden coefficient actual values

Indicator	Years		
	2018	2019	2020
1. Taxes and fees, including:	294,60	365,84	356,40
– Income tax, thsd. Hrn	46,90	33,20	0,00
– Single social contribution, thsd. hrn	247,70	332,64	356,40
2. Gross financial result, thsd. hrn	2546,60	3238,00	1576,60
3. Integral tax burden ratio	0,116	0,113	0,226

**Table 3** Calculation of the tax burden integrated coefficient limit values

Indicator	Years		
	2018	2019	2020
Taxes and fees, thsd. hrn	294,60	365,84	356,40
Economic return on assets <sup>a</sup> , %	0,161	0,154	0,103
Marginal profitability of sales, %	0,098	0,096	0,088
Revenue from services sales, thsd. hrn	25,520,00	32,894,00	24,950,30
Marginal integrated tax burden coefficient	0,118	0,115	0,162

<sup>a</sup> According to National Bank of Ukraine (2021)

## 5 Discussion

The marginal value of the tax burden integrated coefficient is the boundary between the financing of investment activities solely from their own sources and financing, which involves borrowing. Additional opportunities for financing investment costs create the preconditions for the investment activity growth of the enterprise, and hence its investment attractiveness. The growth of investment activity due to the increase in capital investment leads to a significant increase in return on equity and economic return on assets of the enterprise, and therefore, foreign investment becomes more attractive.

Approbation confirmed the reliability of the study results, the practical use of which will allow companies to establish a system of financial management and increase the soundness of investment decisions and, consequently, create conditions for increasing financial profitability, which will increase investment attractiveness.

## 6 Conclusions

The article proposes an algorithm for planning sources financing investment costs of the enterprise depending on the level of tax pressure and the procedure of the limit value determining of the enterprise integrated tax burden coefficient, which establishes the boundary between own and borrowed sources of financing investment costs. The threshold value was determined using the method of financial leverage, which allowed to set its level in accordance with the current average interest rate on loans. Comparison of the integrated tax burden coefficient with its marginal value allows to determine the possibilities of financing the enterprise investment costs: if the actual value is less than the marginal value, the enterprise has the prerequisites to borrow funds to finance investment costs; otherwise, funding should be limited to own funds.

Practical implications. The results of the study will allow companies to establish a financial management system and increase the level of soundness of investment decisions and, as a consequence, create the preconditions for increasing financial profitability, which will increase the level of investment attractiveness of the enterprise.

## References

Demchenko, M.Yu., Odnolko, Ya.V.: Comparative characteristics of the tax burden of Ukraine and the world. Science Online: Int. Electron. Sci. J. **1**(5), 221 (2018). <https://nauka-online.com/ua/publications/ekonomika/2018/5/porivnyalna-harakteristika-pokaz-nikiv-podatkovogo-navant-azhennya-ukrayini-ta-krayin-svitu>. Accessed 20 Mar 2021



- Glushchenko, O.O.: Conceptual foundations of tax management of the enterprise: the state of the components. *Econ. Reg.* **1**(5), 80–86 (2017). [http://nbuv.gov.ua/UJRN/econrig\\_2017\\_5\\_17](http://nbuv.gov.ua/UJRN/econrig_2017_5_17). Accessed 01 Apr 2021
- Gnatenko, E.: Regarding the method of equity and debt capital analysis of the enterprise. *Econ. Soc.* **1**(20), 115 (2019). <https://economyandsociety.in.ua/index.php/journal/article/view/18>. Accessed 17 Mar 2021
- Malyshkin, O.: Tax burden coefficient at the micro level: calculation and application. *Account. Audit.* **1**(1), 18–25 (2015). (in Ukrainian)
- Menkyu, N.: *Macroeconomics*, 736 p. Moscow State University, Moscow (1994). (in Russian)
- National Bank of Ukraine (2021). <https://bank.gov.ua/en/statistic/sector-financial/data-sector-financial>. Accessed 30 Mar 2021
- Ricardo, D.: *The Beginnings of Political Economy and Taxation*, 304 p. Gospolitizdat, Moscow (1955). Transl. from Eng. (in Russian)
- Shcherbatenko, I.V., Ryaboshapka, V.A.: The impact of taxes on investment activities. *Invest.: Pract. Exp.* **2**(1), 95–98 (2015). [http://irbis-nbuv.gov.ua/cgi-bin/irbis\\_nbuv/cgiirbis\\_64.exe?C21COM=2&I21DBN=UJRN&P21DBN=UJRN&IMAGEFILEDOWNLOAD=1&Image\\_file\\_name=PDF/ipd\\_2015\\_1\\_22.pdf](http://irbis-nbuv.gov.ua/cgi-bin/irbis_nbuv/cgiirbis_64.exe?C21COM=2&I21DBN=UJRN&P21DBN=UJRN&IMAGEFILEDOWNLOAD=1&Image_file_name=PDF/ipd_2015_1_22.pdf). Accessed 15 Mar 2021
- YouControl - counterparty verification service (2017). [https://youcontrol.com.ua/en/catalog/company\\_details/33548682/](https://youcontrol.com.ua/en/catalog/company_details/33548682/). Accessed 20 Mar 2021

# Financial Investment Management of Trade Enterprises: Analytical Aspect



Blakyta Hanna , Barabash Nataliia , Pashkuda Tetiana ,  
Susidenko Valentyn , Korol Svitlana , and Hordiienko Natalia 

**Abstract** The purpose of the study is to develop methodological approaches to the analysis of financial investments of trade enterprises. The information base of the article is presented by scientific works of domestic and foreign scientists. The research is based on scientific methods, among which it is expedient to distinguish: analysis and synthesis, comparison, idealization and abstraction, as well as systematization and generalization—during the formulation of conclusions as a result of the study. It has been found that the largest share in the structure of the total number of economic entities of Ukraine is occupied by trade enterprises; it is expedient to direct renewal reforms to them in order to achieve the maximum economic effect. The analysis of statistical information in general shows transformational shifts; however, in the conditions of a pandemic, the positive dynamics have an insignificant (insufficient) level or are absent at all. This confirms the need to manage the financial investments of trade enterprises as a mechanism for obtaining a return on investment in securities—stocks, bonds, contributions, etc. In the course of the research it

---

B. Hanna (✉) · B. Nataliia · P. Tetiana  
Department of Economics and Business Finance, Kyiv National University of Trade and Economics, 19 Kyoto Str., Kyiv 02156, Ukraine  
e-mail: [g.blakyta@knute.edu.ua](mailto:g.blakyta@knute.edu.ua)

B. Nataliia  
e-mail: [n.barabash@knute.edu.ua](mailto:n.barabash@knute.edu.ua)

P. Tetiana  
e-mail: [t.pashkuda@knute.edu.ua](mailto:t.pashkuda@knute.edu.ua)

S. Valentyn  
Department of Commodity Science and Commercial Activity, Uzhhorod Institute of Trade and Economics of Kyiv, National University of Trade and Economics, Uzhhorod, Ukraine  
e-mail: [mbizon1@ukr.net](mailto:mbizon1@ukr.net)

K. Svitlana  
Department of Accounting and Taxation, Kyiv National University of Trade and Economics, Kyiv, Ukraine  
e-mail: [sykorol@ukr.net](mailto:sykorol@ukr.net)

H. Natalia  
Kyiv National University Borys Grinchenko, Kyiv, Ukraine  
e-mail: [n.hordiienko@kubg.edu.ua](mailto:n.hordiienko@kubg.edu.ua)

was proposed to define the concept of risk as the level of financial losses. Methods of risk assessment have been considered: a technique based on the analysis of the sensitivity of the market conditions; methodology based on the analysis of the probable distribution of profitability. The stages of investment portfolio formation are determined, among which are the following: formation of goals taking into account priority; selection of a financial institution according to the following criteria: the reputation of the enterprise, availability of information, types of portfolios offered by the enterprise, the profitability of portfolios, types of financial instruments; choosing a bank that will maintain an investment account.

**Keywords** Income · Bankruptcy · Enterprise · Financial investments · Investment attractiveness · Investment portfolio

## 1 Introduction

In modern economic conditions and the intensification of competition, the ability of the entity not only to attract investment, i.e. its investment attractiveness, but also to manage them, becomes important. It largely depends on the stability of the external and internal environment, the efficiency of economic activity, the priority of tasks, etc.

The relevance of the study of financial investment management of trade enterprises is due to the fact that the growth of economic dynamics, the effects of economic crises, the global pandemic COVID-19 determine the need for the stable economic development of economic entities.

## 2 Literature Review

The following domestic and foreign scientists were engaged in the problems on this issue and its research at different levels: Bandurin F., Berestov K., Blank I., Bocharov V., Gaidutsky F., Gutkevych S., Ivanov Yu., Kopyl O., Korenyuk P., Mazaraki A., Mnykh E., Nosova O., Pidlisetsky G., Epstein D., and many others. Despite thorough research of theoretical and methodological principles, the question of forming a methodology for managing financial investments of trade enterprises remains logically incomplete.

## 3 Methodology

The purpose of the article is to study the main tools for managing financial investments of trade enterprises, their importance and peculiarities of application in modern

conditions. In accordance with this purpose, the article is designed to: reveal the nature and features of financial investments; investigate the step-by-step algorithm of their analytical research.

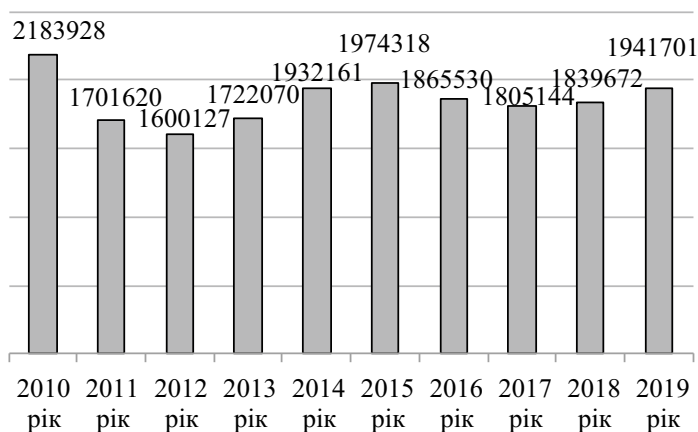
The research is based on scientific methods, among which it is expedient to distinguish: analysis and synthesis, comparison, idealization and abstraction, as well as systematization and generalization—during the formulation of conclusions as a result of the study.

## 4 Results

In the conditions of deepening of transformational processes of development and formation of market relations in the system of world economy all branches of the economy of Ukraine undergo significant transformations and reorientation. Under the influence of internal and external factors, the market environment changes. Despite the great resource potential, domestic trade enterprises fail to gain a leading position compared to the enterprises of economically developed countries. Therefore, it is advisable to study the current state of Ukraine's trade in general, analyze the dynamics of key indicators and find possible ways to improve the situation.

The dynamics of the number of business entities in Ukraine during 2010–2019 are presented in Fig. 1.

The presented information indicates a decrease in the number of business entities in Ukraine during the study period. The largest number of them was recorded in 2010 and amounted to 2,183,928 subjects. Since 2014, there has been a gradual decrease in the number of business entities, and only since 2018 the situation has improved.



**Fig. 1** Dynamics of change in the number of business entities of Ukraine for 2010–2019

Such dynamics are due to the crisis of the economy and the increase in the number of bankrupt enterprises. Based on statistics, it has been found that bankruptcy is one of the biggest problems of the domestic economy.

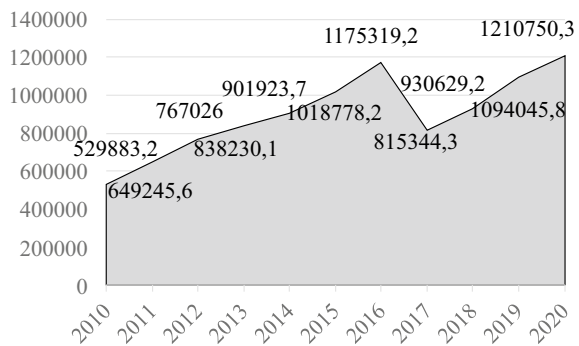
We have found that the structural sector of the domestic economy is trading, in the total number of economic entities of Ukraine, the largest share of them is this sector. According to the State Statistics Service of Ukraine (State Statistics Service of Ukraine), in 2019 the number of business entities was 1,941,701 units. The share of retail and wholesale enterprises is 46.9% (834,159 units). Despite the constant reduction in the number of economic entities in Ukraine, the number of enterprises engaged in wholesale and retail trade is increasing every year.

In view of this, we propose to pay more attention to the activities of trade enterprises. Consider statistical data on the dynamics of retail trade, which includes the retail turnover of enterprises (legal entities) engaged in retail trade, and estimated data on sales of goods in the markets and individual entrepreneurs (Fig. 2).

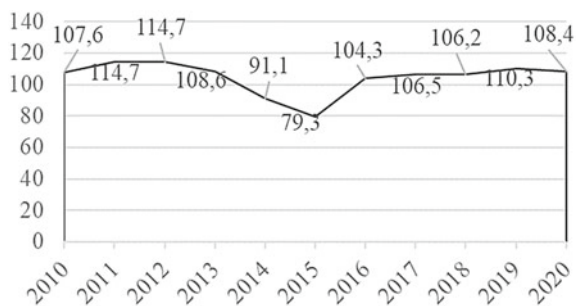
The dynamics of retail trade turnover are characterized by stability—the indicator is growing every year (except for a sharp decline in 2017 to UAH 815,344.3 million, from UAH 1,175,319.2 million in 2016). However, the dynamics of the index of physical turnover of retail trade indicate negative trends (Fig. 3).

The analysis of the structure of retail trade turnover of retail trade enterprises in 2010–2020 confirms the predominance of the share of non-food products over food

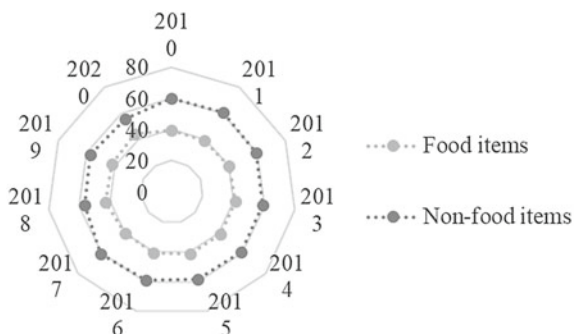
**Fig. 2** Dynamics of retail trade turnover of Ukraine for 2010–2020, UAH million



**Fig. 3** Dynamics of the index of physical volume of retail trade turnover of Ukraine to the corresponding period of the previous year for 2010–2020, as a percentage



**Fig. 4** The share of commodity groups of retail trade turnover of retail trade enterprises in 2010–2020, as a percentage



products throughout the analyzed period, distinguishing these product groups from others (Fig. 4).

Therefore, given that the largest share in the structure of the total number of economic entities of Ukraine is occupied by trade enterprises, it is advisable to direct the renewal reforms to them in order to achieve the maximum economic effect.

The analysis of statistical information in general shows transformational shifts, however, in the conditions of a pandemic the positive dynamics have an insignificant (insufficient) level or are absent at all. This confirms the need to manage the financial investments of trade enterprises as a mechanism for obtaining a return on investment in securities—stocks, bonds, contributions, etc. Forming a portfolio of financial investments, the company needs to analyze the relationship of such key characteristics as profitability and risk level.

Risk and return in financial analysis are considered as interrelated categories. They may be associated with a single asset (financial instrument) or with a particular combination of financial instruments (assets).

Risk is understood as the probability of losses or non-receiving of income that was expected to be received in accordance with the plan (project). Detailing the concept of risk, it can be defined as the level of financial loss, expressed in:

- the possibility of not achieving the goal;
- uncertainty of the predicted result;
- subjectivity of the assessment of the predicted result.

Assets that are associated with a relatively large amount of probable loss are considered the riskiest. In another interpretation, the risk is the degree of income variability that can be obtained for a given type of asset. The higher the rate of variation of income, the riskier the assets.

Income provided by a particular type of asset consists of income from changes in the value of the asset and income from dividends received.

Return on asset (rate of return) is the income calculated as a percentage of the initial value of the asset:

$$i = \frac{[d + (p - p_N)]}{P_N} \cdot 100,$$

where  $i$ —return on assets;

$d$ —the amount of income paid for the year in the form of dividends;

$P$ —the market value of the asset;

$P_N$ —the nominal price of the asset (the price at which the asset was purchased).

To make investment decisions, we assume that profitability and risk change proportionally. The higher the return on an asset, the higher its riskiness.

In financial analysis, there are two methods of risk assessment:

- a technique based on the analysis of the sensitivity of the market conditions;
- a methodology based on the analysis of the probable distribution of profitability.

The first method is to calculate the magnitude of variation in return on assets, based on pessimistic, most plausible, and optimistic estimates:

$$R = i_o - i_n,$$

where  $R$ —asset risk;

$i_o, i_n$ —return on assets by optimistic and pessimistic estimates.

The most probable return ( $i_i$ ) is calculated by the arithmetic mean:

$$i_i = \frac{i_o + i_n}{2},$$

or is determined by an expert method along with  $i_o$  and  $i_n$ .

The second method of assessing the risk of an individual asset is to construct the probable distribution of values of profitability, calculation of their standard deviation from the most probable return and the coefficient of variation. The higher the value of the coefficient of variation, the riskier this type of asset.

The calculation of the risk of an individual asset according to the second method is carried out in the following sequence:

1. Values of profitability ( $i_j$ ) and probability of their realization ( $P_j$ ) are developed. In this case:

$$\sum_{j=1}^n P_j = 100\%.$$

2. The most probable return is calculated ( $i_b$ ):

$$i_b = \sum_{j=1}^n i_j \cdot P_j.$$

3. Standard deviation is calculated ( $B_c$ ):

$$B_c = \sqrt{\sum_{j=1}^n (i_j - i_b)^2 \cdot P_j}.$$

4. The coefficient of variation is calculated ( $V$ ):

$$V = \frac{B_c}{i_b}.$$

The risk associated with an individual asset increases over time. This is because it becomes more difficult to predict the return on assets: the magnitude of the variation in expert returns ( $R$ ) and the coefficient of variation ( $V$ ) increase.

Therefore, the longer the type of asset, the higher the variation in its return and the riskier it is.

The risk associated with a particular asset should be considered in terms of its impact on the risk of the investment portfolio as a whole. As all financial investments differ in the level of return and risk, the portfolio as a whole is characterized by the average value of these indicators. In the case of optimal selection of financial investments, it is possible to achieve a reduction in the risk of the financial investment portfolio.

The following optimization mathematical models are used to effectively solve this problem:

- models that minimize risk at a given level of expected return;
- models that maximize profits at a given level of risk.

Factors that are required to build a portfolio of financial investments include:

- developed securities market;
- a fairly long period of functioning of the securities market;
- availability of statistical information;
- operational analysis of statistical information.

The formation of the investment portfolio is carried out in the following sequence (Mnykh and Barabash 2014):

1. Formation of goals taking into account the priority (ranking from priority: regular receiving of dividends, increasing the value of assets, etc.); setting risk levels, minimum profit, permissible deviations from the specified values.
2. Choosing the financial institution according to the following criteria: the reputation of the enterprise, availability of information, types of portfolios offered by the enterprise, the profitability of portfolios, types of financial instruments.
3. Choosing a bank that will maintain an investment account.

The type of investment portfolio is formed in accordance with the target priorities. There are three types of portfolios: growth portfolio, income portfolio, and conservative portfolio.



The degree of risk of the financial investment portfolio is inversely proportional to the number of types of securities included in the portfolio by chance. The total risk of the portfolio consists of two parts: diversified (non-systematic) risk and non-diversified (systematic) risk.

There is a “portfolio theory”, in which you can optimize the risk of the securities portfolio and estimate the expected return using statistical methods.

This theory includes four elements: asset valuation, investment decisions, portfolio optimization, performance evaluation.

The task of the investor is to reduce diversified (unsystematic) risk by selecting securities which income has different amplitudes.

Search for securities with different amplitude of fluctuations in income is carried out using the method of covariance, which allows you to compare the directions of changes in fluctuations in income from different types of securities. The correlation coefficient ( $K_{kop}$ ) determines the limits within which income changes in one direction: if when comparing the characteristics of some assets with others  $K_{kop} = 1$ , it means that the direction of income from these assets is the same; if  $K_{kop} = -1$ , then the directions of income change are opposite. The correlation coefficient can vary from  $-1$  to  $+1$ . If you purchase assets with a portfolio correlation coefficient of  $1$ , the risk will not decrease. If  $K_{kop} < 1$ , then the risk will be lower the lower the correlation coefficient that characterizes the tightness of the relationship between return on assets.

Using the covariance method to calculate the correlation coefficients of different portfolio assets, you can select assets that minimize risk (Mnykh and Barabash 2014).

The assessment of non-diversified (systematic) risk is based on the use of the dependence of the return of individual securities on the return of the securities market as a whole. The level of systematic risk of individual financial assets is determined by the sensitivity of income from securities to the general situation in the financial market. A sensitivity index is used to assess systemic risk ( $I_i$ ).

$$I_i = \frac{i_n}{i_r},$$

where  $i_n$ —security profitability index;

$i_r$ —market profitability index.

If  $I_i > 1$ , then securities of this type are more sensitive than the market, i.e. riskier than the market as a whole. If  $I_i = 1$ , then the securities have market sensitivity, and if  $I_i < 1$ , then securities are less sensitive than the market, i.e. less risky.

Portfolio theory uses a capital asset pricing model (“CAPM”), to link systematic risk and return, according to which non-diversified risk is calculated using a ratio  $\beta$ . Each type of security has its own ratio  $\beta$ , which is an index of the profitability of this security in relation to the profitability of the securities market as a whole:

$$\beta = \frac{\sigma_{R_i, R_m}^2}{\sigma_{R_m}^2},$$

$$\sigma_{R_i, R}^2 = \frac{1}{n} \sum_{j=1}^n (R_{ij} - \bar{R}_i)(R_{mj} - \bar{R}_m),$$

$$\sigma_{R_m}^2 = \frac{1}{n} \sum_{j=1}^n (R_{mj} - \bar{R}_m)^2,$$

$$\beta = \frac{\sum_{j=1}^n (R_{ij} - \bar{R}_i)(R_{mj} - \bar{R}_m)}{\sum_{j=1}^n (R_{mj} - \bar{R}_m)^2},$$

where  $R_{ij}$ —return on securities of  $i$ —enterprise for  $j$ —period ( $i = 1, 2, \dots, k; j = 1, 2, \dots, n$ ).

$\bar{R}_i$  - the average return on securities of  $i$ —enterprise for all periods:

$$\bar{R}_i = \frac{1}{n} \sum_{j=1}^n R_{ij};$$

$R_{mj}$  - return in the securities market for  $j$ —period:

$$R_{mj} = \frac{1}{K} \sum_{i=1}^k R_{ij};$$

$\bar{R}_m$  - average return on the securities market for all periods:

$$\bar{R}_m = \frac{1}{n} \sum_{j=1}^n R_{mj}.$$

In general, the market coefficient  $\beta = 1$ . Most companies have coefficients  $\beta$ , which range from 0,5 to 2,0. If the ratio  $\beta$  of securities is equal to 1, it means that the securities have a medium degree of risk relative to what has developed in the stock market. If  $\beta < 1$ , then the company’s securities are less risky than the market as a whole. An increase in the coefficient  $\beta$  in the dynamics indicates that the risk of investing in securities of the enterprise increases.

## 5 Conclusions

As a result of the analysis of the dynamics of indicators that characterize the general trends of trade enterprises in Ukraine, negative trends were revealed due to the aggravation of economic crises, hostilities in the east, the annexation of the Autonomous Republic of Crimea, destabilization of social and political life, pandemic COVID-19. It has been determined that the main reason for this situation is the bankruptcy of domestic trade enterprises due to the low level of competitiveness and the inability to adapt to changing external and internal conditions and attract investment.

In the course of the research, it was proposed to define the concept of risk as the level of financial losses. Methods of risk assessment have been considered: a technique based on the analysis of the sensitivity of the market conditions; methodology based on the analysis of the probable distribution of profitability. The stages of investment portfolio formation are determined, among which are the following: formation of goals taking into account priority; selection of a financial institution according to the following criteria: the reputation of the enterprise, availability of information, types of portfolios offered by the enterprise, the profitability of portfolios, types of financial instruments; choosing a bank that will maintain an investment account.

## References

Mnykh, E.V., Barabash, N.S.: *Financial Analysis: A Textbook*, 536 p. KNUTE (2014)  
State Statistics Service of Ukraine (2021). <http://www.ukrstat.gov.ua/>

# Total Management of Customer Service Value - A Tool for Sustainable Changes in Service Behavior: Ukrainian Experience in Suburban Passenger Traffic



Olexander Bakalinsky , Victoria Ilchenko , Valentyna Khmylievska , and Svitlana Petrovska 

**Abstract** Services, where clients are served simultaneously in one space, require new approaches for customer service value management. Total customer service value management is a new management concept in the service industry. On the example of suburban passenger transportation, the authors try to prove that it can be an effective tool for customer and transport behavior management. Encouraging drivers of private cars to increase the frequency of public transport usage can reduce harmful emissions, reduce cost of the development of car infrastructure, reduce drivers' and passengers' transport fatigue and increase traffic safety. The implementation of purely economic measures aimed at private car owners' (residents of the suburbs) transport behavior change, can have the effect of increasing the share of those who use public transport. However, this effect may be temporary, as people will gradually return to usage of private cars if they are not satisfied with the value and content of transport customer service value offered by the suburban passenger carrier. Therefore, in order to increase the sustainability of such switching effect, local and state authorities should encourage the suburban carrier to regulate the customer service value of transportation service provided by it, in a certain way. In this way there is a problem of measuring human attitudes to the transportation service offered by the carrier, and developing on this basis the optimal management influence (budget of changes, project implementation time, the magnitude of the effect of switching drivers of private cars to use public transport, combination of these optimization criteria). The largest suburban traffic flow to the capital of Ukraine, Kyiv, is generated by the satellite town Brovary, so the transport situation here is tense. The

---

O. Bakalinsky (✉) · V. Ilchenko · S. Petrovska  
National Transport University, Kyiv, Ukraine

V. Ilchenko  
e-mail: [nika-ivg@ukr.net](mailto:nika-ivg@ukr.net)

S. Petrovska  
e-mail: [petrovskayas@ukr.net](mailto:petrovskayas@ukr.net)

V. Khmylievska  
National Aviation University, Kyiv, Ukraine

marketing research results of the possibilities of private cars drivers switching to the use of public transport in this connection are presented.

**Keywords** Service · Customer value · Total management · Segmentation by direction of customer value search · Suburban passenger transportation · Carrier company · Transport behavior · Customer behavior · Marketing research

## 1 Introduction

Total management of customer service value (CSV) is a new management concept in the service industry (Bakalinsky 2017). It is based on understanding the formation of the CSV as a difference (subtraction) between the benefits and sacrifices of the client. The special segmentation procedure is based on the directions where client search the CSV. The determining of effect of changes in service and customer behavior measures as probability. According to the authors, it can be an effective tool for managing the flow of passengers, which we are trying to prove in this research.

Encouraging drivers of private cars to increase the frequency of public transport usage has several beneficial effects—reducing harmful emissions, reducing the cost of building car infrastructure, reducing transport fatigue of passengers and drivers and improving traffic safety.

The implementation of purely economic measures aimed at private car owners' (residents of the suburbs) transport behavior change, can have the effect of increasing the share of those who use public transport. However, this effect may be temporary, as people will gradually return to usage of private cars if they are not satisfied with the value and content of transport customer service value offered by the suburban passenger carrier. Therefore, in order to increase the sustainability of such switching effect, local and state authorities should encourage the suburban carrier to regulate the customer service value of transportation service provided by it, in a certain way.

In this way there is a problem of measuring human attitudes to the transportation service offered by the carrier, and developing on this basis the optimal management influence (budget of changes, project implementation time, the magnitude of the effect of switching drivers of private cars to use public transport, combination of these optimization criteria).

## 2 Literature Review

The customer service value is a concept that is widely used in the service industry (Lovelock and Wirtz 2016). However, the routine of usage and wide dissemination of this term does not mean that the concentration of understanding of its essence by practitioners and scholars is sufficient to perform the functions of a sustainable economic category. By “category” in a broad sense, we mean the basic classes of

being and, accordingly, the main classes of the concept of being, their properties and the relationship between them.

In work (Bakalinsky et al. 2020) it is shown that 65 publications on the subject of CSV were published by 1940, by 1990 their number doubled every ten years. During the period 1990–2000, the number of articles increased 6 times, and in 2000–2010—3,5 times. Today, the formation of an exclusive for the client CSV is a new potential source of competitive advantage (Woodruff 1997). In fact, CSV is the main idea of the company's existence in modern conditions (Slater 1997).

In the history of this term we find the following most expressive definitions:

- what was given by the client for the benefits (Zeithaml 1998);
- perceived monetary costs for a set of economic, technical and social benefits—the result of the exchange with the firm (Anderson et al. 1993);
- the buyer's perception of value, which is presented as the difference between the quality or benefits of the product and the sacrifices that consist of paying the price (Monroe 1990);
- consumer value as quality perceived by the market which correlates with the price of your product (Gale 1994).

The area of consensus in these definitions is that: the CSV reproduces not only the properties of the service, but also the situation of its providing; the CSV has a dual nature (value for the organization—value for the client); in the service area the CSV is a difference between what can be called benefits and sacrifices of the client.

Instead, the area of disagreement is the diversity of views on the components of the CSV, and, accordingly, their definitions (quality, benefits, sacrifices, satisfaction, intention, purpose). Obviously, without defining these components, it is impossible to determine the CSV as a whole, so let's do it below.

*Benefits* are understood as an increase in the current level of client well-being as a result of service, and its reduction is considered as *sacrifice*. *Well-being* should be understood not only materially, but also morally, psychologically, culturally, socially, etc. (Bakalinsky 2017). *Satisfaction*—the encourage of pleasant emotions from the process and results of service. By *intentions* we mean the direction of the client's consciousness flow, which was the result of service (in context of repurchase of service). *Purpose* is a specific variant of consumer choice, which is formed on the basis of intentions, as a result of previous experience of using the service, and situational factors.

The client will not always want only an increase of benefits, he may seek: only a reduction of sacrifices; only the growth of benefits; balanced both growth and reduction of sacrifices and benefits. In general, the client may be interested not only in winning, but also in reducing the probable loss (Bakalinsky et al. 2021b; Ilchenko et al. 2021).

We see the logic of the client's consumer behavior that is repeated: the difference between perceived sacrifices and benefits as a result of the service turns into the CSV, occurs the satisfaction with service, and on its basis—the intention to repurchase, which in the future is the foundation of consumer purpose.

Customer retention by the service organization is achieved precisely through the repetition of their service and consumer behavior. Repeatability of service and consumer behavior of the client is provided by a unique profile of the service's value. However, it is obvious that the interaction with the service provider is not able to create the most favorable unique CSV for each of the clients. This is especially evident in the services, where clients are served simultaneously in one space. Thus, in the passengers' transportation there is a managerial task to find a profile of the CSV, which will be a compromise between the CSV, which each of the passengers want to get as a result of interaction with the carrier. A successful searching by the carrier company for the parameters of such a compromise CSV of transportation service provides the achievement of its market and, as a consequence, economic goals.

Today, 54% of the world's population lives in urban areas near cities, and by 2050 this share will increase to 66% (Botzoriz et al. 2015). In the European Union, the share of the population of such agglomerations is already 75%, they produce 85% of gross national product (Botzoriz et al. 2015). Without public transport, these areas are difficult to reach, their development is not sustainable, and their population does not have equal opportunities with residents of city.

Various restrictions, economic destimulation to commuter trips by private cars and improvement of suburban transport CSV are designed to increase the frequency of public transport usage. It should help to reduce harmful emissions, save cost on the development of car infrastructure, reduce transport fatigue of road users, increase its safety (Vuchic 1999). But automobilization of the population, poor management of infrastructure and public transport in Ukraine have led to the fact that the flow of people from the city limits to the capital has become a problem of national importance. The capital city of Kyiv has 2.85 million registered people—the eighth most populous country in Europe. In fact, it is home to 10% of the country's population—3.7 million. The metropolitan area of Kyiv has 5.2 million residents. In 2020, Kyiv ranked 12th in the world and third in Europe in terms of congestion. According to the forecast, in 2025 Kyiv residents and suburban residents will spend twice as much time traveling as in 2020.

The largest generator of suburban flow to Kyiv is the satellite town of Brovary. People traveling to Kyiv from Brovary choose the combined “bus - metro” and “private car - metro” trips or use only private cars throughout the trip.

According to the capital city officials, the situation can be improved by various restrictions on the entry of cars into the city, as well as an increase in parking fees in the city. However, according to the authors, in suburban traffic such measures are only the part of the management of transport human behavior. People will not want to give up the benefits of traveling by car, because a significant part of the trip “suburbs—downtown” lies at road, where traffic is not obstructed in the form of congestion. In cases where the car still gets into a traffic jam (for example, at the entrance to the city), there will be public transport next to it (there are no separate lanes for public transport on suburban and intercity roads). During such stop, the comfort in the car will always prevail over the conditions of stay in the cabin of public transport. That is, in terms of the *result* of the trip (duration of travel, time

flexibility to start the trip, the ability to choose the route), in suburban traffic, the driver of a private car wins more compared to public transport than when traveling to the city. The *process* of moving in suburban traffic flow (for example, indicators of comfort), as mentioned above, will almost always be better perceived by a person when traveling by car. The exception may be greater traffic fatigue as consequence of the need to drive a car in difficult road conditions. Therefore, an important factor in changing the transport behavior of a suburban resident—the owner of a private car—in addition to increasing of his travel costs should be to improve the conditions of passengers' transportation in group modes of movement in space, in other words, change their CSV.

### 3 Research Methodology

The problem (Churchill 1991) that faced by managers of suburban carriers and local authorities during the intensive automobilization of the population, is to find parameters to influence to the transport behavior of commuters in such way that the share of passenger traffic moving by public transport increases. The problem that needs research (Churchill 1991) is a part of the managerial and can be formulated as absence of information about the content and dimensions of elements of “suburb—city” trip CSV that motivated (and should motivate) of transport behaviour of private car owners in context of increasing of public transport using. Our marketing research is designed to solve it.

The spatial boundaries of the marketing research determine the traffic flow on the route Brovary—Kyiv. The time limits for the study of transport behavior of passengers and drivers are limited to weekdays. Only those people who use both public transport and a private car to travel to the city became the respondents in the survey. The meaningful boundaries of the study of transport behavior were various motives that motivate a person to choose one of the two ways to trip to the city—a private car or public transport.

The logic of marketing research was as follows. Initially, the authors tried to find an answer to the research question of the value of increasing of the suburban trip cost, which can motivate a person to abandon usage of a car and switch to public transport, the results can be found in Bakalinsky et al. (2021a). Afterwards, the content and value of the CSV of suburban trips by both car and public transport were measured. This made it possible to identify problems with transport services; compare CSV of trips in different ways (private car and public transport); find motivations that should lead to the desired change in transport behavior. On the basis of such measurements, a segmentation procedure was carried out. That shows which groups (segment or segments) of travelers should be in focus for the managerial influence for managers of suburban carriers and local authorities; what motivations drive the transport behavior of people—representatives of the segments; how strong the motivation for change should need. Segmentation was carried out according to the desired directions of



human search for CSV of suburban trips. The procedure of such segmentation is proposed in Bakalinsky (2017).

The expanded content of CSV suburban trips (for private car and public transport) was formed before studies and based on the article (Bakalinsky 2013). The criteria for excluding CSV elements from the extended list was to check the homogeneity test (Duke 1994). It was performed by calculating the Cronbach's alpha coefficient (Cronbach 1951). In our research the homogeneity of the test questions regarding the trip by private car was characterized by the value of the Cronbach's alpha coefficient - 0.73, and travel in suburban public transport - 0.81.

Respondents' perception of elements that form benefits, sacrifices, and the CSV of suburban trip in two ways—by car and by public transport—were measured in surveys using the classical Likert scale (Likert 1932). As the number of questions on the Likert scale regarding travelling by car and public transport are differed, the normalization procedure was followed. This made it possible to compare the benefits, sacrifices and the CSV of travel by private car and public transport.

The probability of the swithing of the owner of a private car to the use of public transport in suburban trip was estimated by the modified semantic differential scale (Churchill 1991, p. 382). The distribution of respondents according to their opinions of the probability of increasing the share of their usage of public transport shows the current situation and allows the researcher and manager to understand how significant the share of those who can be influenced by forming of the CSV of suburban trips. The strength of the correlation between the probability of swithing and the normalized CSV of trips in different ways allows to determine the priority areas of management influence on the CSV.

The research results can rationalize the searching for areas and parameters of management influence, according to which it will be optimal for one or more criteria from the list: budget of changes, project implementation time, the magnitude of the effect of switching private car drivers to use public transport.

## 4 Results

The results of surveys of respondents' perception of the elements (attributes) of the CSV of suburban travel by car and public transport are shown in Tables 1 and 2.

It follows from Tables 1 and 2 that both ways of trip (by public transport and private car) in the connection Brovary—Kyiv, generate a negative average CSV. Therefore, the transport situation on this route is unsatisfactory.

In order to compare the sacrifices, benefits and CSV of trips by public transport and private car, their values were normalized to the maximum and put to Table 3.

From the normalized values in Table 3 it is shown that the number of sacrifices when traveling by car and public transport in suburban connection is almost the same (0,77 and 0,79), while the car gives much more benefits (0,75 vs. 0,55 in public transport).

**Table 1** Perception of attributes of customer value of a suburban trip by public transport

Attributes of benefits	Average values on the array, points on the Likert scale	Attributes of sacrifices	Average values on the array, points on the Likert scale
Clarity and readability of the schedule	2,3	The long walking part of the trip	3,7
Convenience of the schedule	1,9	Time loss due to congestion	4,7
Convenience of a waiting place (bus stop)	0,5	Failure to land due to a full cabin	4,1
Convenience of purchasing tickets	2,1	Feeling of timelessness	3,7
Willingness of staff to help	3,9	Total direct cash costs for the trip	2,7
Clean interior of the vehicle	3,1	Inconvenient seats for passengers in the cabin	3,5
Opportunity to do their own thing on the road (use a smartphone, read)	3,9	Crowding in the cabin	4,3
Low risk of health loss due to an accident	4,3	Physical fatigue from the trip	4,1
<b>Customer value - the average value on the array, points on the Likert scale</b>			<b>-8,8</b>

The probability of increasing the frequency of use of public transport by respondents was estimated by the semantic differential, as shown in Fig. 1.

As the research was conducted in the form of an interview, the interviewer clearly showed the respondent a card with a semantic differential scale and asked to determine the reaction with a mark in the appropriate box of the scale. The distribution of the probability of switching of drivers of private cars to the use of public transport in suburban trips for their current CSV is presented in Fig. 2.

As can be seen from this distribution, only 23% of respondents plan to increase the frequency of travel from Brovary to Kyiv by public transport, 63% - to reduce, and 14% - do not seek any changes.

When predicting human transport behavior, the most important answer is the research question: "What is the relationship between the subtraction between the normalized CSV travel by car and the normalized CSV travel by public transport with the probability of increasing the frequency of public transport using?". It was obtained by the following procedure:

- 1) Values of the CSV of trips by car and public transport, corresponding to the attitude of each respondent, are normalized;
- 2) The subtraction between these values is calculated (as a distance);

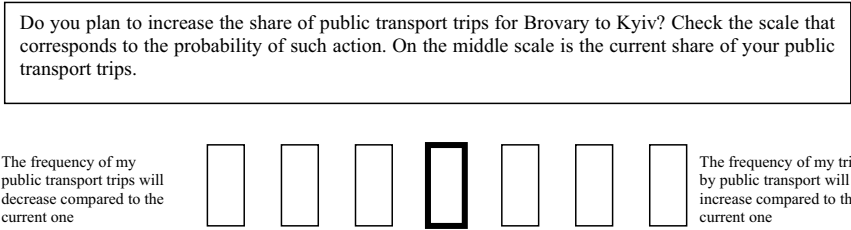
**Table 2** Perception of attributes of customer value of a suburban trip by private car

Attributes of benefits	Average values on the array, points on the Likert scale	Attributes of sacrifices	Average values on the array, points on the Likert scale
A short distance to the car parking place from home	4,6	Loss of time due to congestion	4,8
Driving pleasure	3,5	Feeling of timelessness	4,1
Comfort in the car	4,4	Total direct travel expenses (fuel and parking)	3,9
Spare private space	4,8	Physical fatigue (chronic diseases) from driving car	4,1
Ability to listen to music without restrictions	3,9	The need to focus on the rules of the road	3,8
Ability to communicate by voice telephone without restrictions	3,2	Threat of property loss due to an accident	3,5
Availability of parking in the city	1,9	Risk of health loss due to an accident	3,4
<b>Customer value - the average value on the array, points on the Likert scale</b>			<b>-1,3</b>

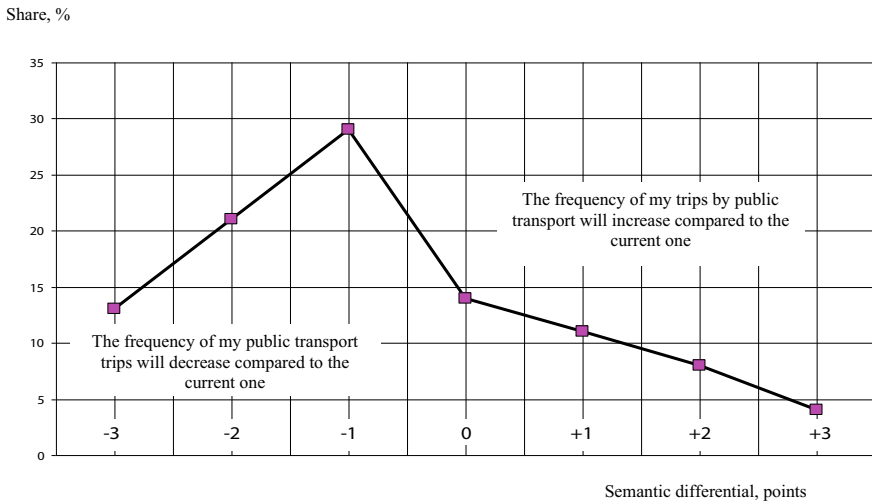
**Table 3** Normalized values of benefits, sacrifices and customer value of suburban travel by public transport and private car

The way of trip in suburban connection	Normalized average value of benefits on the array, points on the Likert scale	Normalized average value of sacrifices in the array, points on the Likert scale	Normalized average value of the customer value of the trip on the array, points on the Likert scale
Public transport	0,55	0,77	-0,22
Private car	0,75	0,79	-0,04
<b>Difference in perceived customer value of suburban travel by car and public transport</b>			<b>0,18</b>

- 3) The coefficient of linear correlation between such subtraction and probability of increase in frequency of use of public transport on all array of respondents is defined;
- 4) The obtained value of the correlation coefficient was estimated according to the ordinal scale of Chaddock (Eliseeva and Yuzbashev 1995): 0,1–0,3—weak; 0,3–0,5—moderate; 0,5–0,7—noticeable; 0,7–0,9—strong; 0,9–,99—very strong. It was strong—0.73.



**Fig. 1** The scale for assessing the probability of increasing the frequency of using public transport by respondents



**Fig. 2** Distribution of probability of transition of drivers of private cars to use of public transport in suburban trips

As a segmentation criteria, we chose the direction of human search for the value and content of the CSV of trip in a certain way—a private car or public transport (Bakalinsky 2017). Any other base of segmentation will not provide such completeness of managerial information. In the Table 4 the processed survey data on segmentation is presented.

It is obvious that the change of the CSV in the direction when the sacrifices increase (S+) and the benefits decrease (B-) is undesirable for the client (see Table 4). However, the researcher must take into account the share of respondents who perceive the attributes of the CSV in this way. Let's explain why this happens.

Attributes of sacrifices and benefits have the ability to change their affiliation in different service situations. For example, through the broken window of the bus in the cabin it is formed a draft. One person perceives it negatively because of the possibility of a cold, and another rejoices because of a pleasant cooling. In addition,

**Table 4** Shares of segments of commuters based on the direction of their search for the CSV of a trip by private car and public transport, %

Sizes of sacrifices and benefits	The method of movement in suburban traffic	
	Private car	Public transport
S+, B+	37	9
S-, B+	31	52
S-, B-	23	34
S+, B-	9	5

*Note* The person search: “S+”—to increase sacrifices; “B+”—to increase benefits; “S-”—to reduce sacrifices; “B-”—to reduce benefits

human psychological mindsets can also increase the difference between the modules of the sums of assessments of the attributes of sacrifices and benefits. Therefore, such a combination can still occur in the processing of survey data and is a natural feature of its design. However, according to the authors, better the researcher determines the content of sacrifices and benefits that make up the CSV of a particular service in a clearly defined service situation, the lower the share of such “paradoxical” results is likely to be.

Let’s define three most important attributes of benefits and sacrifices of suburban trips. From the Table 1 it follows that the biggest sacrifices of a person using public transport are the loss of time due to congestion along with the feeling of timelessness, crowding in the cabin and refusal to board due to a full cabin (inability to provide service due to lack of service productivity). The biggest benefits of public transport, respondents believe the willingness of staff to help, the ability to do their own thing on the road (not to waste of time) and the cleanliness of vehicles. Instead, people need convenient waiting places for transport, a convenient schedule and improvements in the purchase of tickets to travel. The combination of the average values of the attributes of the benefits and the sacrifices obtained by us leads to the fact that the CSV of transport trips is negative (−8.8).

In the Table 2 we see that three most important sacrifices of private cars’ drivers are the loss of time due to congestion, the feeling of timelessness and physical fatigue from driving. The biggest benefits they consider the preservation of private space, the convenience of the trip when leaving the house due to the short distance to the parking, the comfort in its cabin. The difference in the sum of the average benefits and sacrifices of drivers also makes the CSV of car trips negative (−1.3), but it is much better than that of public transport.

Cross-analysis of data in Table 1 and 2 shows that a person on suburban trips is most concerned about the risk of wasting time due to congestion and maintaining a certain level of privacy.

The differences between the normalized values of the sacrifices and the benefits of suburban travel in different ways explain why the CSV of travel by public transport is much lower compared to car travel. With such differences, it will be extremely

difficult to encourage a private car owner to use public transport on a suburban connection: a person has to make a choice between bad and very bad.

The characteristic of the difference between the perceived CSV of suburban trips by car and public transport is calculated as the distance between them and shows how differently the respondent perceives the CSV ways of moving in the suburban connection. In our case, it can be assessed as significant, which further confirms the previous conclusion.

It is also worth noting we found that among those who plan to reduce the share of travel by public transport, a large share a relatively low probability of such events. This can be partly explained by the fact that people want to change to personal transport but are unable to do so: limited solvency for buying a car; lack of bicycle infrastructure, impossibility to park individual transport (e.g. electric scooter) at the metro station, etc.

From the value of the coefficient of linear correlation between the subtraction of CSV by car and public transport and the probability of increasing the frequency of using public transport for the whole array of respondents (0,73) it follows that the choice of commuter travel is significantly influenced by human perception of comfort in the car and public transport, as well as the constant availability of alternatives to travel by private car. This conclusion is generalized, it generally characterizes the transport behavior of all segments from pendulum suburban flow. Therefore, the task of further research in this context is the establishment of association between the probability of switching to public transport of different segments of people depending on the: attributes of sacrifices and the benefits of trip; the frequency of car using; income; social status; areas of employment; personality etc.

As can be seen from Table 4, 37% of drivers are satisfied with trips' CSV in full. If the number of car sacrifices was reduced, another 31% could potentially join the satisfied. About 68% of drivers are satisfied with the benefits of car travel. The results of the analysis of the attributes of car trips' CSV show that it is impossible to reduce the attributes of benefits due to their nature. Therefore, increasing the value of sacrifices of drivers should be considered a priority influence on trips by private car.

It is obvious that such managerial influence can be provided by decisions of local and (or) state authorities. And the suburban carrier will have a very limited influence on them, for example, by lobbying its own interests in government or local level. But the implementation of such measures will lead to an increase in those wishing to use public transport, that will affect the carrier's CSV. So how should the carrier react when forming the CSV of transport services? We will show it further.

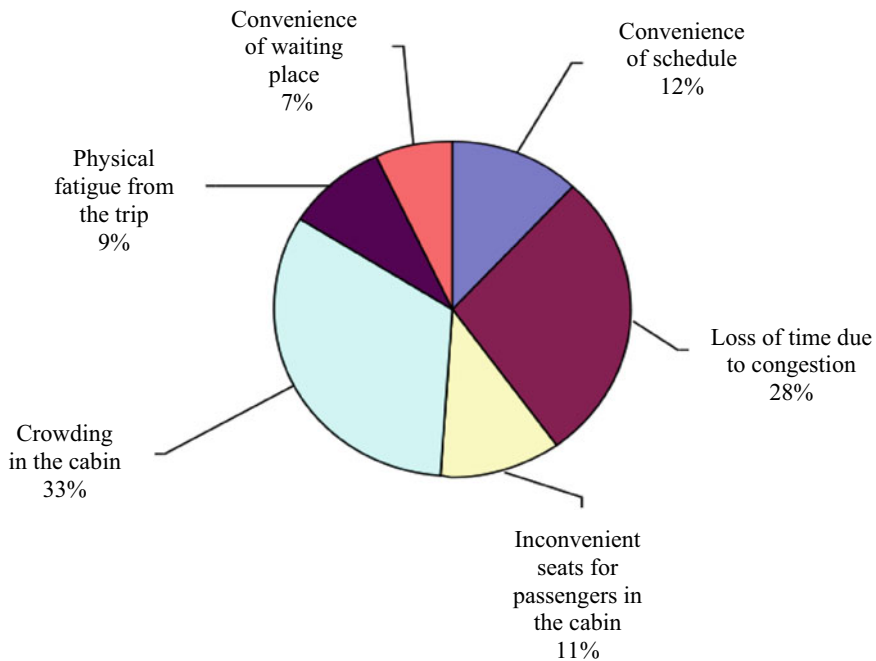
From the second column of Table 4 it follows that only one in ten will be satisfied with the CSV of public transport (9%), which is four times less than for car travel. About 61% of respondents are satisfied with the benefits of traveling by public transport, and 86% are not satisfied with the sacrifices. Therefore, the logical direction of the carrier's management efforts should be the priority reduction of passenger sacrifices, and only after that - increase their benefits.

From the analysis of data from Table 4 it follows that the priority in terms of the magnitude and starting of the expected effect, which will be to reduce the frequency

of use of a private car in suburban trips, are segments of people who perceive trips' CSV by private car as S+ B+ and S- B+, and by public transport as S+ B+ and S- B-. The total share of such segments will be 68% and 61%, respectively.

However, it remains unclear which attributes of the CSV of suburban trip by public transport are subject to priority of improvement in our selected segment. So Fig. 3 shows the structure of the respondents' perception of attributes of the CSV of the suburban trip by public transport, which estimated as "negative perception" or "rather negative perception" and, as a result, need priority improvements in the target segment. Here, the attributes of the CSV should no longer be divided into the sacrifices and benefits of a person traveling in suburban public transport.

Comparing the perception of the attributes of the CSV with the whole array of respondents (see above, the analysis of the data in Tables 1 and 2) with the perception of the target segment (see Fig. 2), we see that they differ. Therefore, the conclusions that could be made by the managers of the suburban carrier without our procedure of segmentation, but only according to Tables 1 and 2 would be wrong. Moreover, only such an approach to segmentation provides complete information on changes in the elements of the SC, which will give the largest, fastest, cheapest effects or a combination thereof. In addition, the managers of the carrier must take into account in which place of the service process are the attributes (elements) of the



**Fig. 3** The structure of the perception of respondents from the target segment of the attributes of suburban travel's CSV by public transport, who received ratings of "negative perception" or "rather negative perception"

CSV, which are perceived by passengers negatively and keep in mind the possibility of changing elements at those points in the service process where critical events occur; a accumulated clients' impression goes to negative level; client feels a lack of information about the conditions of service providing.

## 5 Conclusion

The abovementioned allowed us to draw the following conclusions.

1. Overcoming car-centrism in the development of road transport infrastructure, reducing damage to environment, increasing transport safety are possible mainly due to changes in transport behavior of a person who prefers public transport rather than a private car. It is the value and content of suburban trips' CSV by public transport, and not only monetary costs and time, become special factors of human transport behavior.
2. People will choose a way of moving in space that will potentially give the desired combinations of the highest CSV and (or) the lowest sacrifices and (or) the highest benefits. The view that the passenger always try to achieve the highest CSV of the transportation service is erroneous. In other words people will choose the desired combinations of elements of CSV.
3. The similarity of transport behavior of representatives of one segment in this study was ensured by choosing the right basis for segmentation—the direction in which a person expects to receive the sacrifices, benefits and CSV of a suburban trip.
4. The highest sacrifices of a person who uses public transport are the loss of time due to congestion along with the feeling of timelessness, crowding in the cabin and refusal to board due to a crowded cabin. The highest benefits of public transport respondents believe the willingness of staff to help, the ability to do their own things on the road and the cleanliness of the interiors of vehicles. Instead, people need convenient waiting places for transport, a convenient schedule and improvements in the purchase of travel tickets. The CSV of transport trips is negative  $(-8,8)$ .
5. The three highest sacrifices of private car drivers are the loss of time due to congestion, the feeling of timelessness and physical fatigue from driving. The highest benefits they consider the preservation of private space, the convenience of the trip when leaving the house due to the small distance to the car parking, the comfort in its cabin. The CSV of travel by car is negative  $(-1,3)$ , but it is much better than by public transport.
6. From the normalized values of trips' of sacrifices when traveling by car and public transport in suburban connection is almost the same  $(0,77$  and  $0,79)$ , while the car gives much more benefits  $(0,75$  vs.  $0,55$  in public transport). So, it will be extremely difficult to encourage a private car owner to use suburban public transport.



7. The distribution of the probability of switching of private car drivers to the use of public transport in suburban trips at their current CSV shows that only 23% of respondents plan to increase the frequency of travel from Brovary to Kiev by public transport, 63% - reduce, and 14% - do not want any changes.
8. The priority of the carrier's management efforts should be the reduction of passenger sacrifices, and only then—increase in benefits.

## References

- Anderson, J.C., Jain, D.C., Chintagunta, P.K.: Customer value assessment in business markets: a state-of-practice study. *J. Bus. Bus. Mark.* **1**, 3–29 (1993)
- Bakalinsky, O.: Determinants of consumer value of passenger transportation. *Visnyk Ekonomiky Transportu i Promyslovosti* **44**, 34–38 (2013)
- Bakalinsky, O.V.: Total management of the customer service value. DUIT, Kyiv (2017)
- Bakalinsky, O., Ilchenko, V., Zarbalizade, E.: The modern approaches to definition of customer service value. *Prychornomors'ki Ekonomichni Studiyi* **54**, 68–74 (2020)
- Bakalinsky, O., Ilchenko, V., Zarbalizade, E., Zaplitna, T.: Monetary factors of suburbs residents' transport behavior change: experience of Ukraine. In: International Conference on Sustainable Innovation in Mechanical Engineering, ICSIME-2K21. Faculty of Engineering & Technology, Rama University Uttar Pradesh, Kanpur, India (2021a)
- Bakalinsky, O., Lozhachevska, O., Ilchenko, V., Kovalenko, N.: Analysis of trajectory of client's attitude formation in managerial decisions for improving the customer service value. In: Alareeni B., Hamdan A., Elgedawy I. (eds.) *The Importance of New Technologies and Entrepreneurship in Business Development: In the Context of Economic Diversity in Developing Countries*. ICBT 2020. Lecture Notes in Networks and Systems, vol. 194, pp. 1947–1957. Springer, Cham (2021b)
- Botzoris, G., Galanis, A., Profillidis, V., Eliou, N.: Commuters perspective on urban public transport system service quality. *WSEAS Trans. Environ. Dev.* **11**, 182–192 (2015)
- Churchill, G.A.: *Marketing Research Methodological Foundation*, 5th edn. Dryden Press, New York (1991)
- Cronbach, L.J.: Coefficient alpha and the internal structure of tests. *Psychometrika* **16**(3), 297–334 (1951)
- Duke, V.A.: *Computer Psychodiagnostics*. Bratstvo, St. Petersburg (1994)
- Eliseeva, I.I., Yuzbashev, M.M.: *General Theory of Statistics*. Finance and Statistics, MoCSVov (1995)
- Gale, B.T.: *Managing Customer Value*. Free Press, New York (1994)
- Ilchenko V., Bondarenko V., Zhelezniak K., Petrovska S., Nadiia R.: Assessment of the competitiveness of travel agencies in Ukraine: methodological tools. In: Alareeni B., Hamdan A., Elgedawy I. (eds.) *The Importance of New Technologies and Entrepreneurship in Business Development: In the Context of Economic Diversity in Developing Countries*. ICBT 2020. Lecture Notes in Networks and Systems, vol. 194. Springer, Cham (2021). [https://doi.org/10.1007/978-3-030-69221-6\\_56](https://doi.org/10.1007/978-3-030-69221-6_56)
- Likert, R.: A technique for the measurement of attitudes. *Arch. Psychol.* **140**, 1–55 (1932)
- Lovelock, C., Wirtz, J.: *Services Marketing: People, Technology, Strategy*, 8th edn. World Scientific, Hackensack (2016)
- Monroe, K.B.: *Pricing: Making Profitable Decisions*. McGraw-Hill, New York (1990)
- Slater, S.F.: Developing a customer value-based theory of the firm. *J. Acad. Mark. Sci.* **25**, 162–167 (1997)
- Vuchic, V.R.: *Transportation for Livable Cities*, 1st edn. Routledge, Milton Park (1999)

- Woodruff, R.B.: Customer value: the next source for competitive advantage. *J. Acad. Mark. Sci.* **25**, 139–153 (1997)
- Zeithaml, V.A.: Consumer perceptions of price, quality, and value: a means-end model and synthesis of evidence. *J. Mark.* **52**(3), 2–22 (1998)

# Factors Affecting Food Price Stability: Evidence from Turkey



Necla Ilter Kucukcolak  and Ceren Sopaci 

**Abstract** This study evaluates the factors affecting the formation of agricultural commodity prices. The aim is to determine the components for ensuring food price stability and combating food inflation. In order to examine the relationship, agricultural commodity daily price volatility is analyzed with the GARCH methodology, in the periods before and after the national spot market launch in July 2019. Explanatory factors in the model are US dollar/Turkish lira, Turkish lira overnight interest rate and Brent oil return series. It is observed that; shocks in US dollar/Turkish lira returns has a positive effect on the wheat and maize price returns and increase their volatility. Contrary to the positive effect of the US dollar/Turkish lira series on wheat and maize price returns, shocks in Brent oil price returns have a negative effect on these commodities. When compared with the daily price changes within the national agricultural mercantile exchange (TMEX) with the previous decentralized commodity markets period, it has been observed that TMEX has brought stability to the market with a decreasing daily price fluctuation range and contributes to healthy price formation.

**Keywords** Agricultural commodities · Price volatility · GARCH

## 1 Introduction

For food supply security, agricultural and farming activities should be sustainable and profitable. Predicting and managing price volatility in agricultural commodities are important not only for consumers but also for farmers especially in terms of protection from the negative effects on the income of small-scale farmers. One of the income stabilization mechanisms for price and supply control to ensure market stability are agricultural production incentive policies for farmers. Others can be risk management techniques such as crop insurance and futures contracts. Agricultural policies play a key role in the development and stability of commodity markets.

---

N. I. Kucukcolak (✉) · C. Sopaci  
Turkish Mercantile Exchange, 06530 Ankara, Turkey  
e-mail: [necla.kucukcolak@turib.com.tr](mailto:necla.kucukcolak@turib.com.tr)

Regarding available hedge mechanisms for risk management purpose, the level of financialization of the commodity sector is important and remains relatively low due to the difficulty of standardization and logistics it requires for physical deliveries compared to financial instruments. As a result, the market share of commodities in financial markets is lower than financial instruments. However, parallel to the expansion of commodity markets, the need to manage the risks of price changes has led to the transformation of the market structure and the establishment of specialized exchanges.

The functions of commodity exchanges include managing risk, reducing counterparty risk, improving price transparency, improving collateral valuation, establishing commodity standards (FAO 2011). Unlike spot markets, which are based on immediate delivery of commodities, the futures market is based on the physical delivery or cash settlement of commodity contracts at a specified price at a future maturity. These markets function as a central platform for agricultural commodities and constitute the primary mechanism for information and price discovery. The first organized commodity futures market in the world was the Osaka Rice Exchange (UNCTAD 2007), established in Japan in 1730, and Chicago in the USA has been an important center for agricultural commodities since the 1800s. However, not all commodity markets are at the same level of development and cannot fulfill all of these functions.

Considering its long history in the agricultural sector and markets, the level of development of the commodity derivatives market in Turkey is not at the maturity level compared to its international peers. The first spot commodity exchange in Turkey was established in İzmir in 1892 under the name of İzmir Commodity and Industry Exchange. It was followed by Adana Commodity Exchange in 1913, Istanbul Commodity Exchange in 1925 and Ankara Commodity Exchange in 1927. The number of exchanges increased rapidly within the framework of the regulations made afterwards, and as of 2021, there are 113 exchanges, 58 of which are in the province and 55 in the district center. TMEX was established in 2019 in order to accelerate the financialization process by introducing specialized markets and intermediaries for agricultural commodity ecosystem. For an accurately functioning derivatives market, it is important to have an active spot market. In this context, TMEX's primary mission is to consolidate the nationwide cash market for agricultural commodities in the spot Electronic Warehouse Receipts-EWR Market. Subsequently, it aims to launch the physically delivered futures market on the agricultural commodities.

The following part of this paper covers the price volatility in commodity markets. In the third part, the literature on commodity price volatility at the international and national level is provided. In the fourth part, an analysis of price volatility for the period of 2016–2020 is made for wheat and maize, which have the largest market share and therefore liquid and deep markets in TMEX. The last section includes the general evaluation of the study findings.

## 2 Agricultural Commodity Market

### 2.1 International Markets

Agricultural commodity markets have features such as low elasticity of supply and demand, inability to respond immediately to demand changes due to the production cycle, and being open to external shocks such as weather conditions and pests. The demand is continuously increasing due to the increasing population and income increase in developing economies and is expected to increase significantly in the coming years. The inability of agricultural production to keep up with the demand increases the expectation of an upward movement on prices. In addition, due to the direct and indirect effects of agricultural input prices such as oil and fertilizer, they are more associated with agricultural commodity prices and an increasing correlation is observed. Climatic factors also contribute significantly to price increases. These weather-related events are expected to worsen conditions in arid and semi-arid regions as a result of cyclical as well as long-term climate change, leading to extreme events such as heat waves and floods, increasing local or regional supply risks. Due to the trade of agricultural commodities in US dollars, foreign exchange movements contribute to price changes, and it is considered that exchange rate volatility is also reflected in the volatility of international commodity prices.

According to the statistics of the US Department of Agriculture (USDA); as of 2019, 765 million tons of production and 742 million tons of consumption were recorded in wheat, and 146 million tons (19%) were produced by the USA, Russia and Turkey. On the other hand, 1.1 billion tons of production and consumption were realized in maize, and 367 million tons (33%) were produced by the USA, Russia and Turkey. In Fig. 1, annual wheat producer prices and production amounts for Turkey, USA and Russia obtained from the FAO website for the period 1993–2019 are shown.

Table 1 shows the descriptive statistics on annual wheat producer prices in Turkey, USA and Russia. Turkey’s wheat producer price was in the range of 126.9–438.7 US dollars/ton, with an average of 250.5 US dollars/ton. Production, on the

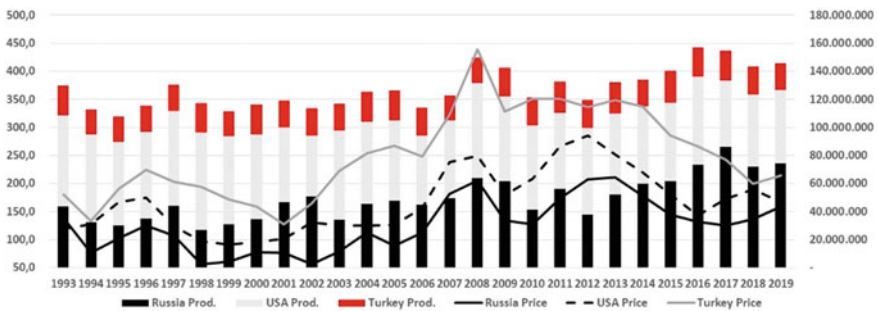


Fig. 1 Wheat producer prices (USD/ton) and production (ton) (1993–2019). Source FAO (2021)

other hand, was 17.2–22.6 million tons, with an average of 19.8 million tons. The buying/selling prices announced by Turkish Grain Board for crops harvested in 2021 are US\$265/288/ton for wheat bread.

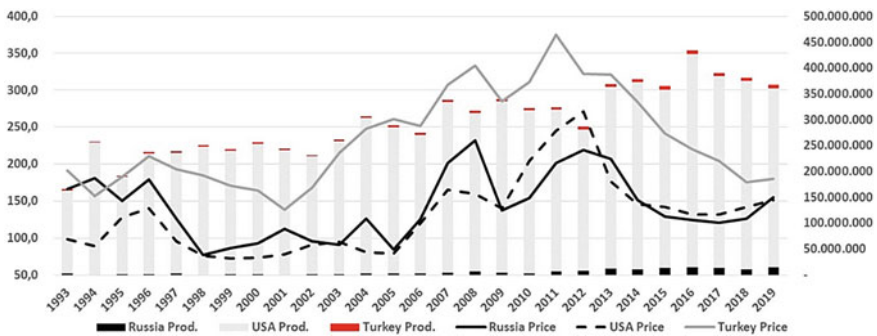
In Fig. 2, annual maize producer prices and production amounts in Turkey, USA and Russia for the period 1993–2019 which is obtained from the FAO and in Table 2, descriptive statistics regarding these figures are depicted.

As shown in Table 2, The Russian maize producer price was in the range of 77–231.7 US dollars/ton, with an average of 142.7 US dollars/ton. The production was realized in the range of 0.8–15.3 million tons, with an average of 5.5 million tons. The US maize producer price was in the range of 72–271 US dollars/ton, with an average of 130.4 US dollars/ton. The production was realized in the range of 161–412.3 million tons and the average was 289.3 million tons.

Turkey’s maize producer price was in the range of 138–375.3 US dollars/ton, with an average of 233.2 US dollars/ton. The production was between 1.9–6.4 million tons and the average was 3.8 million tons. In TMEX, price of maize is 293 US\$/ton as of June 2021.

**Table 1** Descriptive statistics of wheat price (US\$/ton) (1993–2019)

Wheat statistics	Price/Russia	Price/USA	Price/Turkey
Average	125,4	167,2	250,5
Minimum	55,9	91,0	126,9
Maximum	210,9	286,0	438,7
Standard deviation	46,5	55,9	79,3
Kurtosis	−0,8	−0,6	−0,5
Skewness	0,3	0,6	0,4



**Fig. 2** Maize producer prices (USD/ton) and production (ton) (1993–2019). *Source* FAO (2021)

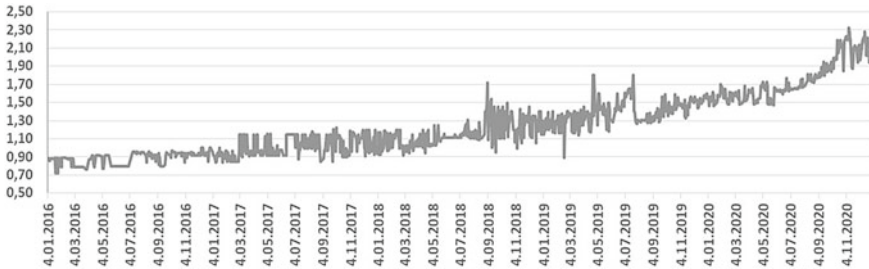
**Table 2** Descriptive statistics of maize price (USD/ton) (1993–2019)

Maize statistics	Price/Russia	Price/USA	Price/Turkey
Average	142,7	130,4	233,2
Minimum	77,0	72,0	138,0
Maximum	231,7	271,0	375,3
Standard deviation	43,8	51,1	64,5
Kurtosis	-0,7	1,3	-0,8
Skewness	0,4	1,1	0,5

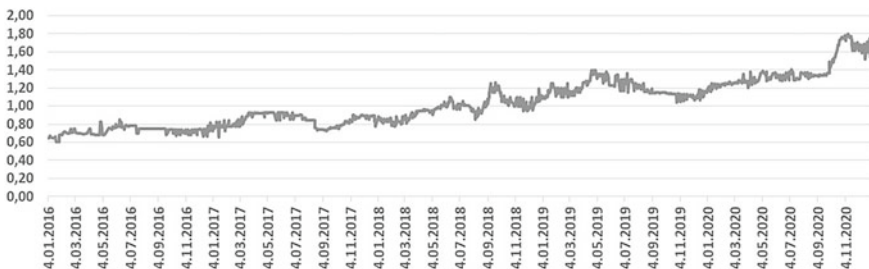
## 2.2 National Wheat and Maize Markets

The weighted average price chart of wheat bread and maize trading in the TMEX spot EWR Market for the period 2016–2020 is given below (Figs. 3 and 4). TMEX became operational with the EWR Market on July 26, 2019. When the pre- and post-TMEX price movements are analyzed, it is observed that the range of changes in the daily price series narrowed in the post-TMEX period.

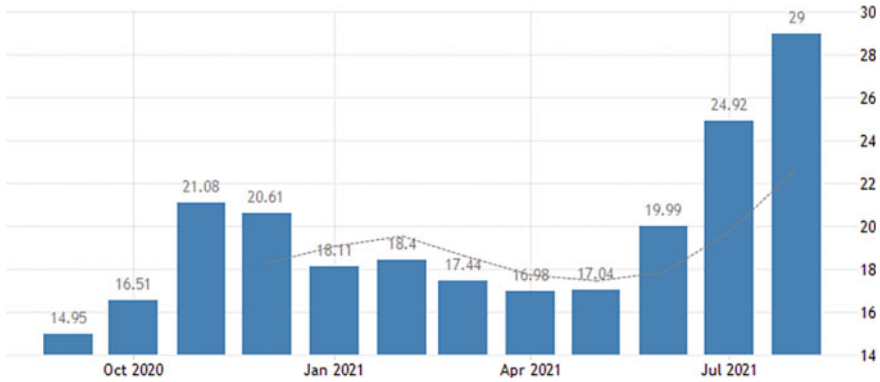
Macroeconomic factors, which have an impact on aggregate supply and demand balances, have an impact on food prices (Sarris 2009). As seen in Fig. 5, it has been observed that food prices in Turkey increased by 29% in August 2021, compared to the same month of the previous year.



**Fig. 3** Weighted average price of wheat bread (TRY/kg). Source TMEX (2020)



**Fig. 4** Weighted average price of maize (TRY/kg). Source TMEX (2020)



**Fig. 5** Turkey food inflation (September 2020–August 2021). *Source* Trading Economics (2021)

The increase in the price level of food causes a decrease in the amount of domestic production. With the increase in food inflation, the cost of imports increases, and the increase in the cost of imports causes a decrease in the level of domestic output (Kapusuzoglu et al. 2018). In this context, it is of great importance to keep imports and exports in balance in order to achieve stability in food prices and to avoid food shocks. The high level of imports, the increase in import costs and the deterioration of the balance of trade may negatively affect the stability of food prices.

The high import level of Turkey, which is one of the countries that imports in dollar terms and exports in euros, can have significant effects. Foreign exchange deficit that can be seen in the country as a result of the deterioration of the balance of imports and exports, and the negative effects of interest rates and inflation as a result of the foreign exchange deficit (Kapusuzoglu et al. 2018). With the stability of exchange rates, which can be achieved through regulation of imports and exports, domestic price stability is ensured (Galtier 2009).

It is evaluated that with the launch of TMEX spot EWR Market, healthy price formation and price stability under a centralized structure can be observed more in the near future as indicated in Figs. 3 and 4.

The cost effect, resulting from increases/decreases in exchange rates affects the volume of imports and exports, which causes the prices of agricultural commodity prices to fluctuate in international markets (Karadaş and Koşaroğlu 2020). Changes in exchange rates have an impact on the prices of imported agricultural commodities. In other words, the increase in the exchange rate affects the prices of imported commodities upwards and causes volatility in the prices of agricultural commodities in the national markets.



### 3 Literature Review

Price volatility is related to how frequently the change occurs in the price series and is measured as the standard deviation of the change in value in a certain time period. The risk is considered to be high, if the volatility of an instrument is high and; if it is low, the risk is considered as low (Wolf 2004).

Extensive studies have been carried out in the literature, particularly on modeling and estimating equity market volatility. The main motivation of these studies is to measure the total risk of financial assets. Many value-at-risk models require volatility calculation or estimation in the measurement of market risk (Brooks 2008).

When the subject is evaluated in terms of food and agriculture sector commodities, the situation is not different, price volatility creates uncertainty about future prices and causes high risks in the market and therefore welfare losses for market participants due to the farmers' inability to predict prices (Apergis and Rezitis 2003). Market risk associated with uncertainty is one of the most important risks regarding the prices farmers will receive for their commodities or pay for their inputs. Possible price stabilization strategies include government intervention, including the use of supply management tools.

Within the framework of the 2008 global food crisis, studies for this period were carried out to understand the factors affecting food price volatility. While high input prices can deter cultivation and thus slow down production, there are findings that the most important determining factor in the outlook of the agricultural sector is the oil price level and how much production will be affected by high prices and weather conditions (Meyers and Meyer 2008).

When the literature on agricultural commodities is examined; a study (Huchet-Bourdon 2011) for the OECD on the statistical analyzes of the volatility of individual agricultural commodity prices showed that there was no increasing trend in price volatility in the last fifty years, except for wheat and rice, from January 1957 to February 2010. In the same study, it was concluded that price volatility in the 2006–2010 period was higher than in the 1990s, but not higher than in the 1970s in general, with a special emphasis on the fact that commodity prices, including wheat and maize, were correlated with oil and fertilizer prices especially in the 2000s. These outcomes are consistent with the results of other studies on this subject (Balcombe 2009; Sumner 2009; Gilbert and Morgan 2010).

In another study, in terms of the increasing global trend in price volatility over the last 50 years, excluding wheat and rice, and the most recent commodity price increase and collapse in 2006–09, the overall finding is that price volatility is higher than in the nineties. The correlation between commodity prices and crude oil prices stemming from production and transportation costs, and the relationship between oil prices and maize prices supported a positive correlation (Huchet-Bourdon 2011).

In the study conducted with the aim of examining the factors affecting the prices of agricultural commodities in Turkey, it has been observed that while the prices of agricultural commodities are affected by the changes in export, import and exchange rates, they are not affected by the changes in crude oil prices. While the increase

in exports of agricultural commodities affected commodity prices negatively, the increase in imports and exchange rates had a positive impact (Karadaş and Koşaroğlu 2020).

In the study on grain price volatility in European Union countries, findings support the fact that a number of EU countries such as Hungary, Czech Republic, Germany, France, Lithuania and Poland are faced with high wheat price volatility (Hamulczuk and Klimkowski 2011). There are also studies in the literature that show a strong relationship between agricultural commodity price volatility and oil (Huchet-Bourdon 2011; OECD 2009; Han and Nayga 2012) and exchange rate volatility (Mushtaq et al. 2011; Frank and Garcia 2010; Ott 2012).

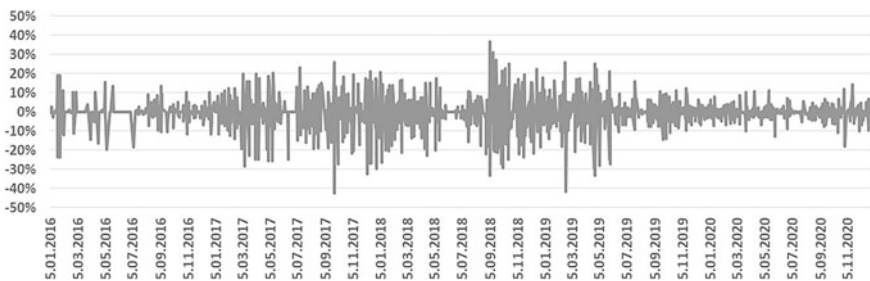
## 4 Methodology

### 4.1 Data Set

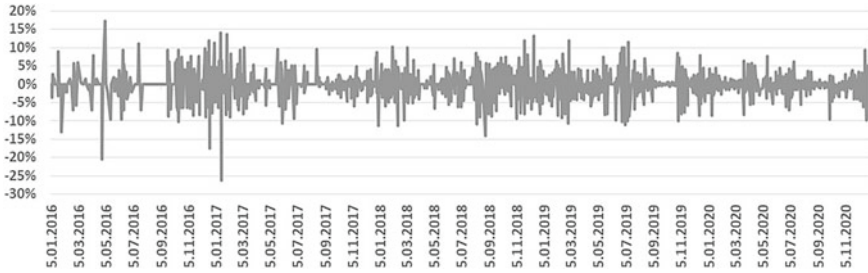
In our study, we examined daily values of 2016–2020 in two period: before and after the launch of TMEX spot EWR Market.

- I. Period/Before TMEX: 4 January 2016–25 July 2019
- II. Period/After TMEX 26 July 2019–31 December 2020

Considering the demand and production level, a daily change (return) series was calculated by using the price data set of wheat (wheat bread) and maize, which are the two most liquid commodities in TMEX. The data for the first Period is the consolidated version of the trading information from the six commodity exchanges which have the EWR trading platform. The data for the second period is from TMEX EWR Market tradings. Based on these data, return series were created from the daily changes of weighted average prices on commodity basis compared to the previous day. Figures of these series are available in Fig. 6 and 7. It is observed that the price fluctuation on a daily basis decreased after TMEX started to operate.



**Fig. 6** Yield series of wheat bread (04.01.2016–31.12.2020). *Source* TMEX (2020)



**Fig. 7** Yield series of maize (04.01.2016–31.12.2020). *Source* TMEX (2020)

The oil and exchange rate, which has been shown to be related to the price volatility of agricultural commodities in the literature, were also included in the analysis in order to observe the interaction of the price of agricultural commodities with oil and exchange rates in Turkey. The overnight interest rate is also included in the analysis.

E-views statistical program was used for econometric analysis.

### 4.2 Volatility Analysis Methodology

In econometrics, variance is used to measure the volatility and dispersion of data. Based on the autoregressive conditional variance developed by Engle (Engle 1982), in econometrics; it assumes that the variance of the error term in the current period is a function of the variance of the error terms in the previous period, and it was quickly accepted in the literature. In the autoregressive conditional heteroscedasticity (ARCH) model;

*Assuming  $\epsilon_t = \sigma_t z_t, z_t \sim iidN(0, 1)$   
 Under the conditions of  $\alpha_0 > 0$  ve  $\alpha_i \geq 0, i > 0$   
 The  $\sigma_t^2$  variance is modeled as follows:*

$$\sigma_t^2 = \alpha_0 + \alpha_1 \epsilon_{t-1}^2 + \dots + \alpha_p \epsilon_{t-p}^2 \tag{1}$$

In cases where the error term exhibits an autoregressive moving average structure, the generalized autoregressive conditional variable variance model (GARCH), modeled by Bollerslev (Bollerslev 1986), has been used. The generalized ARCH model (GARCH) variance equation was constructed to include the lags of the conditional variance. In order to eliminate the shortcomings of this model, many new volatility models have been introduced to the literature, but no consensus has been reached on the best model (Akar 2007). Many empirical studies in the literature have revealed that the GARCH (1, 1) model is the most suitable model for time series ((Bollerslev 1986; Colm and Patton 2000; Wang and Wang 2001). The equation of variance of the GARCH (1, 1) model is below,  $\beta$  parameters reflect the effect of the changing variance and  $\alpha$  reflect the effect of shocks to the model.

*GARCH variance equation:*

$$\sigma_t^2 = \alpha_0 + \alpha_1 \epsilon_{t-1}^2 + \dots + \alpha_p \epsilon_{t-p}^2 + \beta_1 \sigma_{t-1}^2 + \dots + \beta_q \sigma_{t-q}^2 \quad (2)$$

The E-GARCH variance equation is as follows, and it is evaluated that the variance whose  $\beta$  parameters change, and if  $\gamma$  is negative, the shocks have an asymmetrical effect (leverage effect):

$$\text{Log } \sigma_t^2 = \omega_0 + \beta_1 \text{Log } \sigma_t^2 + \alpha_1 \left| \frac{\epsilon_{t-1}}{\sqrt{\sigma_{t-1}^2}} \right| + \gamma_1 \left( \frac{\epsilon_{t-1}}{\sqrt{\sigma_{t-1}^2}} \right) \quad (3)$$

In our study, ARCH, GARCH, the extended version of ARCH methodology and Exponential GARCH (E-GARCH) were calculated to determine the most suitable GARCH volatility model for each return series and model factors. Nelson (Nelson 1991) developed the E-GARCH model, which takes into account the large and signs of the lagged error terms of the conditional variance, to account for the asymmetry in the volatility structure.

Before estimating the GARCH (1, 1) model, the Lagrange Multiplier (LM) test was applied to observe whether the ARCH effect exists. For this, first of all, the varying mean (ARMA) model was examined. ACF and PACF (autocorrelation function and partial autocorrelation function) were used to determine the lag length (p and q) of the model. The ARCH-LM test was applied to the errors produced by the most suitable models selected. The ARCH-LM test is a methodology for testing the lag length of ARCH errors using the Lagrange multiplier test proposed by Engle (Engle 1982). This test must be performed before applying the GARCH models to the series. If all the p-values for this test are too small, the null hypothesis is considered that the dataset has no ARCH effect. Provided that the ARCH effect is present, it is appropriate to match the volatility with the GARCH model (Chiang et al. 2013).

Each return series ( $r_t$ ) analyzed by GARCH is given below, and the Augmented Dickey-Fuller (ADF) statistical test, which is generally used in unit root analysis for the stationarity of the series, was used in this study.

- Wheat Bread (BDY\_EKM)
- Maize (MISIR)
- Brent oil (BRENT)
- US\$/TL (USD/TRY)
- Overnight interbank TRY interest - TRIBOR (IR\_ON)

### 4.3 Analysis Results

In general, it is evaluated that financial asset prices are not stationary in time series, but asset returns are stationary, do not show autocorrelation, tend to be leptokurtic, return

**Table 3** Return series descriptive statistics

Series short name**	% Avg.	% Maks.	% Min.	Std. Dev.	Skew.	Kurt.	JB
RBDY_EKM	0.06	25.85	-42.86	5.93	-0.357	9.25	2156
RMISIR	0.08	18.86	-19.04	3.32	-0.191	9.21	2110
RUSDTRY	0.07	14.71	-6.48	1.00	2.775	47.41	109,336
RBRENT	0.05	18.82	-31.24	2.73	-1.567	31.43	44,644
RTRIBOR_ON	0.50	490.07	-393.38	27.75	1.942	141.42	1,046,613

\*\**R* Return, *B DY\_EKM* for wheat bread, *MISIR* for maize, *USDTRY* The exchange rate of TL against US\$, *BRENT* US\$ oil price, *TRIBOR\_ON*, The daily difference of the overnight TRY interbank interest rate

The probability (prob.) for all series was calculated as 0.0000

**Table 4** Unit root test results

	Sabitle
RBDY_EKM	-28.94389*
RMISIR	-24.82679*
RUSDTRY	-17.73956*
RBRENT	-35.13549*
RTRIBOR_ON	-35.57444*

\*  $P < 0.01$

distributions have a flatter and wider tail than the normal distribution, and the thick tail and volatility clustering are related to each other (Songul 2010). Information on descriptive statistics regarding our data set for the period 1 January 2016–31 December 2020 is given in Table 3. The number of observations is 1310 for each. As can be seen from the table, while the overnight interest (RTRIBOR\_ON) returns have the highest standard deviation, it is followed by wheat bread and maize.

Information on the Augmented Dickey-Fuller (ADF) unit root test results used for stationarity testing of time series are given in Table 4.

Information on the ARCH-LM test results applied to the errors produced by the selected optimal models is given in Table 5.

Studies were carried out on the estimation of the conditional volatility in the return series with the standard and exponential GARCH models, and as a result, the exponential GARCH (EGARCH) results, which were found to be the most appropriate model, are given in the Tables 6 and 7 below. In order to investigate the effect of the error terms of the return series of exchange rates and oil prices included in the model as external factors, on the price of agricultural commodities, the residuals produced as a result of the conditional mean and conditional variance models were added to the relevant models. Since the conditional mean and variance model is not formed in the interest series, only the series itself is added to the model and error terms are not added.

**Table 5** Test results of ARCH LM

	ARCH (1)
	F(1,1307)
RBDY_EKM	114.6247 (0.0000)
RMISIR	42.26249 (0.0000)
RUSDTRY	359.3122 (0.0000)
RBRENT	72.2842 (0.0000)
RTRIBOR_ON	0.036186 (0.8492)*

\* Since no statistical significance could be found in the TRIBOR overnight interest series, varying variance models were not investigated (Appendix).

ARMA (0, 2) - EGARCH (1, 1) model was obtained as the most suitable model for wheat bread. The probabilities (prob.) of the wheat bread yield series coefficients in Table 6 are given; Those equal to 0.01 and less than 0.05 are statistically significant; Those equal to 0.001 and less than 0.01 are highly significant; Less than 0.001 indicates very high statistical significance.

The statistically significant parameters show that past shocks and past return fluctuations affect current conditional volatility. According to the Model result for wheat bread, USD/TRY rate and overnight interest (TRIBOR) have a positive effect, oil (Brent) has a negative effect, but the overnight interest is not statistically significant (Prob.: 0.7365) effect on bread. In other words, it has been observed that the overnight interest has no effect on wheat bread prices.

According to the result of variance equation, the USD/TRY rate is statistically significant. In this context, it was observed that the volatility of unexpected shocks in the USD/TRY exchange rate had a positive effect on wheat bread price returns. In other words, it is statistically significant that the exchange rate increases the volatility in wheat price changes. Although the  $\gamma$  variable (C(9) in the model), which represents the leverage effect, is not statistically significant, has a negative effect on the volatility of price changes. If it was statistically significant, we could consider the negative effect as having a greater effect of negative shocks than positive shocks.

ARMA (0, 2) - EGARCH (1, 1) model was obtained as the most suitable model for maize. According to the Model result for maize, a positive relationship was found for USD/TRY exchange rate and overnight interest (LIBOR) and a negative relationship for oil (Brent), but the overnight rate and oil were not statistically significant. In other words, there is no evidence that past shocks and past yield fluctuations affect current conditional volatility.

According to the result of variance equation, USD/TRY exchange rate and overnight interest rate are statistically significant. In this context, it was observed that the volatility of unexpected shocks in the USD/TRY exchange rate and interest

**Table 6** E-GARCH (1, 1) modeling for wheat bread and factors

Dependent Variable: RTURIB_BDY_EKM				
Sample (adjusted): 1/08/2016 3/12/2021				
Included observations: 1307 after adjustments				
LOG(GARCH) = C(7) + C(8)*ABS(RESID(-1)/@SQRT(GARCH(-1))) + C(9)				
*RESID(-1)/@SQRT(GARCH(-1)) + C(10)*LOG(GARCH(-1)) + C(11)				
*RESID_RBRENT^2 + C(12)*RESID_RUSDTRY^2 + C(13)				
*RTRIBOR_ON^2				
Variable	Coefficient	Std. error	z-Statistic	Prob.
RESID_RBRENT	-0.085210	0.023970	-3.554833	0.0004
RESID_RUSDTRY	0.190802	0.073207	2.606324	0.0092
RTRIBOR_ON	0.000952	0.002828	0.336439	0.7365
C	0.001118	0.000349	3.206508	0.0013
MA(1)	-0.453829	0.020178	-22.49159	0.0000
MA(2)	-0.106144	0.027488	-3.861485	0.0001
<i>Variance equation</i>				
C(7)	-0.176326	0.017704	-9.959936	0.0000
C(8)	0.169137	0.009919	17.05141	0.0000
C(9)	-0.008950	0.010847	-0.825118	0.4093
C(10)	0.991064	0.002460	402.9409	0.0000
C(11) BRENT	-0.122208	1.415581	-0.086331	0.9312
C(12) USDTRY	48.26830	14.39970	3.352035	0.0008
C(13) TRIBOR_ON	-0.020200	0.010405	-1.941393	0.0522
R-squared	0.229672	Mean dependent var		0.000633
Adjusted R-squared	0.226711	S.D. dependent var		0.059352
S.E. of regression	0.052192	Akaike info criterion		-3.558121
Sum squared resid	3.543980	Schwarz criterion		-3.506643
Log likelihood	2338.232	Hannan-Quinn criter.		-3.538811
Durbin-Watson stat	2.164107			

rates had an impact on maize price returns. In other words, it is seen that the effect of the commodity on the volatility in price changes is positive for the exchange rate and the negative effect for the interest is statistically significant. C(9) representing the  $\gamma$  variable was not statistically significant, and a negative effect of price changes on volatility (negative shocks being more effective than positive shocks) was observed.

**Table 7** E-GARCH (1, 1) modeling for Maize and factors affecting volatility

Dependent Variable: RTURIB_MISIR				
Sample (adjusted): 1/08/2016 3/12/2021				
Included observations: 1307 after adjustments				
LOG(GARCH) = C(7) + C(8)*ABS(RESID(-1)/@SQRT(GARCH(-1))) + C(9)				
*RESID(-1)/@SQRT(GARCH(-1)) + C(10)*LOG(GARCH(-1)) + C(11)				
*RESID_RBRENT^2 + C(12)*RESID_RUSDTRY^2 + C(13)				
*RTRIBOR_ON^2				
Variable	Coefficient	Std. error	z-Statistic	Prob.
C	0.001159	0.000382	3.032315	0.0024
RESID_RBRENT	-0.004296	0.020884	-0.205717	0.8370
RESID_RUSDTRY	0.126597	0.069889	1.811386	0.0701
RTRIBOR_ON	0.001038	0.001875	0.553481	0.5799
MA(1)	-0.404903	0.026509	-15.27396	0.0000
MA(2)	-0.065299	0.026253	-2.487341	0.0129
<i>Variance equation</i>				
C(7)	-0.312086	0.031716	-9.839918	0.0000
C(8)	0.128253	0.008594	14.92337	0.0000
C(9)	-0.001635	0.009049	-0.180734	0.8566
C(10)	0.967519	0.004216	229.5015	0.0000
C(11) BRENT	1.815992	1.242646	1.461391	0.1439
C(12) USDTRY	22.73594	13.61917	1.669407	0.0950
C(13) TRIBOR_ON	-0.095055	0.018097	-5.252626	0.0000
R-squared	0.159830	Mean dependent var		0.000744
Adjusted R-squared	0.156601	S.D. dependent var		0.033171
S.E. of regression	0.030464	Akaike info criterion		-4.345666
Sum squared resid	1.207366	Schwarz criterion		-4.294189
Log likelihood	2852.893	Hannan-Quinn criter.		-4.326357
Durbin-Watson stat	2.034234			

## 5 Conclusion

In this study, the price volatility of wheat (bread) and maize as agricultural commodities in Turkey were investigated with the GARCH model. For this purpose, the return values over the daily prices of the 2016–2020 period were examined, and the interaction of oil, foreign currency and interest price variables were added to the and their interaction was examined.

ARMA (0, 2) - EGARCH (1, 1) model was obtained as the most suitable model for wheat bread and maize. According to the Model result for wheat bread, USD/TRY exchange rate and overnight interest (TRIBOR) have a positive effect and oil (Brent)



has a negative effect, but it has been observed that the overnight interest has no effect on wheat bread prices. It is observed that the volatility of unexpected shocks in the USD/TRY exchange rate has a positive effect on wheat bread price returns and increases the volatility in price changes of the commodity.

According to the ARMA (0, 2) - EGARCH (1, 1) Model result for maize, a positive and statistically significant relationship was found for the USD/TRY exchange rate. For overnight interest (LIBOR) rate and oil prices, there is no evidence that past shocks and past return fluctuations affect the current conditional volatility. From the variance equation, it has been observed that the volatility of unexpected shocks in the USD/TRY exchange rate and interest rates have an effect on maize price returns.

On the other hand, TMEX (26.07.2019–31.12.2020), which has been operational since July 26, 2019 brought liquidity to a certain extent when compared with the period of 01.01.2016–25.07.2019 within the scope of the study. It has been observed that the daily price change follows a more stable trend and the range of price change decreases.

Contrary to the literature, it is necessary to examine whether the support and incentives given to farmers are among the reasons why the strong relationship between oil and agricultural commodities is not observed for Turkey, and also whether there are low-interest loans given to the farmer among the reasons why the interest relationship is not observed. It will be instructive to evaluate the commodities in question with different GARCH models over a longer-term series in the coming period, based on TMEX data set.

## Appendix: EGARCH (1, 1) Regression Results for Each Series in the Model

### a) Yield Series of Oil (BRENT)

Dependent Variable: RBRENT				
Sample (adjusted): 1/06/2016 3/12/2021				
Included observations: 1309 after adjustments				
LOG(GARCH) = C(4) + C(5)*ABS(RESID(-1)/@SQRT(GARCH(-1))) + C(6)				
*RESID(-1)/@SQRT(GARCH(-1)) + C(7)*LOG(GARCH(-1))				
Variable	Coefficient	Std. error	z-Statistic	Prob.
C	0.000977	0.000461	2.119820	0.0340
AR(1)	-0.885715	0.097514	-9.082911	0.0000
MA(1)	0.904868	0.089252	10.13833	0.0000
<i>Variance equation</i>				
C(4)	-0.235560	0.051277	-4.593890	0.0000
C(5)	0.117995	0.027474	4.294755	0.0000

(continued)

(continued)

Dependent Variable: RBRENT				
C(6)	-0.094547	0.017127	-5.520379	0.0000
C(7)	0.981603	0.005123	191.6196	0.0000
T-DIST. DOF	5.518280	0.747688	7.380455	0.0000
R-squared	0.006493	Mean dependent var		0.000483
Adjusted R-squared	0.004971	S.D. dependent var		0.027259
S.E. of regression	0.027191	Akaike info criterion		-5.018056
Sum squared resid	0.965596	Schwarz criterion		-4.986417
Log likelihood	3292.318	Hannan-Quinn criter.		-5.006189
Durbin-Watson stat	1.962437			

**b) Yield Series of USDTRY Rate**

Dependent Variable: RUSDTRY				
Sample (adjusted): 1/08/2016 3/12/2021				
Included observations: 1307 after adjustments				
LOG(GARCH) = C(5) + C(6)*ABS(RESID(-1)/@SQRT(GARCH(-1))) + C(7)				
*RESID(-1)/@SQRT(GARCH(-1)) + C(8)*LOG(GARCH(-1))				
Variable	Coefficient	Std. error	z-Statistic	Prob.
C	0.000631	0.000138	4.555766	0.0000
AR(1)	0.093595	0.027041	3.461250	0.0005
AR(2)	-0.029684	0.028529	-1.040480	0.2981
AR(3)	-0.036744	0.030248	-1.214738	0.2245
<i>Variance equation</i>				
C(5)	-0.756705	0.054681	-13.83844	0.0000
C(6)	0.334129	0.020026	16.68454	0.0000
C(7)	0.092904	0.012794	7.261826	0.0000
C(8)	0.947497	0.004955	191.2129	0.0000
R-squared	0.038884	Mean dependent var		0.000694
Adjusted R-squared	0.036671	S.D. dependent var		0.010002
S.E. of regression	0.009817	Akaike info criterion		-6.939553
Sum squared resid	0.125581	Schwarz criterion		-6.907875
Log likelihood	4542.998	Hannan-Quinn criter.		-6.927671
Durbin-Watson stat	1.780821			

**c) Series of Overnight TRY Interbank Rate (IR\_ON)**

Statistically significant ARCH and GARCH models were not found.

**References**

- Akar, C.: Volatilite modellerinin öngörü performansı: ARCH, GARCH ve SWARCH Karşılaştırması. *İşletme Fakültesi Dergisi* **8**(2), 201–217 (2007)
- Apergis, N., Rezitis, A.: Agricultural price volatility spillover effects: the case of Greece. *Eur. Rev. Agric. Econ.* **30**(3), 389–406 (2003)
- Balcombe, K.: The nature and determinants of volatility in agricultural prices: an empirical study from 1962–2008. *Proceedings from FAO Workshop* (2009)
- Bollerslev, T.: Generalized autoregressive conditional heteroskedasticity. *J. Econom.* **31**, 307–327 (1986)
- Brooks, C.: *Introductory Econometrics for Finance*, 2nd edn., p. 384. Cambridge University Press (2008)
- Chiang, S.M., Lin, C.T., Huang, C.M.: The relationships among stocks, bonds and gold: safe haven, hedge or neither? In: *Diversity, Technology, and Innovation for Operational Competitiveness: Proceedings of the 2013 International Conference on Technology Innovation and Industrial Management*, pp. 170–171 (2013)
- Colm, K., Patton, A.J.: Multivariate GARCH modeling of exchange rate volatility transmission in the European monetary system. *Financ. Rev.* **35**(1), 29–48 (2000). <https://doi.org/10.1111/j.1540-6288.2000.tb01405>
- Engle, R.F.: Autoregressive conditional heteroscedasticity with estimates of the variance of United Kingdom inflation. *Econometrica* **50**(4), 987–1007 (1982). <https://doi.org/10.2307/1912773>
- FAO: Price volatility in food and agricultural markets: policy responses. Policy Report prepared by FAO, IFAD, IMF, OECD, UNCTAD, WFP, the World Bank, the WTO, IFPRI, UN HLTF (2011). <https://doi.org/10.1093/ajae/aaq116>
- FAO (2021). <http://www.fao.org/faostat/en/> Accessed 10 May 2021
- Frank, J., Garcia, P.: Bid-ask spreads, volume, and volatility: evidence from livestock markets. *J. Agric. Econ.* **4**, 78–124 (2010)
- Galtier, F.: How to manage food price instability in developing countries? UMR Moisa. Working paper No. 5, pp. 17–18 (2009)
- Gilbert, C., Morgan, C.: Food price volatility. *Philos. Trans. r. Soc. b: Biol. Sci.* **365**(1554), 3023–3034 (2010)
- Hamulczuk, M., Klimkowski, C.: Zmienność cen pszenicy w Unii Europejskiej [Wheat prices volatility in the European Union]. *Zeszyty Naukowe SGGW. Problemy Rolnictwa Światowego* **11**(4), 77–87 (2011)
- Han, D., Nayga, J.: Interrelationship and volatility transmission between grain and oil prices. *J. Agric. Resour. Econ.* **5**(2), 86–99 (2012)
- Huchet-Bourdon, M.: Agricultural commodity price volatility: an overview. *OECD Food, Agriculture and Fisheries Papers*, No. 52, OECD Publishing, Paris, December 2011. <https://doi.org/10.1787/5kg0t00nrthc-en>
- Kapusuzoğlu, A., Liang, X., Ceylan, N.B.: Macroeconomic impacts of global food price shocks on the economy of Turkey. *Agric. Econ.* **64**, 517–525 (2018)
- Karadaş, H.A., Koşaroğlu, Ş.M.: The relationship between agricultural product prices, crude oil prices and ex-change rate: a cointegration analysis for Turkey. *Istanbul Commerce Univ. J. Soc. Sci.* **42**, 515–526 (2020)
- Meyers, W.H., Meyer, S.: Causes and implications of the food price surge. Food and Agricultural Policy Research Institute at University of Missouri, FAPRI-MU Report Series

- (2008). [https://www.researchgate.net/publication/24108951\\_Causes\\_and\\_Implications\\_of\\_the\\_Food\\_Price\\_Surge](https://www.researchgate.net/publication/24108951_Causes_and_Implications_of_the_Food_Price_Surge)
- Mushtaq, K., Ghafoor, A.A., Ahmad, F.: Impact of monetary and macroeconomic factors on wheat prices in Pakistan: implication for food security. *Lahore J. Econ.* **16**(1), 95–110 (2011)
- Nelson, D.: Conditional heteroskedasticity in asset returns: a new approach. *Econometrica* **59**, 347–370 (1991)
- OECD: Evaluation of Agricultural Policy Reforms in Japan, vol. 76. Organization for Economic Co-operation and Development (2009)
- Ott, H.: Fertilizer markets and their interplay with commodity and food prices (2012). <http://ipts.jrc.ec.europa.eu/publications/pub.cfm?id=5059>. Tarım Ürünleri Piyasa Analiz Bülteni (September, 2021), Main Page - İK Tarım Üssü (iktarimussu.com.tr)
- Sarris, A.: Factors affecting recent and future price volatility of food commodities. *Schriften der Gesellschaft für Wirtschafts- und Sozialwissenschaften des Landbaues, e.V.*, vol. 34 (2009)
- Songul, D.: The agricultural subsidy policies practised in European Union and in Turkey (2010)
- Sumner, D.: Recent commodity price movements in historical perspective. *Am. J. Agric. Econ.* **91**(5), 1250–1256 (2009)
- TMEX (2020). <https://www.turib.com.tr/tarihsel-veri>. Accessed 10 May 2021
- Trading Economics: Turkey food inflation (2021). <https://tradingeconomics.com/>. Accessed September 2020–August 2021
- UNCTAD: Overview of the world's commodity exchanges-2007. Study prepared by the UNCTAD secretariat (2007). [https://unctad.org/system/files/official-document/ditcom20084\\_en.pdf](https://unctad.org/system/files/official-document/ditcom20084_en.pdf). Accessed 10 May 2021
- Wang, P., Wang, P.: Equilibrium adjustment, basis risk and risk transmission in spot and forward foreign exchange markets. *Appl. Financ. Econ.* **11**(2), 127–136 (2001). <https://doi.org/10.1080/096031001750071514>
- Wolf, H.: Volatility: definitions and consequences. In: Draft Chapter for: Managing Volatility and Crises: A Practitioner's Guide. IMF, March 2004

# Developing Resilient Financial Wellbeing Among Elderly Citizens in Malaysia



Noraina Mazuin Sapuan  and Mohd Nur Fadzly Basar

**Abstract** The globe is aging, and the number of old people is increasing. Presently, Malaysia is one of the world's aging countries. With long life expectancy, less income, and limited financial knowledge, elderly people in Malaysia are seen as helpless in their old age and drastic measures need to be taken, especially by the government to improve the financial wellbeing and quality of life of this group. Even though a great deal of research has been done on the saving behaviour of the aging population, yet, no research has attempted to model and validate the financial wellbeing of elderly retired people in Malaysia. Thus, this study is done looking at previous literature on how to develop financial and digital literacy among Malaysian elderly to ensure they have adequate financial resources and the ability to adapt to new technology in managing their financial assets. The finding of this study indicated that the “Cognitive-Readiness-Opportunity-Internal Values-Technology Adoption Model”, can become an important model concerning the development of an elderly peoples' financial wellbeing in retirement. The outcome of this study will complement the Malaysian National Strategic Thrust (Improving wellbeing for all) and SDG Agenda 2030 to achieve zero poverty, especially among elderly people.

**Keywords** Aging population · Financial wellbeing · Retirement

## 1 Introduction

Malaysia's aging population is rapidly increasing, with the country expected to become an Ageing Population by 2030. This is due to Malaysians living longer lives (expectancy rates have increased significantly from 49 years in 1950 to 74.9 years in 2020), as well as a lower birth rate which has dropped to 1.1 in 2018 from 5 in 1970 based on data from DOSM (2020).

Malaysia has a high speed of aging pace within 2015–2030 i.e., 15 years which is spur quicker as compared other countries in the world such as France 1864–1979

---

N. M. Sapuan (✉) · M. N. F. Basar

Faculty of Industrial Management, Universiti Malaysia Pahang, 26300 Kuantan, Pahang, Malaysia  
e-mail: [noraina@ump.edu.my](mailto:noraina@ump.edu.my)

i.e., 115 years and Sweden 1887–1972 i.e., 85 years. Malaysia's elderly population is expected to increase to 15% by 2030, above 10% in 2020 (DOSM 2020).

With longer life expectancy, elderly people live more years in retirement and thus are at greater risk of outliving their assets (Sabri and Juen 2014; Mary et al. 2016; Teh and Sapuan 2018). This has caused many elderly people to search for jobs even after retirement age (ILMIA 2019). Gratton and Scott (2017) revealed longer life expectancy has required greater money accumulation to finance their retirement. Among the way to improve the demand for retirement funds, the Central Bank of Malaysia has introduced a Private Retirement Scheme investment (Teh et al. 2020).

In terms of financial investment, elderly people especially in developing countries, have a poor degree of financial literacy. This results in limited savings and bad port-folio choices (Khan et al. 2017; Nga and Yeoh 2018; Lusardi 2019). Financial decision-making also becomes harder for elderly people as their cognitive abilities deteriorate with age, making it more difficult for elderly individuals to select and handle any financial items that may hold or adhere to financial goals. As the shift to digital financial services continues and financial inclusion is increasingly driven by technological innovations, low levels of financial and digital literacy can exacerbate these issues and threaten financial wellbeing in old age, particularly during this pandemic crisis where the majority of financial transactions are conducted online.

Moreover, the current COVID 19 outbreak and the ensuing economic shock are having a significant influence on the personal and financial lives of everyone. This influence may be larger on the older population than on other age groups (OECD 2020). Furthermore, the elderly are more prone to become sick and experience significant consequences from the illness. They are also expected to face harsher lock-down measures in the near future, restricting their ability to live their lives as they did previously and, requiring a profound adjustment especially in financial and health protection aspects. The pandemic and its socioeconomic repercussions are aggravating factors that directly influence the life of elderly people, together with low financial and digital literacy, and possibly declining cognitive abilities.

The studies of saving behaviour and financial literacy among the elderly at the pre-retirement stage have been carried out by many researchers globally and have included Lusardi (2019), Nga and Yeoh (2018), and Jamaludin and Gerrans (2015). However, there are very limited studies evaluating factors that contribute to the financial wellbeing of older people especially with considering technology adoption by the elderly. Thus, this study is done looking at previous literature on how to develop financial and digital literacy among Malaysian elderly to ensure they have adequate financial resources and the ability to adapt to new technology in managing their financial assets.

## 2 Literature Review and Theoretical Model

### 2.1 *Financial Wellness of Elderly Population in Malaysia*

Many Malaysians would not have enough money in retirement and those who are employed tend to use up all of their EPF funds in a short period of time (Jomo 2017). Currently, in facing the bad impact of COVID-19, the government has allowed the EPF contributors to withdraw their money for their survival in facing the hardship period. Based on The Malaysian Reserve (2021), it is estimated that 30% or 1.6 million members of the Employees Provident Fund (EPF) may have withdrawn nearly all of their retirement savings, leaving a minimum required balance of RM100 in the aftermath of various Covid-19 related programs.

As a result, those with a sound knowledge of financial principles will be able to perform better financial planning and accumulate stronger retirement funds (Lusardi and Mitchell 2014; Teh and Sapuan 2018). On the other hand, based on the findings from the Standard & Poor's Report (2016), only 36% of Malaysian individuals are financially literate, which put Malaysia in placed 66th out of 150 nations for financial literacy nations in the world. Moreover, according to Mohd Talib and Abdul Manaf (2017), Zakaria et al. (2017), and Teh et al. (2020), Malaysians had a low level of financial literacy, which makes it difficult for them to make smart investments, especially for retirement preparation.

Hence, there is a need to improve Malaysian people's knowledge and awareness of what they have today and whether or not it will allow them to live happily in their later years. When a person lacks an adequate understanding of retirement planning, they may believe that relying exclusively on their pension after retirement would be sufficient, however older people, according to a Malaysian study, have a poor degree of financial literacy (Chan et al. 2010).

### 2.2 *Retirement Financial Wellbeing*

Financial wellbeing is interchangeable with financial wellness. In order to comprehend financial wellbeing, it must be supported by other related terms such as economic wellbeing, financial wellbeing, and material wellbeing (Joo 2008). Although there is an increasing concern about the term 'financial wellbeing' no consensus on a clear conceptual definition of just what constitutes financial wellness is universally accepted. According to Brügger et al. (2017), financial wellbeing or wellness is defined as the sense of being able to maintain current and expected living standards as well as financial independence. Additionally, Sivaramakrishnan et al. (2017) define financial wellbeing as being financially healthy, happy, and free from worry.

Financial wellbeing has been operationalized differently by different researchers, along with measurements of financial wellness. Garrett and James (2013) and Baek

and DeVaney (2004) suggest three major areas required to analyze an individual's financial wellbeing: solvency (assets are higher than liabilities), liquidity (the efficiency of assets that can be converted easily into cash), and investments (the amount and fraction of an individual's assets that are invested). These ratios can indicate financial health by evaluating the debt and liquidity situation of an individual and their savings behaviour for future life events.

Yet, measuring an individual's financial wellbeing is subjective in nature, given that each individual perceives things differently. In the literature, subjective indicators of financial wellbeing are not as well defined. These subjective measurements are based on a person's opinions of his or her financial situation (Gerrans et al. 2014). The extant literatures show that among all the factors, demographic characteristics are the most widely investigated determinants (Kannadhasan et al. 2016). Notwithstanding, academics have progressively incorporated variables from other disciplines to evidence various integrated models of retirement planning. Based on Hershey et al. (2013) this study will be adapting their study and develop "Cognitive-Readiness-Opportunity-Internal Values-Technology Adoption Model" to understand and design financial wellness of the elderly population for retirement.

**Cognitive Dimension.** The cognitive factors and skills required to plan and to save for retirement and which differentiate the individual from others (Topa et al. 2018). As a result, the individual's knowledge, abilities, intellectual, and psychological biases are likely to have an impact on their capacity to plan and save (Resende and Zeidan 2015). The research investigating financial knowledge and education, which designated the indicators for cognitive, sparked recent interest in financial wellbeing. Eventually, by being financially literate, retirees will be able to process economic information backed by their financial knowledge which could lead towards an informed decision about financial planning and wealth accumulation. Individuals' financial wellbeing can be influenced by the financial decisions they make based on their level of financial literacy (Kamakia et al. 2017). This view is supported by Almenberg and Dreber (2015) who indicated that individuals with an informed financial literacy plan for retirement, present a positive correlation between their wealth and portfolio allocations in later life. While, Adam and Frimpong (2017) found that financial literacy, retirement planning, and family support for financial wellbeing have a significant impact on the wellbeing of retirees. Wachira and Kihui (2012) and Nguya (2015) studied the influence of financial management and abilities on an individual's decision to save for retirement. Their findings revealed that an increase in financial management knowledge and abilities resulted in larger retirement savings. Because of their professional knowledge or abilities, better-educated persons typically have greater ability and alternatives for sustaining their lifestyle habits.

**Readiness Dimension.** Meanwhile, readiness comprises a motivational aspect that initiates the individual's planning and saving activities. It embraces the motivational forces towards retirement goals that influence attitudinal and emotional factors (Hershey et al. 2013). Among the variables influencing the inclination to plan and



save is including the clarity and nature of one's financial objectives, retirement-related concerns and anxieties, perceived societal norms, and self-image (Topa et al. 2018).

Readiness also embraces the financial behaviour of an individual, enabling them to cope with the risks associated with financial planning activities. Tang and Baker (2016) defined financial behaviour as an activity that involves saving outside of retirement accounts, investing in risky assets, retirement savings, and credit management. How an individual manages their finance, is frequently represented by specific behaviours which encompass paying bills on time, saving money for the future, taking into account emergencies and retirement, and avoiding too much debt (Brown and Taylor 2014). Additionally, risky financial behaviours such as impulsive spending, carelessness in using credit cards, and irresponsible debt behaviours negatively influence the financial wellness of emerging adults (Sinha et al. 2018). Thus, predicting elderly financial wellness upon retirement might also depend upon an understanding of readiness based on integrated attitudes and behaviours of the society towards finance matters (Németh and Zsótér 2017). Considering readiness indicators for the elderly might provide insightful dimensions as the elderly face severe challenges and must deal with complex financial decisions at all stages of their life cycle.

**Opportunity Dimension.** The opportunity dimension recognizes the presence of external variables such as environmental facilitators and limitations that impact effective financial tasking. The presence of voluntary retirement saving programs, tax incentives for saving, and financial consultants, among other things, is related to a proclivity to plan and save (Hershey et al. 2013). Furthermore, the opportunity offered by employers to assist workers in helping workers understand and identify opportunities available to them in retirement has a favorable association with their desire to work in retirement (Lunceford 2017). Training and learning programs regarding retirement planning provided by the employers enable employees to develop financial self-efficacy and a post-retirement work plan simultaneously (Topa et al. 2018).

**Internal Values Dimension.** Internal values were used to explain biological, psychological, and social factors and were widely considered when evaluating the retirement planning of an individual. Internal values included gender, personality traits, age, and ethnicity (Kannadhasan et al. 2016). One of the factors, "age", is evidenced as a direct and positive influence on retirement financial planning (Hershey et al. 2010; Adams and Rau 2011). Retirement age determines the duration of a person's working life and is directly related to the years of earned income which enables a person to build up financial wellbeing for the future. Moreover, an increase in the retirement age means an increase in the duration of a person's earning life and, as a consequence, to build up financial wellbeing. Besides, longer employment tenure also increases the type and the number of retirement benefits (Kumar et al. 2019).

The underlying psychological factors explaining financial planning behaviour for the retirement of an individual is still at a very emerging stage (Kumar et al. 2019). Some of the existing literature focuses on various elements of psychological factors such as attitude toward retirement, future time perspective, locus of control, financial

risk tolerance, and retirement goal clarity (Kumar et al. 2019). Researchers across disciplines of psychology have also focused their attention on the impact of the retirement process on post-retirement adjustment and wellbeing (Kerry 2018).

The influence of the retirement process on post-retirement adjustment and wellbeing has aroused the interest of researchers from many fields of psychology (Kerry 2018). The Theory of Planned Behaviour by Ajzen (1991), emphasizes that human behaviour is governed, not only by personal attitudes but also by social pressures and a sense of control. Individuals with a positive outlook towards their objectives have a greater tendency to follow that behaviour (Ajzen 1991). The present study also revealed that attitudes are positively related to behavioural intentions (Rickwood et al. 2017); the stronger the intention to perform a behaviour, the greater the probability that the behaviour will occur (Rameli and Marimuthu 2018). In line with the Theory of Planned Behaviour, past literature identified that the perception of retirement is directly and positively associated with financial planning for retirement (Moorthy et al. 2012).

**Technology Adoption Dimensions.** There is a need to assist elderly people with digital and financial literacy abilities, as well as helping them in making financial decisions. There is a need to support them in keeping up with the speed of change and minimize risk factors that might affect their financial wellbeing (OECD 2020).

The elderly population must also understand when and where to seek expert financial counsel, as well as have the confidence to ask questions, make complaints, and seek advice. Simultaneously, there is a need to improve young generations' financial literacy abilities in order to assist them in making long-term financial goals. Financial education may be delivered through a variety of avenues, such as employer-sponsored training, self-directed online learning, or community classes. Social media may also be used to form online communities that help one another in a number of ways, such as sharing advice and encouraging one another (Tsai et al. 2019).

With the growing digitization of the financial environment, including the digital delivery of financial education, it is particularly important to assist and develop the digital capabilities of elderly people. Families and communities may help to develop such abilities by setting a good example and providing advice. Furthermore, policy-makers and other stakeholders may create efforts that target both financial literacy and digital skills by educating elderly people about the safe use of digital financial services (Ma et al. 2020).

### **2.3 Underpinning Theory**

Hershey et al.'s (2013) "Capacity-Willingness-Opportunity Model" will be used as the foundation of this study. Alongside the Life-Cycle Hypothesis (LCH) of Modigliani and Brumberg (1954), the Theory of Planned Behaviour (TPB) proposed by Ajzen (1991) will also be integrated into the current model.

LCH is an economic theory that pertains to the spending and saving habits of people throughout a lifetime. People are moving from one stage to another in their life cycle, carrying with them what they have earned in the previous stage. The retirement stage is a turning point, faced by every working individual and involves the issues of managing personal and family finances as reflected in the LCH theory. The theory emphasizes that the life-cycle effect of asset accumulation and allocation shapes people's decision-making in savings and consumption across different stages of life (Modigliani and Brumberg 1954). Consequently, in making retirement planning decisions across the life cycle, financial literacy is necessary to help the elderly minimize decision errors that may affect their financial wellbeing.

Hence, individuals with financial knowledge capacity are more confident about their retirement as they understand and have accumulated wealth as a way of preparing for retirement (Mullock and Turcotte 2012; Sabri and Juen 2014). Conversely, financially illiterate individuals tend to overestimate their savings and pension income (Alessie et al. 2011). A combination of awareness, knowledge, skill, attitude and behaviour is essential for sound financial decisions that lead towards achieving individual financial wellbeing (OECD INFE 2011). Additionally, the objective to achieve future financial retirement goals for an individual will motivate them to seek financial information, enhancing their ability to control emotions that can affect their decision-making, and provide assurance in their decision-making and financial management capabilities (Atkinson and Messy 2011).

LCH takes into account that people's preferences for consumption and leisure, as well as risk tolerance levels and other personal characteristics such as age, income, wealth, marital status, household structure, and other socioeconomic conditions, determine the appropriate level of labour provision, savings and optimal exposure to different assets during the various stages of an individual's life (Modigliani and Brumberg 1954). This biopsychosocial dimension could provide significant contributions to the financial wellness of the elderly. Given that the elderly have a unique combination of preferences and characteristics, eventually, they will have a unique labour provision, savings, and asset allocation over time. Retirement planning, therefore, translates into net savings during the active working period of life and the acquisition of financial assets, followed by spending, and the use of returns from accumulated assets at retirement (Hui et al. 2011).

TPB is also a suitable theory related to financial behaviour as it predicts and understands human behaviour in a specific context (Yong et al. 2018a; b). This theory explains the relevance of human behaviour which is guided by three kinds of behavioural intentions: (1) the positive and negative power of attitudes about the target behaviour, (2) subjective norms, and (3) perceived behavioural control (Ajzen 1991). The theory emphasizes that human behaviours are governed, not only by personal attitudes but also by social pressures and a sense of control exerted on the measurement of the willingness dimension.

Senior Technology Exploration, Learning, and Acceptance Model (STELA) is an innovative paradigm that measures the technology exploration and learning process by older individuals in a changing technological environment. The STELA model identifies the link between exploration and learning difficulties in older peoples'

technology-learning processes (Tsai et al. 2019). According to the STELA model, attitudes toward learning, the availability of training and assistance, exploration, and previous problems with learning can all predict technology acceptance. During computer training classes, older individuals not only learn how to use the Internet but also get help with technical difficulties (Ma et al. 2020).

### 3 Challenges of Retirement Savings for Elderly Wellbeing

For many individuals, the ability to retire with an adequate source of guaranteed income for life is considered a top priority. According to Rappaport (2015), retirement wellbeing is the result of retiring at an appropriate age, saving enough, and managing risks appropriately. Yet, the multifaceted nature of financial wellbeing has hampered previous research in finding a comprehensive, yet comprehensible, measure to express this concept. Woodyard (2013) measured financial wellbeing based on four measurements: financial satisfaction, financial behaviour, financial perception, and objective measures. While Joo (2008) discovered that no specific measure of financial wellbeing has been created, he did offer four criteria for identifying those who are financially well-adjusted. The criteria are contentment with one's financial condition, desired objective status (family income, assets, debt), positive financial attitudes (being on top of things), and healthy financial conduct (consultation, planning). Zulfikar and Bilal (2016) focused on financial wellbeing. They indicated that it is closely related to the financial knowledge, personal traits, and attitudes of the individual. They suggest that superior ability to absorb the financial shocks is an indication of an individual's positive financial wellbeing, together with the ability to cope with a level of financial stress.

In Budget 2019, the government decreased the contribution of social security, in terms of the statutory contribution rate for post-retirees, to 4% from 6% (2018). This policy is contrary to the practices in developed countries such as South Korea and Japan where their governments maintain spending on social security at a high rate (South Korea, 8.41% (2018 & 2019) and Japan, 29.2% (2018 & 2019) (Trading Economics 2019a, b; Korean Workers Compensation and Welfare Service 2019). The Malaysian government's policy will have a long-term effect on the income of retired people.

In Malaysia, the Employees Provident Fund (EPF) is one of the schemes designed to protect the rights of employees in relation to their retirement savings. The current study shows that the EPF for retired employees is insufficient to cover their expenses during the retirement period (Nga and Yeoh 2018; Teh and Sapuan 2018). Statistics show that 68% of EPF members in Malaysia, at the age of 55, have less than RM50,000, which many would fully consume within five years of commencing retirement (Shargar 2016 as cited in Nga and Yeoh 2018). In recent years, this situation is due to the pre-retirement withdrawals from the EPFs to support their ordinary day-to-day needs and has resulted in a rapid depletion of retirement funds and declining dividend rates of their EPF investment portfolio (Hassan and Othman 2018). Currently,

as a temporary measure to help EPF members cope with the economic impact of the COVID-19 pandemic, the government has allowed EPF members to withdraw their mandatory retirement savings based on certain specific criteria, which will undoubtedly have a long-term impact on their financial wellbeing during retirement (EPF 2021).

With the increase in the aging population in Malaysia (15% by the year 2030) and the concerns about financial stability in retirement, this research will provide in-depth information for the government. The findings of this research can assist the government with future policymaking, especially when preparing the nation's yearly budget and also for the development of the latest Malaysia Economic Planning.

## 4 Conclusion

The studies of saving behaviour and financial literacy among the elderly at the pre-retirement stage have been carried out by many researchers globally in developed countries and developing countries. However, there are very limited studies evaluating factors that contribute to the financial wellbeing of retired (elderly) people especially with the changes in the financial landscape especially due to technological advancements in the financial sector, the effect of the pandemic crisis, and declining in the elderly cognitive abilities. Hence, strengthening digital and financial literacy and provide everyone with practical skills and knowledge to manage the financial assets can help to increase the vulnerability of elderly people. Thus, this study is done with the motivation to learn the development of financial and digital literacy among senior citizens in Malaysia. In the future, it is recommended, for the designing of a retirement financial wellness model that captures the indicators of financial wellbeing to ensure they have adequate financial resources to allow them to live comfortably and independently during their retirement.

**Acknowledgements** The authors would like to thank the grant provided by Universiti Malaysia Pahang, Malaysia for the funding of this research under UMP Internal Fundamental Research Grant; Grant Reference No: RDU200306.

## References

- Adam, A.M., Frimpong, S.: Financial literacy and financial planning: implication for financial wellbeing of retirees. *Bus. Econ. Horiz.* **2**, 224–236 (2017)
- Adams, G.A., Rau, B.L.: Putting off tomorrow to do what you want today: planning for retirement. *Am. Psychol.* **66**(3), 180–192 (2011)
- Ajzen, I.: The theory of planned behavior. *Organ. Behav. Hum. Decis. Process.* **50**(2), 179–211 (1991)

- Alessie, R.J., Van Rooij, M., Lusardi, A.: Financial literacy, retirement preparation and pension expectations in the Netherlands (Working Paper No. w17109) (2011). <http://www.nber.org/papers/w17109>. Accessed 31 Aug 2020
- Almenberg, J., Dreber, A.: Gender, stock market participation and financial literacy. *Econ. Lett.* **137**, 140–142 (2015). <https://doi.org/10.1016/j.econlet.2015.10.009>
- Atkinson, A., Messy, F.A.: Assessing financial literacy in 12 countries: an OECD/INFE international pilot exercise. *J. Pension Econ. Finance* **10**(4), 657–665 (2011)
- Baek, E., DeVaney, S.A.: Assessing the baby boomers' financial wellness using financial ratios and a subjective measure. *Fam. Consum. Sci. Res. J.* **32**(4), 321–348 (2004)
- Brown, S., Taylor, K.: Household finances and the "big five" personality traits. *J. Econ. Psychol.* **45**, 197–212 (2014)
- Brüggen, E.C., Hogueve, J., Holmlund, M., Kabadayi, S., Löfgren, M.: Financial wellbeing: a conceptualization and research agenda. *J. Bus. Res.* **79**, 228–237 (2017)
- Chan, Y.F., Masud, J., Hamid, T., Paim, L.: Financial wellbeing of older Peninsular Malaysians: a gender comparison. *Asian Soc. Sci.* **6**(3), 58–71 (2010)
- DOSM: Statistic data, Department of Statistics Malaysia. <https://www.dosm.gov.my/>. Accessed 1 Mar 2020
- EPF: EPF Opens Applications for i-Citra Withdrawal. <https://www.kwsp.gov.my/-/epf-opens-applications-for-i-citra-withdrawal>. Accessed 18 Aug 2021
- Garrett, S., James, R.N., III.: Financial ratios and perceived household financial satisfaction. *J. Financ. Ther.* **4**, 39–62 (2013)
- Gerrans, P., Speelman, C., Campitelli, G.: The relationship between personal financial wellness and financial wellbeing: a structural equation modelling approach. *J. Family Econ. Issues* **35**, 145–160 (2014)
- Gratton, L., Scott, A.: The corporate implications of longer lives. *MIT Sloan Manag. Rev.* **58**(3), 63–70 (2017). <https://www.proquest.com/docview/1885859508>
- Hassan, S., Othman, Z.: Forecasting on the long-term sustainability of the employees' provident fund in Malaysia via the Box-Jenkins' ARIMA model. *Bus. Econ. Horiz.* **14**(1), 43–53 (2018)
- Hershey, D.A., Henkens, K., Van Dalen, H.P.: Aging and financial planning for retirement: interdisciplinary influences viewed through a cross-cultural lens. *Int. J. Aging Human Dev.* **70**(1), 1–38 (2010)
- Hershey, D.A., Jacobs-Lawson, J.M., Austin, J.T.: Effective financial planning for retirement. In: Wang, M. (ed.) *The Oxford Handbook of Retirement*, pp. 402–430. Oxford University Press, Oxford (2013)
- Hui, T.S., Vincent, C., Woolley, F.: Women's economic empowerment and retirement savings decisions. Social Research and Demonstration Corporation (2011). [http://www.srdc.org/uploads/women\\_empowerment\\_en.pdf](http://www.srdc.org/uploads/women_empowerment_en.pdf). Accessed 1 Mar 2019
- ILMIA (Institute of Labour Market Information and Analysis): *Fostering the Continued Active Participation of Senior Citizens in Society: What are the Challenges?* (2019). [https://www.ilmia.gov.my/ebook/article/ILMIA\\_ArtcFREP3\\_2019\\_WE.pdf](https://www.ilmia.gov.my/ebook/article/ILMIA_ArtcFREP3_2019_WE.pdf). Accessed 20 Aug 2021
- Jamaludin, N., Gerrans, P.: Retirement savings investment decisions: evidence from Malaysia. *J. Asia Pac. Econ.* **20**(4), 644–657 (2015)
- Jomo, K.S.: Most Malaysians Can't Afford to Retire Because They Don't Have Enough Savings (2017). <http://www.mtuc.org.my/most-malaysians-cant-afford-to-retire-because-they-dont-have-enough-savings/>. Accessed 31 Aug 2020
- Joo, S.: Personal financial wellness. In: Xiao, J.J. (eds.) *Handbook of Consumer Finance Research*. Springer, New York (2008)
- Kamakia, M.G., Mwangi, C.I., Mwangi, M.: Financial literacy and financial wellbeing of public sector wellbeing: a critical literature review. *Eur. Sci. J.* **13**(16), 233–249 (2017)
- Kannadhasan, M., Aramvalarthan, S., Mitra, S.K., Goyal, V.: Relationship between biopsychosocial factors and financial risk tolerance: an empirical study. *J. Decis. Makers* **41**(2), 117–131 (2016)
- Kerry, M.J.: Psychological antecedents of retirement planning: a systematic review. *Front. Psychol.* **9**, 1870 (2018)

- Khan, N., Khan, S., Leng, O.T.S., Tan, B.C., Vergara, R.G.: Explore the factors that influence elderly poverty. *J. Southeast Asian Res.* **2017**, 1–13 (2017)
- Korean Workers Compensation and Welfare Service. South Korea Social Security Rate for Employees. <https://www.kcomwel.or.kr/eng/index.jsp>. Accessed 31 Aug 2020
- Kumar, S., Tomar, S., Verma, D.: Women's financial planning for retirement: systematic literature review and future research agenda. *Int. J. Bank Mark.* **37**(1), 120–141 (2019)
- Lunceford, G.M.: What is retirement in the 21st century? Dissertation, Case Western Reserve University, Cleveland, OH (2017)
- Lusardi, A.: Financial literacy and the need for financial education: evidence and implications. *Lusardi Swiss J. Econ. Stat.* **155**(1), 1–8 (2019)
- Lusardi, A., Mitchell, O.S.: The economic importance of financial literacy: theory and evidence. *J. Econ. Lit.* **52**(1), 5–44 (2014)
- Ma, Q., Chan, A., Teh, P.L.: Bridging the digital divide for older adults via observational training: effects of model identity from a generational perspective. *Sustainability* **12**, 4555 (2020). <https://doi.org/10.3390/su12114555>
- Mary, P., Ming, L.M., Lee, C.L.: The resources and life satisfaction of retired women in Malaysia. *Asia Pac. J. Adv. Bus. Soc. Stud.* **2**(1), 212–221 (2016)
- Modigliani, F., Brumberg, R.: Utility analysis and the consumption function: an interpretation of cross-section data. In: Kurihara, K.K. (ed.) *Post Keynesian Economics*, pp. 388–436. Rutgers University Press, New Brunswick (1954)
- Moorthy, M.K., et al.: A study on the retirement planning behavior of working individuals in Malaysia. *Int. J. Acad. Res. Econ. Manag. Sci.* **1**(2), 54–72 (2012)
- Mohd Talib, N.F., Abdul Manaf, H.: Attitude towards retirement planning behaviour among employee's. *J. Bus. Manag.* **1**(1), 15–21 (2017)
- Mullock, K., Turcotte, J.: Financial literacy and retirement saving. Working Paper, 1, Department of Finance, Canada (2012)
- Németh, E., Zsótér, B.: Personality, attitude and behavioral components of financial literacy: a comparative analysis. *J. Econ. Behav. Stud.* **9**(2), 46–57 (2017). <https://doi.org/10.22610/jeb.v9i2.1649>
- Nga, K.H., Yeoh, K.K.: An exploratory model on retirement savings behaviour: a Malaysian study. *Int. J. Bus. Soc.* **19**(3), 637–659 (2018)
- Nguya, M.M.: Evaluation of the relationship between financial literacy and retirement planning (2015)
- OECD INFE: Measuring Financial Literacy: Core Questionnaire in Measuring Financial Literacy: Questionnaire and Guidance Notes for conducting an Internationally Comparable Survey of Financial literacy. Paris (2011)
- OECD: Supporting the financial resilience of citizens throughout the COVID-19 crisis. [https://www.oecd-ilibrary.org/fr/industry-and-services/supporting-the-financial-resilience-of-citizens-throughout-the-covid-19-crisis\\_fa710f2b-en](https://www.oecd-ilibrary.org/fr/industry-and-services/supporting-the-financial-resilience-of-citizens-throughout-the-covid-19-crisis_fa710f2b-en). Accessed 31 Aug 2020
- Rappaport, A.M.: Impact of long-term care on retirement wellness. *Benefits Q.* **31**(2), 31–44 (2015)
- Rameli, R., Marimuthu, M.: A conceptual review on the effect of attitudes towards retirement on saving intentions and retirement planning behavior. In: *SHS Web of Conferences*, vol. 56, p. 02005 (2018)
- Resende, M., Zeidan, R.: Psychological biases and economic expectations: evidence on industry experts. *J. Neurosci. Psychol. Econ.* **8**(3), 160–172 (2015). <https://doi.org/10.1037/npe0000043>
- Rickwood, C.M., Johnson, L.W., Worthington, S., White, L.: Customer intention to save for retirement using a professional financial services planner. *Financ. Plann. Res. J.* **3**, 47–67 (2017)
- Sabri, M.F., Juen, T.T.: The influence of financial literacy, saving behaviour, and financial management on retirement confidence among women working in the Malaysian public sector. *Asian Soc. Sci.* **10**(14), 40–51 (2014)
- Shargar, L.K.: Malaysians not saving enough for retirement. *The Star Online* (2016). <http://www.thestar.com.my/news/nation/2016/05/04/malaysians-not-saving-enough-for-retirement/>. Accessed 31 Aug 2020



- Sinha, G., Tan, K., Min, Z.: Patterns of financial attributes and behaviors of emerging adults in the United States. *Child. Youth Serv. Rev.* **93**(C), 178–185 (2018)
- Sivaramakrishnan, S., Srivastava, M., Rastogi, A.: Attitudinal factors, financial literacy, and stock market participation. *Int. J. Bank Mark.* **35**(5), 818–841 (2017). <https://doi.org/10.1108/IJBM-01-2016-0012>
- Tang, N., Baker, A.: Self-esteem, financial knowledge and financial behaviour. *J. Econ. Psychol.* **54**, 164–176 (2016)
- Teh, L.T., Sapuan, N.M., Law, S.H.: Performance of private retirement scheme in Malaysia. *Int. J. Psychosoc. Rehabil.* **24**(06), 10813–10830 (2020)
- Teh, L.T., Sapuan, N.M.: Retirement planning in Malaysia: issues and challenges to achieve sustainable lifestyle. *Turk. Online J. Des. Art Commun. TOJDAC*, 1222–1229 (2018)
- Topa, G., Lunceford, G., Boyatzis, R.E.: Financial planning for retirement: a psychosocial perspective. *Front. Psychol.* **8**, 2338 (2018)
- Trading Economics: South Korea Social Security Rate for Employees (2019a). <https://tradingeconomics.com/south-korea/social-security-rate-for-employees>. Accessed 31 Aug 2020
- Trading Economics: Japan Social Security Rate (2019b). <https://tradingeconomics.com/japan/social-security-rate>. Accessed 31 Aug 2020
- Tsai, H.-Y.S., Rikard, R.V., Cotten, S.R., Shillair, R.: Senior technology exploration, learning, and acceptance (STELA) model: from exploration to use a longitudinal randomized controlled trial. *Educ. Gerontol.* **45**, 728–743 (2019)
- Wachira, M.I., Kihui, E.N.: Impact of financial literacy on access to financial services in Kenya. *Int. J. Bus. Soc. Sci.* **3**(19), 42–50 (2012). [http://ijbssnet.com/journals/Vol\\_3\\_No\\_19\\_October\\_2012/5.pdf](http://ijbssnet.com/journals/Vol_3_No_19_October_2012/5.pdf)
- Woodyard, A.: Measuring financial wellness. *Consum. Interes. Annu.* **59**, 1–6 (2013)
- Yong, C.C., Yew, S.Y., Wee, C.K.: Financial knowledge, attitude and behaviour of young working adults in Malaysia. *Inst. Econ* **10**(4), 21–48 (2018a)
- Yong, C.C., Yew, S.Y., Wee, C.K.: Financial knowledge, attitude and behaviour of young working adults in Malaysia. *Inst. Econ.* **10**(4) (2018b)
- Zakaria, Z., Mohamad Nor, S.M., Ismail, M.R.: Financial literacy and risk tolerance towards saving and investment: a case study in Malaysia. *Int. J. Econ. Financ. Issues* **7**(4), 507–514 (2017)
- Zulfikar, M., Bilal, M.: Financial wellbeing is the goal of financial literacy. *Res. J. Finance Account.* **7**(11), 94–103 (2016)



# Challenges of Family Co-operative Sustainability: An Autoethnographic Narrative



Anis Amira Ab Rahman, Nor Hafiza Othman, and Noor Raihani Zainol

**Abstract** This article focuses on my experience of being a part of family co-operative members. I use the method of autoethnography to contribute to broader academic debates on challenges of family co-operative sustainability as a scarce research area in entrepreneurship study especially in the branch of social entrepreneurship. I will present my personal narrative about my experience of struggling in maintaining the existence of the co-operative. Autoethnography, as an autobiographical research genre, indicates multiple layers of consciousness, connecting the personal to cultural. In this research I am both the research participants and the researcher. My article aims to reveal how the family co-operative dynamic in sustaining their existence in the market. I begin with my personal narrative. I then problematize conceptions about the challenges and discuss them from the point of view of my own narrative and from episodes and ethnography in the literature. Finally, I reflect on family co-operative board can more effectively lead and manage the challenges for the co-operative sustainability.

**Keywords** Autoethnography · Family co-operative · Narrative · Challenges

## 1 Introduction

My expertise is regards to entrepreneurship. I have been trained theoretically and practically in the field of entrepreneurship. One of entrepreneurship body of knowledge branch is social entrepreneurship and co-operative study is part of it. Social entrepreneurship is the study that based on the concept of social and commercial mission. The meaning and understanding of social entrepreneurship and social enterprise is interchangeable. In Malaysia, there are two types of perspective on social entrepreneurship and social enterprise. One perspective looking it as the entity of organization and the other perspective, looking social entrepreneurship and social

---

A. A. A. Rahman · N. H. Othman (✉) · N. R. Zainol  
Faculty of Entrepreneurship and Business, Universiti Malaysia Kelantan, Kota Bharu, Malaysia  
e-mail: [hafiza.o@umk.edu.my](mailto:hafiza.o@umk.edu.my)

Angkasa-UMK Research Academy, Kota Bharu, Malaysia

enterprise as a concept. The unclear understanding and acceptable meaning created an inharmonic situation. For me as believing in idealist ontology, accepts the multiple meaning. However, to be understandable, the context must be clear so that can infer the meaning of social entrepreneurship or social enterprise.

The study that regards to co-operative has been executed all over the world including Malaysia. There are many dimensions that been utilized to study co-operative and to understand the co-operative phenomenon. Hence, most of the study looking at the economic side on how to increase productivity and reduce cost. Agriculture is the industry that are most being study in the area of co-operative. The new trend of study in co-operative is regards to digitalize co-operative. This new trend is in line with the current situation of covid19 that force the digitalization to be emerged faster than expected. I do witnesses on how the marginalized group are forced to use internet and immersed in GIG economy to survive. In fact, me myself as baby boomers, like it or not have to learn the technology especially digital application to smoothen my education and business journey.

In Malaysia, there are many types of co-operatives such as a standard structure co-operative, school co-operative and family co-operative. Each of co-operative have their own promise to the members and projected through the co-operative vision and mission. The organization and management structure of co-operative is mandated and govern by the Malaysian Co-operative societies Commission. The co-operative has to follow all the rules and regulation and reported to the commission annually. The financial auditor also being provided by this commission. All the act is mean to protect the interest of the co-operative members.

## 2 My Autoethnography

I was born in the family that involves in business. My great grandfather started as transporter who transport people across the river. My father follows his steps in business but in different industry which he has ventured into the construction world. He started with commercial purpose and added a business that involve social purpose. He saw that his relative is poor and he want to help them by creating a job through venturing in co-operative world. So, he combines the well-educated and wealthy group of his family with the poor group of his family in one place. The platform is the family co-operative public limited. So, he stated to pool all the names and create a family business co-operative with the members agreement.

I am one of the members that well-educated that have intention to help the poor group of our family members. I have been involved as a member in family co-operative in about seven years. At first stage, the family co-operative tried to execute retail industry but the mission is unaccomplished. Then the business activities move to agriculture where we plan to breed goats and sell it to the market. This mission is also unaccomplished. The next business activity planned is to venture into the asset investment but one of the skills members that regard to asset investment withdraw from the business activity. Again, this mission also not accomplish.

Along the journey, my father got stroke and unable to run the family co-operative for almost two years. The family co-operative management is unattended. We are not following the rules and regulation stated and we intent to close the organization. However, my father persists to proceed with his social agenda that is to help the family group of poor people so they have income and their family is protected from the economic and social challenges such as drug and social issues. This family co-operative is situated in the village and the members of the village is my father family members. The situation in this village is not economically and socially stable. I can see that his intention to help people who is his relative give him motivation to move forward with limited ability because of stroke he encountered.

The struggle that I see in the family co-operative is the issues of sustainability. It is hard to maintain the organization with the limited resources. It is hard to maintain the organization without the leadership that want to see the benefit of the members is served. Times flies and at the end of the day someone from the family has to take responsibility to lead and grow the family co-operative for the benefit of marginalized group of the family members. Based on my experience, I can see that the challenges of family co-operative sustainability relate to the leadership, team and succession issues. The narrative below reveals the issues and has been unfolded within the episode of 'The dictate leader', 'The one-man shows', and 'the transition leadership'.

### **3 Challenges of Family Co-operative Sustainability Narrative**

#### ***3.1 The Dictate Leader***

At the beginning of new venture, I saw my father with the help of my mother, together they select the members of the family co-operative. They sat at the table, discuss the criteria for member eligibility for days. My father asked his well-educated and wealthy children to join as a family co-operative member and without refuse they all agree with my father suggestion. From the culture point of view, my father always dictates us to do what he thinks best for us without any detail explanation. And we as his children has to follow without asking. The other members of the family that belongs to the poor group also agree with my father suggestion and just follow what my father dictate or order them. The group members share has been paid by my father as a donation to the poor. My father knew that this group of poor did not have enough money and do not know how to improve their social economic condition.

I think the act of my father is necessary since his children do not know anything about the co-operative and the benefit of venture to the co-operative dimension. My father had gone through several courses to understand the management of family co-operative as well as the financial benefit that has been provided by the government to enhance the co-operative and indirectly strengthen the socio economic of the co-operative members. Furthermore, the family poor group believe and trust my father

without questions since they knew that my father has a kind heart that always want to help the society especially his family members.

The dictate leader shows the interwoven of power and respect. My father is the informal leader in his family kinship. He is the place when family that have trouble come to seek helps and my father will solve their problem. So, they respect my father very much. Informal leaders are approachable and exhibit professional competence, expertise, experience, and accountability (Heard et al. 2018). As informal leader, he has the power to dictate and the followers followed because of respect. The culture of father as a head of the family and no questions ask in traditional family lead to accept without hesitation from the well-educated and wealthy children. Furthermore, my sibling and I respect our father because he knows business very well and he raised us well. Hence, the authority as a father also influences me and my sibling to follow order from my father. In sum, the act of dictate has successful creating a venture of family co-operative and maintain it existence in the market.

### 3.2 *The One Man Shows*

At the middle of the new venture, I saw my father take good care of the family co-operative with his soul to ensure the success of the family co-operative. He has plan everything and try to execute his planning. Unfortunately, he did not have full support from the family member due to time and knowledge constrains. Me and my sibling who partly well-educated and some are wealthy do not have time to spend for helping my father executed his dream. Additionally, his group of poor family willing to help but not enough knowledge in managing family co-operative. During this crisis, my father had stroke and had to rest for 2 years to gain healthy again. The activity of co-operative became slower because of my father condition and the intention to close the family co-operative came into place since nobody able to take responsibility.

I think my father have to act like that in that particular moment because if he not started and maintain the organization, even with the capacity of one man, he strived to maintain the family co-operative in the market. Teamwork as working together are not happened in that particular of time because of lack of followers' capabilities. However, teamwork on motivating each other members exist between the family co-operative team dynamic. The team's leader should understand that there is a discipline to studying the team dynamics and work to identify blind spots and operate as an effective team (Mary 2007). Understanding the dynamics of a group might help you predict how effective it will be.

The team dynamic between the leader and followers indicated the value of trust. Trust is important to be built team dynamic to archive vision and mission of the family co-operative. The team dynamic, even not being portray by the capabilities of working together, has shown the team dynamic of supporting each other through soul and sprit movement. Trust is important as foundation of team dynamic. Trust helps team to achieve organization mission with limited resources. In sum, the act of

one man show has successful creating a venture of family co-operative and maintain it existence in the market.

### ***3.3 The Transition Leadership***

Currently, my family co-operative still exists and being recognize by Malaysia Co-operative Societies Commission. My father as the family co-operative founders, getting old and do not have the capacity to lead sorely anymore. There is a dilemma on who should take over the family co-operative. At the first place, my father asked my second youngest brother to take over the responsibility, but my brother choose to continue his business in urban area and not willing to stay at the village to help the family poor group. I am my father first daughter and leave with him in the village. I am the one who helped to manage the family co-operative money for the financial auditing purposes. Slowly but surely my father wants me to take care of this family co-operative.

The transition of leadership is quite challenging. I have to manage the money and important documents that required by the law. The culture of not keeping the proper documentation especially that relates to financial really test my persistence and my patient. My father in the other hand told me to plan and manage also lead the co-operative but at the same time he interferes and do whatever he wanted to do without communication with me. I felt frustrated and feeling that my father not trusted in my capabilities. However, because of his health condition he was not able to interfere with the management of family co-operative.

The transition stories indicates that openness and communication are the key for tolerance and strive for the mission of the family co-operative. To attain such ambitious goals, openness remains the best strategy (McAndrew 2010). So, the value of openness will create a harmony social environment within the family co-operative realm. I am open when my father wanted to execute his planning that in my opinion is not a viable project. My father reluctant to change but when I explain with evidence my new plan and he approved it because of the details and the reasoning that I had communicate. In sum, the act of the transition leadership has successful maintaining a venture of family co-operative in the market through being openness and excellent communication.

## **4 Data in My Autoethnography**

I have chosen qualitative research method to get the information from the informants. This study utilizes the idealist ontology and constructivist epistemology. The strategy employs in this research is autoethnography. The data sources are the participant observation field notes and conversation interview besides documents are the data gathered for this autoethnography methodology. Autoethnography is a method

of research and writing that aims to explain and analyse personal experience (auto) in order to have a better understanding of cultural experience (ethno) (Jones 2005). Traditionally, data for autoethnography is arise from interview, participants observation, documents, artifact analysis and research diaries (Morse and Richards 2002; Duncan 2004). This study started in June 2019 till the end of June 2021 and the data collected through participant observation. Six informants had been involved utilizing conversation interview. The founder, the management team and the member of family co-operative are the one who give respond to the family co-operative. The data was analyzed using thematic analysis.

## 5 Lesson Learns and Conclusion

To sustain an organization such as family co-operative, is the challenge that the founder or successor and also the board members to encounter especially in this current situation. I also part of the actors in this phenomenon has felt the impact. Especially, I am the active member that take charge of this family co-operative currently. The disruptive of industrial revolution 4.0 and the change of economic landscape due to COVID19 has tremendously affect the practices in this family co-operative business. The impact has changed our family co-operative culture. This macro environment is not only elements that influence the sustainability of family co-operative but also the micro environment which is also known as internal environments. The experience of the participants and the written document from the participant perspective is still not well documented (Richards 2008a, b). The experience and the reflection are two important things in autoethnography (e.g.: Pensoneau-Conway et al. 2017). The reflection that I would like to share can be divided into three main issues.

Firstly, the power and respect are very important in creating a new venture of family co-operative. The family co-operative leadership team has to inculcate the value of respect in their culture and understand the roles of informal leaders in the society since this informal leader have great influence on their followers. However, respect is not enough to ensure the sustainability of the family co-operative business. Founder and the board member should leverage the potential of its members regardless they are belonging to well-educated and wealthy group or the poor group. At the first place, the founder should dictate the potential group of well-educated a wealthy member to be appointed as board members. The well-educated member can be leveraged for the co-operative business strategy purposes. While the wealthy members can contribute to the advancement of working capital to make ball rolling. The poor group can be trained to be part of the business activity at the operation level. In sum, without the elements of power and respect, the organization such as family co-operative that contain of demographic diversity will struggle to maintain and sustain in the market place.

Secondly, team dynamic and the value of trust are very important to achieve the family co-operative vision and mission especially at the early growth stage. The one

man shows kind of thing can be acceptable at the early stage of venture creation. The family co-operative team dynamic that molded based on trust is not enough at early-stage growth. Founder and board member should inculcate the culture of inclusive workplace based on the value of trust. Inclusive workplace is important because the sense of belonging helps the diversity of people to thrive. Inculcating this inclusive culture will increase team members and workers commitment in achieving family co-operative vision and mission. The members in the organization work with pleasant emotions hence improve their health, well-being and productivity. The perception of discrimination and inequality among the marginalize group can be reduced. In sum, without the elements of team dynamic that contain inclusive workplace culture that based on trust, the organization such as family co-operative that contain of demographic diversity will struggle to maintain and sustain in the market place.

Lastly, the openness and communication are important to ensure the smooth transition of new generation leadership for family co-operative growth. Generation gaps is the main issue that has to be encountered during the process of leadership transition. The founders as first generation of family co-operative belong to an orthodox generation that have huge resistance to change. They had struggle to archive their victory and they think that their culture is the best formulas to succeed. They are obsessed with internal environment and forget about the force of external environment. Therefore, it is necessary to second generation of family co-operative to communicate dearly with first generation to change the mindset and aware with current trend of external environment that have huge impact on the organizational culture. The second generation of family co-operative have to be transparent and show the evidence of the impact that happening in the current situation. The second generation also need to show the documented strategy to be executed for the survival of the family co-operative. In sum, without the elements of openness and transparent communication, the organization such as family co-operative that contain of demographic diversity will struggle to maintain and sustain in the market place.

To conclude, the challenges that encounter by family co-operative from the early stage of venture until early stage of growth is varies. The landscape of internal and external factors that influence the organizational dynamic that contribute to the sustainability of family co-operative are also changed constantly. Hold on to the respect, trust and openness value will helps to strengthening the organizational culture. As a research participant, I hope that I will use this reflection to change the culture of my family co-operative and strive for the sustainability that not only contribute internally but also able to contribute to the world sustainability development.

## References

- Duncan, M.: Autoethnography: critical appreciation of an emerging art. *Int. J. Qual. Meth.* **3**(4), 28–39 (2004)




- Heard, C.P., Scott, J., McGinn, T., Van Der Kamp, E., Yahia, A.: Informal leadership in the clinical setting: occupational therapist perspectives. *Open J. Occup. Ther.* **6**(2), 1–13 (2018)
- Jones, H.S.: Autoethnography: making the personal political. In: Denzin, N.K., Lincoln, Y.S. (eds.) *Handbook of Qualitative Research*, pp.763–791. Sage, Thousand Oaks (2005)
- McAndrew, P.: Defining openness: updating the concept of “open” for a connected world. *J. Interact. Media Educ.* **1**(2), 1–13 (2010)
- Mary, J.G.: Team Formation and Development – Team Dynamics (2007). <http://ezinearticles.com/?Team-Formation-and-Development—Team-Dynamics&id=426059>
- Morse, J.M., Richards, L.: *Readme First for a User’s Guide to Qualitative Methods*. Sage, Thousand Oaks (2002)
- Pensoneau-Conway, S.L., Adams, T.E., Bolen, D.M.: *Doing Autoethnography*. Sense Publishers, Rotterdam (2017)
- Richards, J.C.: *Teaching Listening and Speaking From Theory to Practice*. Cambridge University Press, New York (2008a)
- Richards, R.: Writing the othered self: autoethnography and the problem of objectification in writing about illness and disability. *Qual. Health Res.* **18**(12), 1717–1728 (2008)



# **Innovation of Islamic Economics, Finance and Marketing**

# Online Banking of Islamic Banks: The Customer's Perceptions in Kelantan



Mohd Zulkifli Muhammad , Farah Hanan Muhamad ,  
Caturida Meiwanto Doktoralina, Dzulkifli Mukhtar,  
Mohd Fahmi Ghazali , Muhammad Khalilur Rahman,  
and Noormariana Mohd Din

**Abstract** This paper focuses on problems associated with the usage of internet banking and its privacy and security in the Islamic banks in area of Kota Bharu, a state capital of Kelantan which are attributed to the perspective, decision and suggestions from customers for possible actions that could be taken to overcome the problem. This study is conducted utilizing qualitative methods to ensure the data analyzed through a reliable software package of ATLAS.ti. The data employed were drawn from interviews and documents analysis. Interview's data collected from online banking users in Kota Bharu, Kelantan. The contents and textual analyses also used to achieve this purpose. Researchers concluded that everybody now ends up making online payment transactions by using the technology at their fingertips. Researchers find perception factor to be crucially significant and play a key role in determining whether e-banking adherents are confident and content with the privacy and security of online banking and whether perceptions affect their choice of e-banking. To avoid problems concerning privacy and security, awareness is an essential element. Trusts also influence decision-making and perception in online banking access. The implication of

---

M. Z. Muhammad (✉) · F. H. Muhamad · D. Mukhtar · M. K. Rahman · N. M. Din  
Universiti Malaysia Kelantan, Jalan Pengkalal Chepa, 16100 Kota Bharu, Kelantan, Malaysia  
e-mail: [zulkifli.m@umk.edu.my](mailto:zulkifli.m@umk.edu.my)

F. H. Muhamad  
e-mail: [farahhanan@umk.edu.my](mailto:farahhanan@umk.edu.my)

D. Mukhtar  
e-mail: [dzulkifli@umk.edu.my](mailto:dzulkifli@umk.edu.my)

M. K. Rahman  
e-mail: [khalilur.r@umk.edu.my](mailto:khalilur.r@umk.edu.my)

N. M. Din  
e-mail: [mariana.md@umk.edu.my](mailto:mariana.md@umk.edu.my)

C. M. Doktoralina  
Universitas Mercu Buana, Kembangan Jakarta 11650, Indonesia  
e-mail: [caturida\\_meiwanto\\_drm@mercubuana.ac.id](mailto:caturida_meiwanto_drm@mercubuana.ac.id)

M. F. Ghazali  
Universiti Kebangsaan Malaysia, 43600 Bangi, Selangor, Malaysia  
e-mail: [fahmi@ukm.edu.my](mailto:fahmi@ukm.edu.my)

this study is that privacy and security are critical aspects in Islamic banking operation, and Islamic banking should take proactive measures to ensure that privacy and security in internet banking are at an optimal level.

**Keywords** Online banking · Privacy and security · Islamic banking · Kota Bharu

## 1 Introduction

After nearly four decades of existence, Islamic banks have found out how to place themselves as money related organizations which are not only critical in asset assembly, asset distribution, and usage, but are also effectively associated with the path toward actualizing government monetary policy (Narayan and Phan 2019). In addition to offering practical standard financial institutions, Islamic banks also promote domestic and international trade (Naushad 2021).

Malaysia's Islamic financial framework is based on a dual or parallel financial system, a structure that enables interest-free and interest-based funding to co-exist for credits and funding (Poon, Chow, Ewers and Ramli 2020). Furthermore, Poon et al. (2020) stated that the multi-religious and multi-social features of Malaysia lead to the Islamic financial system's ability to manage conditions in which the demand for and supply of surplus funds are no longer entirely based on confidence, but also on various factors such as return on accessibility, deposits, and the cost of financing (Syarif 2019). Furthermore, this religious and non-religious essential the showcase segment of Malaysian Islamic banking is accepted in a way that favors in the Malaysian Islamic banking investors' asset report the executive's organization influence execution (Naushad 2021; Poon et al. 2020).

Today, internet-based banking systems are one of the services offered by banks as a means for customers when making deposits or withdrawing funds. Computer-generated banks, also known as virtual banks or "branchless banks," are a new term used to describe banks that do not have a physical location, such as a branch, but instead provide services to customers through the internet and ATMs (Al-Shaer 2021; Sadeghi 2004).

Customers who use internet-based banking or online banking have direct access to a bank's information system from work, school, home, or any other location where a system association is available. The customer is now regarded as an end-client of the bank's information preparation structure in this contemporary paradigm. The customer's device plays an important role in end-client processing (Jiminez and Diaz 2019; Gerrard, Cunningham and Devlin 2006).

Al-Sharafi, Arshah, Herzallah and Abu-Shanab (2018) previously found that their findings affect the behavior of customers to accept online banking services with absolute trust. Furthermore, customer awareness, as well as perceived efficacy, security, and privacy, had a significant impact on their trust. Nevertheless, customers' perceived ease of use did not predict their intention to adopt mobile banking services.

Raza, Umer, Qureshi and Dahri (2020) and Normalini and Ramayah (2017) provide tools to assess the viability of biometric authentication technology in internet banking. While counting user perceptions of the effectiveness of biometrics authentication technologies in the framework's experimental testing, fundamental insights into the dynamics of the relationship between trust and its backgrounds were revealed. The findings of this study, in general, highlight the importance of using biometrics technology in internet banking. The relationships between perceived privacy and security and trust were clearly qualified by the perceived effectiveness of biometrics technology (Nassar and Battour 2020; Raza et al. 2020; Yussaivi et al. 2021).

Numerous researchers are already conducting research in this field, but the majority of these studies focus exclusively on conventional banking in Malaysia. Researchers rarely pay attention to research on the internet banking system provided by Islamic banking. As a matter of fact, the purpose of this research is to investigate adopters' perceptions of Islamic banks' e-banking in Kota Bharu in contexts of privacy and security. To determine whether adopters' decisions to use e-banking are adversely affected by the potential ramifications of e-banking, and ultimately to determine what measures can be taken to resolve e-banking privacy and security concerns. This article begins with an introduction and the purpose of the study, after which it discusses the literature review, research framework, methodology, findings and discussion, and finally it concludes with a conclusion and recommendations.

## 2 Literature Review

Islamic banking has become more recognized among market participants during the last decade. This is because technology has improved Islamic banking system performance for better services. In Saudi Arabia mobile services are easily accessible to users according to Alsheik and Bojei (2014). Alongside its expansion, a range of concerns in technology has been recognized. These problems include insufficient technological experience, inadequate use of technology and awareness of the risks involved (Wijayati and Gustyana 2021).

According to Eklof et al. (2016), the Islamic banking sector in Pakistan is dominated by shariah compliance understandings, which play a significant role in customer satisfaction. In the Muslim country, both the company's product and services must fulfill Islamic law since it is the most important preference among the customers. Customers will seek out Shariah-compliant institutions to use and purchase their goods and services, as this will provide them with satisfaction in selecting the best institution.

Customers' views are favorably linked to their quality preferences. Perception is a common thing that naturally occurs when it is related to humans dealing with something that will result in good or bad outcomes. Especially when the person is about to decide whether to use, apply, or adopt it. It is an active process that requires information processing and then interpreting it into a message to give humans an idea of how individuals perceive something.

Paul et al. (2016) viewed perception of a product's performance will emerge from the comparisons process, wherein the perceived performance of one company is compared to the other perceived performance of another company. Then, with one or more of the other company's standards compared, an expectation will be created. In brief, customers' perceptions of services in the internet banking industry would have a significant impact on the company.

Besides, Mohammadi (2015) found that awareness has an impact on users' perceptions in Iran. On the other hand, Dixit et al. (2010) analyzed the aspects that have an impact on the use of internet banking services that are surrounded by consumers and show the degree of consideration regarding privacy and security issues in India. Meanwhile, Safeena (2011) observed that awareness of internet banking services was high in their study. As a result, awareness has a significant impact on the adoption of internet banking services and customer satisfaction.

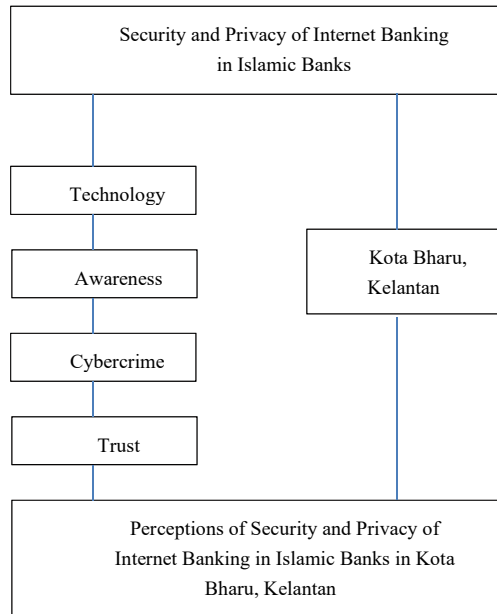
In a study of Aghdaie et al. (2011), trust can be classified into two types: interpersonal trust and institutional trust. The former is established between online customers and merchants, while the latter is established between the computer and the consumer. The client's assertion that she or he could have relied on electronic banking to ensure the welfare and security of the client's online transactions was referred to as trust (Al-Dmour, Al-Dmour, Brghuti and Al-Dmour 2021; Alazemi and Alazemi 2021; Holsapple and Sasidharan 2005).

Riek (2015) demarcated cybercrime as an unavoidable threat in today's Internet-dependent society. Though the true scale and economic impact are difficult to quantify, officials and scientists agree that cybercrime is a massive and growing issue. While according to Gaol, Budiansa, Weniko and Matsuo (2021) and Broadhust (2014), cybercrime is typically defined as a criminal activity involving technologies and computers committed on the internet. Contrary to More et al. (2016), cybercrime is an intentional attack from one computer to another computer by using network to modify, disrupt, repudiate, degrade, or damage or destroy the data accommodated in the attacked system or network.

## ***2.1 Research Framework***

The research framework in Fig. 1 can be defined based on the themes and research gap that have already been identified. According to Fig. 1, the themes identified in the literature review regarding internet banking security and privacy in Islamic Banks are technology, awareness, cybercrime, and trust. Meanwhile, the study was conducted in Kota Bharu, Kelantan. As such, this study examines customer perceptions of internet banking security and privacy in Islamic banks in Kota Bharu, Kelantan.

**Fig. 1** Research framework of perceptions of security and privacy of internet banking in Islamic banks in Kota Bharu, Kelantan



### 3 Research Methodology

#### 3.1 Research Design

A research design is a plan that specifies when, where, and how information will be collected and analyzed (Hwang and Fu 2019; Parahoo 2014). The research design is referred to the framework within which a researcher chooses his or her research methods and techniques (Schoonenboom and Johnson 2017). The design enables researchers to focus on research methods that are appropriate for the subject matter and to establish a foundation for success in their studies (Novikov and Novikov 2019). Since this purpose of this study is to identify adopters’ perceptions, analyze customers’ decisions in choosing Islamic bank e-banking, and conclude possible actions to overcome privacy and security issues among e-banking users in Kota Bharu, Kelantan, qualitative research is appropriate for this research.

#### 3.2 Qualitative Research

The qualitative method is used to collect data in this study. Aspers and Corte (2019) stated that qualitative research is guided by intense and delayed contact with a “field” or life circumstance. These situations are frequently “cliché” or typical,

intelligent of individuals', groups', societies', and organizations' regular day-to-day lives.

Qualitative research is done in the same way as exploratory experiments are done (Crawford 2006). Likewise, Yilmaz (2013) has expressed a quality research approach to examine people, phenomena, social, cases and processes in their natural state in a natural, naturalistic, inductive and interpretative way to reveal in a descriptive aspect of the relevance of their experience in the globalized era.

The aim of using a qualitative approach in this study was to investigate and portray the perceptions of online banking users in Kota Bharu, Kelantan, on privacy and security in internet banking particularly in Islamic banks. It was an effective method for gathering their thoughts on the effects of internet banking in terms of its privacy and security. The methods used were as follows:

### **Exploratory Research**

Pantano and Vannucci (2019) states that when another area is researched or when little is known about the area of interest exploratory examinations are carried out. It is used to investigate the full concept of the phenomenon and the various factors associated with that too. An interview was used in this study to examine the perceptions of internet banking users in Kota Bahru, Kelantan, on the privacy and security of internet banking. Even though this paper has focused on the privacy and security of internet banking, little is known about the perceptions of online banking users toward Islamic banking in Kelantan.

### **Descriptive Research**

Gupta, Chauhan and Jaiswal (2019) defined descriptive research as a design for providing a picture of the natural environment. It explains the current practice and concludes with the development of theories. According to Creswell and Clark (2017), researchers need to select respondents and research sites purposely in order to conduct a thorough review of a phenomenon. This study aimed to obtain a picture of the perception of Internet banking users on privacy and internet banking security to improve the security of internet banking. In the context of this study, descriptive research is used.

### **Interview**

According to Willis (2019), a qualitative research interview seeks to cover both accuracy and significance levels, but it is typically increasingly difficult to interview on a meeting level. He explained that the interview on qualitative research looks at the implications of focus topics in the universe of existence of the subjects. The main task of the interview is to understand the importance of what the interviewees say. The purpose of this study is to examine further the privacy and security of internet banking among customers of electronic banking in Kota Bharu, Kelantan.

The respondents for this study consisting of twelve online banking users with a variety of backgrounds. These twelve respondents are taking into account the data saturation as the point when no new information or themes are observed in the data. They came from a variety of backgrounds such as professionals, government servants,

university students, managers, retailers and entrepreneurs. This survey inquires about their familiarity with online banking, how do they know about e-banking, do they know what privacy and security of online banking entails, do they believe online banking is secure and essential in the future, then how does the privacy and security e-banking level of Islamic banks in Kota Bharu affect customers' decision to adopt internet banking.

### **3.3 Data Collection Method**

In this qualitative analysis, data was collected using two methods. Primary data collected through a research survey, which is a personal interview, and secondary data gathered through document analysis of books, journals, conference papers and newspapers.

#### **Primary Data**

This study was based on primary data collected through a series of qualitative interviews with twelve informants consisting of customers who consistently using internet banking in Islamic banks available in Kota Bharu.

The ordained gave researchers and respondents an insightful discussion to communicate and understand one another. This allowed the researcher to extract relevant data that would have been impossible to obtain through a standardized questionnaire. The personal interviews also allowed the researcher to meet the respondents face-to-face, thus allowing them to evaluate their expression during the talks.

The first source of data is primary data. The original data were collected to answer questions from the research. The researchers themselves are collecting information to test the hypothesis in their study. This file is not available. Then, the data sources are generally collected via experiments or field research. Interviews and observations are an example. It can be compiled of people, focus groups or expert panels. In principle, the collection of passive and active data is based on two primary methods of data collection (Nguyen 2019).

The rationale for the interview is to explore the perspectives, meetings, beliefs, or inspiration of individuals on specific issues. Until an interview, informants should be informed about the test points of interest and provide confirmation of moral standards (Devlin and Gray 2007).

The researcher only chose internet banking customers in Kelantan in this study. The rationale is that the researcher has decided to collect the best and the most numerous replies to complete this research. The researchers have carried out a semi-structural interview as respondents answer the researchers' questions spontaneously. On top of that, researchers also use communication face-to-face to ensure the information is pure.



## **Secondary Data**

Secondary data is information derived from previous studies. These data differ from primary data, in which the investigator collects the data himself or herself from an interview. Secondary data too are reliable in support of every researcher's research. Secondary data also support large-group research, since data from various sources can be collected (Ritchie 2013).

The information or derivative material gathered by the individual or other researchers. Reviewing a book, journal, conference paper, or newspaper, for example, is an example of secondary data. Journals from databases and academic textbooks such as Emerald, ProQuest, Science Direct, Google Scholar, My Athens, Research Gateway, and Yahoo were used as secondary data in this study.

Secondary data is gathered by the researcher from journals, newspapers, and books. Secondary data is used by researchers to take a data or reference that is related to Islamic banking knowledge. This is due to research indicating that privacy and security are very important in modern digital age.

## **3.4 Data Analysis Method**

To ensure the validity of the information examined in an effective manner, the data collected in the study are analyzed using document analysis and supported by the ATLAS.ti software program. The data for this study gathered using existing resources such as books, articles, and journals. Therefore, ATLAS.ti also was adopted to retrieve data from interviews.

### **Interview**

Interviews are a method that requires subjects and researchers to participate to acquire and collect information. Researchers obtained the information studied directly from direct sources. Any information gathered during the interview must be documented because any responses mentioned by respondents are important data to observe and analyses. According to Willis (2019), the interview method was preferable to the questionnaire method for gathering in-depth data. Interviews can be part of the overall research data collection strategy or one of the techniques used in the study.

### **Documentation Analysis**

Documentation analysis is a type of qualitative research in which the analyst examines documents to identify an appraisal theme. Document analysis is a social research method and an important research tool as it is used in most triangular schemes, which are a combination of methodologies used to study the same phenomenon (Bowen 2009). Documentation review is a form of secondary data analysis.

Document analysis is used by researchers for a variety of reasons. This is because documentation analysis is one of the most efficient and effective methods of data collection because documents can be handled and obtained from practical sources.

When conducting research or experiment, obtaining and analyzing documents is frequently more efficient (Bowen 2009).

ATLAS.ti version 8 is a powerful workbench for analyzing large amounts of textual, graphical, audio, and video data. Sophisticated tools assist researchers in creatively arranging, reassembling, and managing researcher material. This version 8 maintains the researcher's focus on the material itself. Hence, it meets the needs of researchers for qualitative analysis.

### **3.5 Validity and Reliability**

The concepts of validity and reliability were also used in this study. It is to understand how to minimize the possibility of errors and tendencies by increasing the data's reliability and validity. According to Mohajan (2017), reliability is one of two factors that qualitative researchers must consider when conducting the study, analysing the results, and evaluating the study's quality. Furthermore, Koohang, Nord, Sandoval and Paliszkiwicz (2020) suggested that creating a good quality study through credibility and validity in qualitative research, as further claimed, "belief of a research report lies in the middle of issues commonly discussed as validity and reliability."

Conferring to FitzPatrick (2019), validity evolved into a complicated concept. It is more closely related to the conclusion based on the assessment results. That is more focused on the outcome of the speculation that makes it implied. This evaluating consideration must be accurate and declare the truth. The assessment or evaluation should not be valid; only the assumption about this evaluation should be valid.

## **4 Findings and Discussion**

Based on the findings attained, this study concluded five factors that may stimulate the issue of privacy and security in e-banking are Technology (1), Perception (2), Awareness (3), Trust (4), Cybercrime (5). The findings can be illustrated from network view of ATLAS.ti and the explanation of the findings are as follows (Fig. 2):

### **4.1 Technology**

Every respondent believed that technology played a significant role in their decision to work in Islamic banking. They acknowledge that Islamic banking, in the absence of technology, will struggle to compete with conventional banking. Additionally, with the advancement of technology in banking, it simplifies banking-related transactions for them.

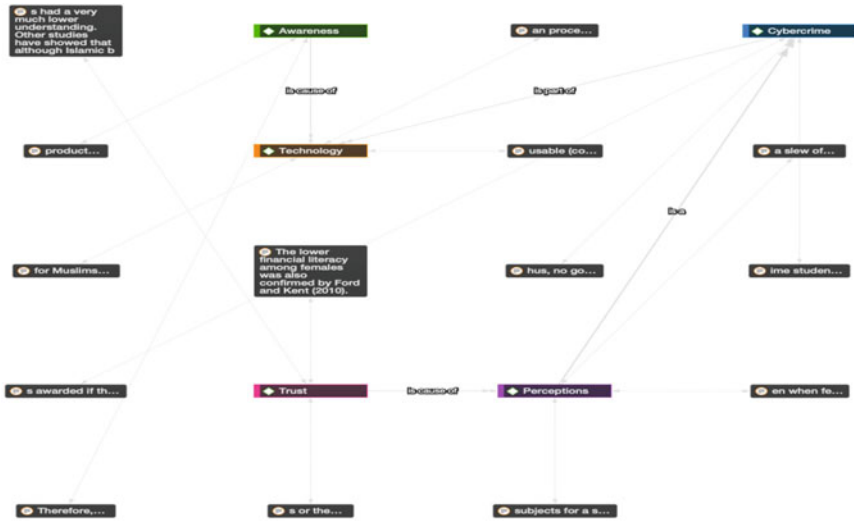


Fig. 2 Network view of perceptions of security and privacy of internet banking in Islamic banks in Kota Bharu, Kelantan

This view is found to be parallel to Utami and De Guzman (2020). They said that the business process in financial services is incredibly challenging. Banks must introduce alternative delivery channels to attract online users and enhance consumer perception. Most banks have already implemented online banking by providing their customers with a variety of online services that provide greater access to information and transactions. Customers’ satisfaction is becoming imperative as a success factor in e-banking. In a service organization, technologies are rapidly being developed. It aims to improve the quality of customer service and delivery while also reducing costs and standardizing core service offerings (Bilal Khan, Ahmad Ghafoorzai, Patel, Mohammed Shehbaz 2021).

However, respondents 1, 3, 4, 6, 7, 9 and 12 expressed some concern about whether the technology would also result in concerns about the security and privacy of their banking data. They are concerned about the ease with which irresponsible parties can obtain their personal information. Additionally, the growing problem of scammers heightens their concerns about the security and privacy of online banking. Additionally, banking data hacking incidents have occurred in Malaysia, compounding their concerns.

## 4.2 Awareness

The majority of respondents stated that they were extremely conscientious about safeguarding personal banking information such as their username, pin number and password. For example, according to respondent 4 stated that:

*“Along with my credit card and debit card, I did not preserve the password number and pin number in my wallet. This is due to the fact that it is extremely hazardous. In this regard, I will use extreme caution.*

*I will not respond to mails from scammers because I am aware that they are really harmful. They can deceive you in a number of ways.”*

Additionally, they are familiar with banking fraud, such as the Macau scammer. This awareness is in line with Tan and Teo (2000) that identify three aspects of consumer behavior that demonstrate consumer awareness of e-banking, as well as subjective norms. Which exemplifies the social impact that can influence the customer's motivations for using Internet banking and, ultimately, recognizing in control of behavior, which explains the anticipation of adapting mobile banking. Awareness is a critical component in preventing problems with privacy and security issues. Both customers and banks must play their roles to stay alert and spreading awareness to the public (Mathiyarasan and Chitra 2019). Everyone has a role of socially responsible in preventing themselves from becoming a victim of cybercrime.

## 4.3 Trust

According to Yuusaivi et al. (2021) and Bhattacharya et al. (1998), researchers from various disciplines have hypothesized trust along various dimensions. Identity analysts usually describe trust as an individual trademark, whereas social therapists generally view trust from the perspective of behavioral desires for others involved in transactions. Economists and sociologists generally focus on how institutions are set up and impetuses are used to reduce vulnerability associated with transactions involving relative outsiders. It has been demonstrated that trust is a critical middle person in all business relationships and should be a central focus of any organization associated with administrations (Al-Dmour et al. 2021; Morgan and Hunt 1994). This is parallel to

*“Trust plays a significant part in maintaining clients trusting the bank.”*

Whereas respondent 6 stated that:

*“We have no trouble doing business with banks and remaining loyal to them if they can maintain an element of confidence throughout their operations.”*

#### 4.4 Cybercrime

Cybercrime is commonly defined as a criminal activity involving technology and computers that takes place on the internet. Mogos and Jamail (2021) and Riek et al. (2015) also demonstrated that cybercrime has a significant impact on operational systems in banks. Cybercrime has a wide range of consequences including financial costs and intangible losses. Some cybercrime involves criminals assuming specialized roles and deceiving people. Respondent 2, 6, 9 and 10 stressed that:

*“We are particularly worried about recent cybercrime issues, and we propose that the Malaysian government take decisive measures to combat this critical problem. We, as customers, are quite concerned about the current rise in cybercrime.”*

Whereas respondent 3, 4, 7 and 10 stated that:

*“We always take the best precautions to avoid being tricked by cybercriminals; we also propose that the bank take stricter efforts to ensure that customer information is safe and secure; the bank is also required not to sell our information to irresponsible third parties.”*

In addition, these cybercrime attacks are designed to steal relevant information, money, and other valuable information while leaving no trace of the intrusion (Acharya and Joshi 2020; Gaol et al. 2021).

## 5 Conclusion

The primary goal of this research is to investigate and investigate adopters' perceptions of Islamic bank e-banking in Kota Bharu in terms of privacy and security. From the findings, it is suggested that there are several factors to take into consideration, and it is the responsibility of banks to ensure that customers are provided with secure systems to use e-banking services, as well as to spread awareness to the customers. Not only that, e-banking users must take personal responsibility to avoid becoming a victim by being aware of and always cautious of any issues or problems related to the privacy and security of the e-banking system.

Users of online banking are acknowledged of the tremendous benefits gained such as convenience, twenty-four-hour availability, time savings, and the ease of conducting transactions anywhere. These are some of the most important advantages of internet banking that users have mentioned. Based on the result attained, privacy and security issues have become a concern to the adopters, not just those who have experienced cybercrime but also those who are not.

According to the study's findings, users are concerned about privacy and security issues, not just those who have experienced cybercrime but also those who have not. As a result, the researchers discovered that perception is very valuable and plays a key role for users who are determined to adopt internet banking. Consequently, their trust and awareness of internet banking, as well as their perception of online banking privacy and security may influence their decision to act. Finally, users of e-banking

must be responsible for securing their personal information, and organizations must strengthen their proxy from hackers breaking into operational systems.

Due to the nature of the research questions and the limited location of research, this research was based on qualitative research methods. The data collection and analysis conducted in this study did not, for the most part, yield statistically significant result. Rather, the data led the researchers to a sample of primary (interview method) and secondary data analysis from which to draw conclusions. While the data analysis was vigorously conducted using ATLAS.ti tools and validated, the results are limited by the sample size. As a result, the customer's perceptions identified by the study are based on perceptions from customers that reside in Kota Bharu, Kelantan. The limitations of this study point towards topics to be addressed in the future. Internet banking of Islamic banks in Malaysia will continue to evolve. Online banking should strive to lead this change. The following are a few areas for future research; a) Malaysian customer's perception on privacy and security of online banking in Islamic banks, b) Study on privacy and security issues of internet banking in Islamic banks from quantitative or mix method perspective, c) The impact of Fintech in Islamic banking industry.

**Acknowledgements** The authors would like to thank the Ministry of Education for financing the Fundamental Research Grant Scheme (FRGS) grant (R/FRGS/A0100/00677A//004/2018/00558). The authors also would like to thank the students namely Siti Syazana Ismail, Siti Zarifah Aisyah Mohd Zabidi, Syed Muhammad Ayyub Syd Abdul Rahman, Tengku Nur Farah Tengku Muhamad Khaizul Anuar and Tibashina Magathavan for collecting and analyzing data to complete this research.

## References

- Acharya, S., Joshi, S.: Impact of cyber-attacks on banking institutions in India: A study of safety mechanisms and preventive measures. *PalArch's J. Archaeol. Egypt/egyptology* **17**(6), 4656–4670 (2020)
- Al-Dmour, A., Al-Dmour, H.H., Brghuthi, R., Al-Dmour, R.: Technology acceptance dynamics and adoption of e-payment systems: Empirical evidence from Jordan. *Int. J. E-Bus. Res. (IJEER)* **17**(2), 61–80 (2021)
- Al-Shaer, B.Y.: The jurisprudential rules related to the revolving credit card issued by Safwa Islamic Bank/The Hashemite Kingdom of Jordan. *Jordan J. Islamic Stud.* **16**(3), 157–178 (2021)
- Al-Sharafi, A., Arshah, R.A., Herzallah, A., Abu-Shanab, E.A.: The impact of customer trust and perception of security and privacy on the acceptance of online banking services: structural equation modeling approach. *J. Ind. Manage.* **4**, 1–14 (2018)
- Alazemi, M., Alazemi, L.: Transparency standards implementation in light of governance in the Islamic banks in Kuwait. *Int. J. Bus. Ethics Gov.* **4**(1), 106–123 (2021)
- Aspers, P., Corte, U.: What is qualitative in qualitative research. *Qual. Sociol.* **42**(2), 139–160 (2019)
- Bhattacharya, R., Devinney, T.M., Pillutla, M.M.: A formal model of trust based on outcomes. *Acad. Manage. Rev.* **23**(3), 459–472 (1998)
- Khan, M.B., Ghafoorzai, S.A., Patel, I., Shehbaz, D.M.: Waqf based Islamic fintech model for agriculture sector of Indonesia. *Int. J. Bus. Ethics Gov.* **4**(1), 73–85 (2021)
- Bowen, G.A.: Document analysis as a qualitative research method. *Qual. Res. J.* **9**(2), 27–40 (2009)

- Broadhurst, R., Grabosky, P., Alazab, M., Bouhours, B., Chon, S.: An analysis of the nature of groups engaged in cybercrime. *Int. J. Cyber Criminol.* **8**(1), 1–20 (2014)
- Creswell, J.W., Clark, V.L.P.: *Designing and Conducting Mixed Methods Research*. Sage Publications, Washington DC, USA (2017)
- Crawford, J.: The use of electronic information services and information literacy: a Glasgow Caledonian University study. *J. Librariansh. Inf. Sci.* **38**(1), 33–44 (2006)
- Devlin, M., Gray, K.: In their own words: a qualitative study of the reasons Australian university students plagiarize. *High Educ. Res. Dev.* **26**(2), 181–198 (2007)
- Dixit, N., Saroj, K.: Acceptance of e-banking among adult customers: An empirical investigation in India. *J. Internet Bank. Commer.* **15**(2), 1–17 (2010)
- Eklof, J., Hellstrom, K., Malova, A., Parmler, J., Podkorytova, O.: Customer perception measures driving financial performance: theoretical and empirical work for a large decentralized banking group. *Meas. Bus. Excell.* **21**(3), 239–249 (2017)
- FitzPatrick, B.: Validity in qualitative health education research. *Curr. Pharm. Teach. Learn.* **11**(2), 211–217 (2019)
- Gaol, F.L., Budiansa, A.D., Weniko, Y.P., Matsuo, T.: Cyber crime risk control in non-banking organizations. *J. Theor. Appl. Inf. Technol.* **99**(5), 1219–1231 (2021)
- Gerrard, P., Barton Cunningham, J., Devlin, J.F.: Why consumers are not using internet banking: a qualitative study. *J. Serv. Mark.* **20**(3), 160–168 (2006)
- Gupta, P., Chauhan, S., Jaiswal, M.P.: Classification of smart city research—a descriptive literature review and future research agenda. *Inf. Syst. Front.* **21**(3), 661–685 (2019)
- Hwang, G.J., Fu, Q.K.: Trends in the research design and application of mobile language learning: a review of 2007–2016 publications in selected SSCI journals. *Interact. Learn. Environ.* **27**(4), 567–581 (2019)
- Koohang, A., Nord, J.H., Sandoval, Z.V., Paliszkievicz, J.: Reliability, validity, and strength of a unified model for information security policy compliance. *J. Comput. Inf. Syst.* 1–9 (2020)
- Mathiyarasan, M., Chitra, V.: A study on customer awareness towards internet banking—with reference to tumkur district. *SAARJ J. Bank. Insur. Res.* **8**(3), 17–27 (2019)
- Mogos, G., Jamail, N.S.M.: Study on security risks of e-banking system. *Indonesian J. Electr. Eng. Comput. Sci.* **21**(2), 1065–1072 (2021)
- Mohajan, H.K.: Two criteria for good measurements in research: validity and reliability. *Econ. Ser.* **17**(4), 59–82 (2017)
- Mohammadi, H.: Investigating users’ perspectives on e-learning: an integration of TAM and IS success model. *Comput. Hum. Behav.* **45**, 359–374 (2015)
- Narayan, P.K., Phan, D.H.B.: A survey of Islamic banking and finance literature: Issues, challenges and future directions. *Pac. Basin Financ. J.* **53**, 484–496 (2019)
- Nassar, R.M., Battour, M.: The impact of marketing ethics on customer loyalty: a conceptual framework. *Int. J. Bus. Ethics Gov.* **3**(2), 1–12 (2020)
- Naushad, M.: Comparative analysis of Saudi sharia compliant banks: a CAMEL framework. *Accounting* **7**(5), 1119–1130 (2021)
- Nguyen, M.: *Data Collection Methods in L2 Pragmatics Research*. The Routledge, London (2019)
- Normalini, M., Ramayah, T.: Trust in internet banking in Malaysia and the moderating influence of perceived effectiveness of biometrics technology on perceived privacy and security. *J. Manage. Sci.* **4**(1), 3–26 (2017)
- Novikov, A.M., Novikov, D.A.: *Research Methodology: From Philosophy of Science to Research Design*. CRC Press, Florida (2019)
- Pantano, E., Vannucci, V.: Who is innovating? an exploratory research of digital technologies diffusion in retail industry. *J. Retail. Consum. Serv.* **49**, 297–304 (2019)
- Parahoo, K.: *Nursing Research: Principles, Process and Issues*. Macmillan International Higher Education, New York (2014)
- Paul, J., Modi, A., Patel, J.: Predicting green product consumption using theory of planned behavior and reasoned action. *J. Retail. Consum. Serv.* **29**, 123–134 (2016)

- Poon, J., Chow, Y.W., Ewers, M., Ramli, R.: The role of skills in Islamic financial innovation: evidence from Bahrain and Malaysia. *J Open Innov. Technol Market Complex.* **6**(3), 47 (2020)
- Raza, S.A., Umer, A., Qureshi, M.A., Dahri, A.S.: Internet banking service quality, e-customer satisfaction and loyalty: the modified e-SERVQUAL model. *TQM J.* **32**(6), 1443–1466 (2020)
- Riek, M., Bohme, R., Moore, T.: Measuring the influence of perceived cybercrime risk on online service avoidance. *IEEE Trans. Dependable Secure Comput.* **13**(2), 261–273 (2015)
- Ritchie, J., Lewis, J., Nicholls, C.M., Ormston, R.: *Qualitative Research Practice: A Guide for Social Science Students and Researchers.* Sage Publications, London (2013)
- Safeena, R., Hundewale, N., Kamani, A.: Customer's adoption of mobile-commerce a study on emerging economy. *Int. J. e-Educ. e-Bus. e-Manage. e-Learn.* **1**(3), 228 (2011)
- Sadeghi, T.: Examining the obstacles of formatting electronic banking in Iran. (Unpublished master's thesis). Alíame Tabatabay University, Farsi, Iran (2004)
- Schoonenboom, J., Johnson, R.B.: How to construct a mixed methods research design. *KZfSS Kölner Zeitschrift Für Soziologie Und Sozialpsychologie* **69**(2), 107–131 (2017)
- Syarif, F.: Regulatory framework for Islamic financial institutions: lesson learnt between Malaysia and Indonesia. *J. Halal Prod. Res.* **2**(2), 79–85 (2019)
- Utami, P., De Guzman, M.J.J.: Innovation of technology-based strategies based on environmental examination organizations in Islamic banking and finance. *Asian J. Multi. Stud.* **3**(1), 117–126 (2020)
- Wijayati, C.D., Gustyana, T.T.: The impact of mobile banking on ROA of Islamic banking which was listed on the IDX in 2015–2019. *Int. J. Adv. Res. Econ. Finan.* **3**(1), 63–69 (2021)
- Willis, R.: The use of composite narratives to present interview findings. *Qual. Res.* **19**(4), 471–480 (2019)
- Yilmaz, K.: Comparison of quantitative and qualitative research traditions: Epistemological, theoretical, and methodological differences. *Eur. J. Educ.* **48**(2), 311–325 (2013)
- Yussaivi, A.M., Lu, C.Y., Syarief, M.E., Suhartanto, D.: Millennial experience with mobile banking and artificial intelligence (AI)-enabled mobile banking: evidence from Islamic banks. *Int. J. Appl. Bus. Res.* 39–53 (2021)



# Talent Shortage Assessment in Malaysia Islamic Banking Institution



**Mohd Ikhwan Aziz, Hasannuddiin Hassan,  
Rooshihan Merican Abdul Rahim Merican, Sathiswaran Uthamapuhtran,  
Ahmad Syakir Junoh, and Marlisa Abdul Rahim**

**Abstract** Generally speaking, the first implicit assumption of an increasing number of talent supply and demand should help to alleviate the talent shortage problem in Islamic banking institutions. However, the situation was contradictory in IBIs, and the situation remained in a state of paradox, resulting in a severe shortage of qualified talent. Despite this, the number of graduates from Islamic banking education institutions and the number of graduates from Islamic banking institutions continues to grow year after year. As a result, who should be held accountable for this state of affairs in the talent pool? In order to determine the factors that were affecting the talent shortage in Malaysian Islamic banking institutions, the purpose of this study is to collect data from a variety of sources. Using a quantitative approach, which includes exploration, description, and explanatory characteristic, the researcher has sent out questionnaires to 380 students in Malaysian public universities. Structural equation modelling used to analyse the data gathered from the questionnaires with IBM-SPSS and IBM-AMOS software to generate the results. Consequently, the curriculum variable was found to have a dominant effect on the supply of available talent. The implications this research has contributed to the economic and societal expansion

---

M. I. Aziz (✉) · H. Hassan · R. M. A. R. Merican · S. Uthamapuhtran · A. S. Junoh  
Faculty of Entrepreneurship and Business, Universiti Malaysia Kelantan, Pengkalan Chepa,  
Kota Bharu, Kelantan, Malaysia  
e-mail: [ikhwan.a@umk.edu.my](mailto:ikhwan.a@umk.edu.my)

H. Hassan  
e-mail: [hasann@umk.edu.my](mailto:hasann@umk.edu.my)

R. M. A. R. Merican  
e-mail: [rooshihan@umk.edu.my](mailto:rooshihan@umk.edu.my)

S. Uthamapuhtran  
e-mail: [sathiswaran@umkedu.my](mailto:sathiswaran@umkedu.my)

A. S. Junoh  
e-mail: [syakir@umk.edu.my](mailto:syakir@umk.edu.my)

M. A. Rahim  
Faculty of Tourism, Hospitality, and Wellness, Universiti Malaysia Kelantan, Pengkalan Chepa,  
Kota Bharu, Kelantan, Malaysia  
e-mail: [marlisa@umk.edu.my](mailto:marlisa@umk.edu.my)

as the model for talent development able to assist in reduce the talent gap between supply and demand.

**Keywords** Talent shortage · Demand and supply · Young generation · Malaysia · SEM

## 1 Introduction

Islamic banking has grown to become an extraordinary and rapidly expanding segment of the international banking and capital markets in recent years, and it continues to expand. It is the goal of the Islamic banking system to provide a variety of religiously acceptable banking services to both Muslim and non-Muslim customers alike. Those who adhere to Islamic doctrine are committed to eliminating interest, wagering, and uncertainty in all their forms from their financial systems. The phenomenon of Islamic banking has piqued the interest of many people, who are curious about how it differs from conventional banking in terms of its system, operation, product, development, and other aspects. Despite the fact that the world already has a very established conventional banking system that provides banking services to consumers, this conventional banking system is not immune to economic turbulence, as demonstrated by the collapse of a giant conventional bank in the year 2008. In light of this, Islamic banking has piqued the interest of many investors, prompting them to diversify their investment portfolios into Islamic banking markets, according to the report.

The development and growth of Islamic banking is based on the development and growth of talent. It is the most valuable asset in the industry, and it will continue to be on the continuous agenda so that the industry can maintain its resilience and achieve sustainable growth. A significant portion of the 200,000 workforces that will be required by Islamic banking institutions by the year 2020 in a variety of fields has been created as a result of the growing momentum that Islamic banking institutions have demonstrated (Aziz et al. 2019). As a result, the Economic Transformation Programme (ETP) aims to increase the number of students enrolled in Islamic finance from the current 6,000 to 54,000 by 2020 in order to meet the demand. The ETP also aims to increase the number of employable Islamic banking graduates from 64.8% in 2010 to 80% in 2015 by the end of the programme (Comin and Peng 2016). There are only 17,621 workforces available in Islamic banking institutions today, which accounts for only 11% of the workforces required by Bank Negara Malaysia, according to the latest available data (<https://www.google.com/search?q=bank+negara+malaysia+annual+re>).

Consequently, BNM has enhanced their additional education infrastructure in response to the high demand for Islamic banking talent in the industry. There are four stages to the talent development infrastructure initiative that has been implemented: the first is entry level, the second is Middle level, the third is Leadership, and the fourth stage is Research and Scholarship. These initiatives provide a platform for talent at

all levels, from the entry level for graduates to the middle level for professionals to the leadership level for senior management and the board of directors, and even up to the research level for researchers and scientists. One of the goals of these paths is to ensure a consistent flow of capable and competent talent pool for an innovative and dynamic Islamic banking industry.

When compared to previous years, the talent shortage has become more acute in recent years. According to a survey conducted by Manpower Group (2013), 40% of employers were having difficulty filling positions and believed that the candidates they were interviewing lacked the specific skills they were looking for. Consequently, the talent shortage has intensified, reaching its highest level since before the Great Recession. Talent shortages in Malaysia's Islamic banking institutions are becoming more acute as a result of the growing concern about the country's overall talent shortage. Malaysia's talent shortage has increased to 82% in Islamic banking institutions, compared to the industry average of 76% and the conventional banking benchmark of 78%, respectively (Aziz et al. 2016). With regard to that particular matter, BNM has simultaneously launched the human capital development plan through its agencies, as well as education and knowledge service providers. As a result, many educational and knowledge-based service providers developed programmes that were based on the principles of Islamic banking.

Despite the fact that the number of providers of Islamic banking education and knowledge services has steadily increased year after year, However, the issue of a scarcity of qualified candidates continues to exist. As the baby boomers reach retirement age or move to other financial institutions, this shortage has had an impact on employers' struggles to fill their talent vacancies within their respective institutions. Furthermore, as a result of the desperate measures taken by employers, graduates with or without Islamic banking qualifications have been hired by these companies. While the number of Islamic banking graduates continues to grow year after year, many of them remain unemployed, according to the Bureau of Labor Statistics (Saba et al. 2019). Statistics show that there are 3,102 first degree graduates from banking and finance related programmes (KPT - 2020). Of these, 54.8% are employed, 4.2% continue their education, and the remaining 41% are still unemployed. Apart from that, this group of graduates prefers to work in the professional, scientific, and technical sector (13.2%), other sectors (13.7%) as well as the education sector (11.3%). Meanwhile, 8.2% of banking sector graduates prefer to work in the private sector. Does this scenario demonstrate that the banking sector is less attractive to young talent when compared to other sectors that are available to attract them into their organisation? According to Khnifer (2010), most Human Resources (HR) policies do not reflect the needs of a recent graduate.

So, how effectively is the present Malaysian educational system positioned to create well-trained people capable of matching the supply and demand for talent in both industries and universities today? Overall, this study attempts to uncover the variables that lead to a lack of talent in IBIs by examining all of these overviews. In conjunction with this, it leads to the ultimate expression of the problem, which is: which variables, and to what degree, are the most prominent in impacting the talent shortage; talent supply or talent demand? As far as it appears, there is an imbalance

between the demand for and supply of talent in the various industries. As a result, this study is deemed necessary due to the fact that these areas are still under investigation.

## 2 Literature Review

### 2.1 Talent Demand

In the words of Cappelli 2008a, talent demand is a reflection of the supply of talent, and it can be forecasted in order to plan for the future of the company. Although over the past ten years, (Michaels 2001) have emphasised the fact that talent demand is referred to those companies or organisations that engage in “talent wars”, and numerous studies have attempted to explain about the talent demand proposition (Axelrod et al. 2001; Cappelli 2008b; Zhang et al. 2018).

For those who implement talent management activities in their organisations, on the other hand, the term “talent demand” refers to those who are in high demand. The following are the three main basic activities of talent management: attraction, retention, and development (with the latter two being the most important) (Cappelli 2009, 2008a; Pessima and Dietz 2019).

A different interpretation of talent demand was held by some researchers at the same time. This is the section in which, according to Brown (1990), Mulder and Ellinger (2013), and Cumming and Worley (2014), they have outlined the characteristics of the talent function in their respective organisations. Furthermore, this is the location where it has happened that a job function has been provided for each job scope. An alternative point of view on talent demand is expressed by another researcher in the context of when they have taken on or hired a talent into their organisation. After that, they provide the talent with appropriate incentives, salaries, and employee benefits.

Furthermore, talent demand has been reflected by government policy, with those organisations having their own corporate policy, rules, and regulations to adhere to. However, it must still be in accordance with government policy. Otherwise, that particular organisation will be found to be obstructing the government’s vision for industrial development and will be subject to monetary penalties. Furthermore, the policies derived are not only applicable to a specific organisation or company, but are also applicable to specific industries as a whole, in accordance with the current government vision and mission (Burn and Robins 2003; Cram 1994).

The evidence presented in this discussion suggests that the demand for talent is driven by the demand for talent in the organisation. Aside from that, the organisation has complete control over the situation when it comes to the availability of talent on the job market. The majority of the time, they have complete control over the talent, including the ability to hire or not hire, retain or not retain, develop or not develop. Despite the fact that they have absolute power, this organisation is still subordinate to the power of the state or government policy. When the government

intervenes with a policy, any organisation is obligated to follow the act or policy of the government. Regardless of the act of the government to derive the policy or rules and regulations, the government has the authority to enforce those rules and regulations on any organisation that falls under their jurisdiction (Dewan and Myatt 2010; Pessima and Dietz 2019).

Furthermore, the current trends in talent demand have been met by people from a variety of generations, including baby boomers, generation X, and generation Y, among others. The landscape or socioeconomic conditions of a particular workplace have undoubtedly changed as a result of the different generations working within the organisation. The methods for attracting, motivating, and rewarding the various generations have also evolved. In particular, when it comes to generation Y, this generation is currently the most educated generation when compared to previous generations, and this generation has the greatest ease of access to higher education.

They come in the workplace with greater maintenance, and as a result, they want a higher base pay, better work-life balance, flexible working hours, and appealing employee perks to match their current lifestyle and cost of living, as well as a better work-life balance (Aziz et al. 2019). The beginning of the talent revolution, whether in the workplace or the job market, has been signalled from this moment forward. Because of this, organisations need to be flexible in order to attract the finest talent available on the market; otherwise, they run the risk of losing key employees who are ideal for their company. The term “talent war” refers to the competition between organisations or businesses to get the finest talent at the lowest feasible price. Thus, the findings of this study have identified four sub-dimensions of talent demand, which are as follows: base salary, flexible working hours, employee benefits, and public policy.

## ***2.2 Talent Supply***

According to the law of supply and demand, if a demand exists, there will be a supply to fulfil that need in order for the situation to be accurately represented. As previously stated in this area, the researcher has explored the idea of talent demand; thus, the discussion in this section will be relating to the concept of talent supply. According to Romer (2000), higher education institutions that have generated talent for any respecting industry should be evaluated in order to have a better understanding of the notion of talent supply. According to Haggstorm (1988), a new concept of talent supply was defined for the first time in 1988, and it is composed of four components: (1) new entrants into the system; (2) former talent who re-enter the system; (3) holdover talent from the previous year; and (4) immigrant’s talent who has been transferred to another system.

In contrast to the prior idea of talent supply mentioned above, Stephan and Silvia (Stephan et al. 2008) asserted that talent supply may be produced and grown at the corporate or organisational level. Once talent has reached the next level, it may

be outsourced internationally based on two criteria: firm degree of experience and capability, as well as firm level of capability.

For example, Fort and Winfree (2009) proposed an alternative definition of talent supply, arguing that the availability of talent in the sports business differs considerably from that of other industries. The author went on to explain that the availability of talent in sports may be defined by two characteristics: the presence of a closed league and the presence of an open league (or competition). A closed league is comparable to the National Football League in that the rosters of one club in the league serve as a source of talent for another team in the league, similar to how the National Football League operates. It is comparable in this regard to the international football leagues in that the source of talent supply has no impact on the capacity of the other teams to develop their own potential. In certain situations, talent supply may be seen of as a source of supply, with the competition acting as a channel for the supply of talent. As early as 1979, Litman (1979) highlighted how competitive programmes, particularly those geared toward people in the entertainment sector, may serve as a source of talent supply for businesses looking to grow their employee base. However, training institutions act as an extension of the normal talent supply since its role is to provide as a source for individuals to improve their abilities or learn a specific skill (Darling-Hammond and Sykes 2003), but traditional educational institutions do not. According to Elrick and Lewandowska (2008), the job of the agent is not only a conduit for talent acquisition, as is commonly believed. While not a basic source of talent supply, the agent serves as an intermediate or middleman in the talent supply chain process, functioning as a link between the fundamental source and the institutions that have a demand for talented persons, according to the definition of the word.

Overall, talent supply serves the purpose of producing talents who are compatible with the appropriate job, according to Schweyer (2010). Furthermore, the rising number of baby boomers retiring from the workforce has resulted in a substantial mismatch between demand and supply in the labour market, which has contributed to the current economic downturn. On the other hand, the existing state of affairs in the production of talent and the supply of talent is being called into question as to its long-term viability. When it comes to sustaining a competitive advantage in the market, it is critical to continue to meet the need for qualified employees. Burguet and Sákovics (2016) have defined the status of the issue when talent supply in a sport sector is inelastic or elastic under specific conditions using the wage-wage relationship as the indicator factor in their study. Due to the inelastic state of talent supply, as the labour market becomes more decentralised, it is possible that talented individuals would become unemployed. Being unable to unilaterally choose the quantity of talent to be kept meant that the talent had to compete with one another in order to be considered for the post, and this created a competitive environment. The result of that situation would be that the losing party would be out of work or would be forced to relocate to a different area. The equilibrium condition of a talent supply scenario characterised by elastic demand is reached when talents are employed; as a result, the revenue sharing reduces in proportion to the quantity of talent hired.

A significant influence has been made on the way in which talent is required by organisations because of the complicated and sophisticated business environment in which they operate. When a scenario arises, it is the job of talent supply to respond to it and mould the talent to fit into this competitive advantage setting. Current personnel must be trained and developed in enhanced employability abilities, which is the duty of the talent supply. As previously said, the new talent generation has grown up in the information economy, where they are more focused on the creation of intellectual skills rather than natural resources and physical inputs. It is necessary to establish an integration of development talent in the talent supply by combining the fundamental values of knowledge, education, and technology. These three pillars, which are primarily talent, infrastructure, and curriculum, serve as the foundation for the operation of talent supply institutions.

On this basis, several discussions have taken place about the model or theory that should be used to operate the factors mentioned above in the current environment. Talent management and the talent supply chain are two well-known models or theories that have long been associated with the development of talent supply and the development of talent. As previously discussed in the context of talent management, it is the strategic management process that directs the flow of talent throughout an organization (Iles et al. 2010). For their part, Christensen Hughes and Rog (2008) combined the talent management model with supply chain theory in order to increase the short supply of skilled workers. Instead of stating that supply chain value cannot be implemented in the future, the author explained that supply chain value can be implemented in the future in order to tap into the talent within and outside of the institution or organisation. Another piece of evidence from the literature revealed a relationship between the supply chain model and the sustainability of acquiring talent from the talent source.

As a conclusion, talent supply is determined by the location where a talent is produced and the specific needs that must be met by the talent when it is supplied into the demand institution that requires a talent. When a talent is being developed, the talent supply should be able to identify and develop them in the appropriate manner. When going through this process, the requirement for a comprehensive infrastructure is an essential point in the development of qualified talent. As a transitional step between the chain of talent and infrastructure processes, curriculum serves as a vehicle for the transfer of knowledge and skills between the infrastructure that supplies talents and the desired talent. As a result, the availability of talent is an important indicator for determining the existence of a talent shortage and, later, for developing talent for desired institutions.

### ***2.3 Talent Shortage***

Several researchers have described the current state of the definition of talent shortage. Described by Miner (1974), the meaning of a talent shortage is equivalent to the presence of a human constraint in an organisation or institution. The authors

of Crainer and Dearlove (1999) provided an explanation for the opposite meaning, in which they used harsh language to represent talent shortage as the death of executive talent. On the other hand, the term “workforce crisis” illustrated the definition provided by Dytchwald et al. (Workforce Crisis 2021). On the other hand, interpreted the meaning of talent shortage in terms of the concept of the hidden brain drain. As a result, regardless of which definition has been established by the researchers in the past, it is clear that the definition has resulted in a shortage of talent, human capital, or workforce in either the demand or supply institutions (Winning 2017). More in-depth discussion of the talent shortage will take place in the following sections.

As a result of the growing demand for talent in the IBI market, the demand for talent has increased dramatically. Since then, Islamic banking institutions (IBIs) have unintentionally sparked a talent war in the Islamic banking sector. As a result of these circumstances, the talent shortage at IBIs has reached an acute stage.

Furthermore, talent attraction has become more difficult in meeting the needs and preferences of the current generation, which has resulted in a shortage of qualified candidates. Today’s talent development was created in the same vein as yesterdays to substantiate in reducing the talent shortage that has become more complex and dynamic as the workforces around the world have grown larger and diverse, as well as better educated and more mobile in recent years.

It has been confirmed that there is a scarcity of talent, and that a comprehensive talent management approach may be implemented as a successful strategy in any given organisation or industry. It is possible that a scarcity of skilled workers will have a long-term detrimental influence on the development of the sector, sparking an intense global talent war, increasing high mobility turnover, and negatively impacting company performance.

Meanwhile, in order to address the talent shortage from a supply perspective, the combination of fundamental resources within higher education institutions, which include talent, university infrastructures, and curriculum, would provide a comprehensive value for talent development, according to the World Economic Forum. Higher education institutions were commonly noted as having a contradiction between their objective of developing talent and their aim of educating the general public. This is despite the fact that many different programmes for talent development have been implemented. The present and prior plans appear to result in a mismatch between the skill set being supplied and the demand for that skill set (Liu 2018), according to the evidence. According to Aziz et al. (2011), it was also highlighted the necessity of collaboration between higher education and industry in establishing a realistic curriculum that might lead to work preparedness among the talent pool. A result of this would be an increase in the recognition of the talent brand across all industries.

Consequently, the impact of a skills shortage in any given organisation has the potential to be a catastrophic event in the organization’s future development. For the time being, the most effective mechanism for addressing the talent shortage issues is considered to be a Each stakeholder (including the government, industrial organisations, and higher education institutions) must take a holistic and united approach to talent management in order to effectively manage both demand and



supply. According to reports, it will create a balance between the availability of talent and the availability of talent resource availability.

### 3 Methodology

A quantitative technique that includes descriptive, explanatory, and confirmatory components used in the study [69]. The sampling of simple random procedure employed among university students as study participants [47]. Its probability feature, the sampling technique was chosen, and it is compatible with structural equation modelling (SEM). There are 371 respondents who have been chosen to participate in the unit analysis of the study. The questionnaire utilised in the research was a structured interview, which was used to collect data from respondents. The questionnaire sent to university students as part of the research. With a 10-point Likert scale, the questionnaire is divided into four sections: A (demographics), B1 (talent demand), B2 (talent supply), C and (talent shortage), all of which are scored on a 10-point Likert scale. That scale is used to collect sensitive data from responders and prevents them from providing an unbiased answer.

IBM-SPSS and IBM-AMOS are the two types of tools that are recommended for use in the analysis. Descriptive and inferential analyses are two different sorts of analyses that can be accomplished using those two tools. In the following step, factor analysis is used to define variability among seen, correlated variables in terms of a potentially smaller number of unobserved variables, which are referred to as factors in this case. In this case, the goal is to discover independent latent variables. Confirmatory factor analysis (CFA) is also used to validate the measurement model of the construct and to test the given hypothesis in the path model, among other things. The procedure that was used in the testing of the SEM path model. It is a strategy for dealing with a latent component in a model that is used to overcome a limitation in standard least square regression.

### 4 Results

Approximately 371 respondents were asked about their demographic profiles; female respondents dominated the responses in this survey with 69.2% of the total, which had a significant impact on the outcome. In line with the dominance of respondents aged 23 and up (61%), as opposed to those aged 22 and under (39%), this result was obtained. As the results of the survey revealed, the vast majority of those who took part were of a certain age and matured to understand about talent shortage.

The square root values of the AVE in the respective constructs are represented by the bolded diagonal values, whereas the other values represent the correlation between the respective pair of constructs. The Discriminant Validity of a construct is achieved if the square root of its AVE is greater than the correlation value of the

**Table 1** Discriminant validity index summary for all constructs

	Demand	Supply	Shortage
Demand	<b>0.811</b>		
Supply	0.630	<b>0.935</b>	
Shortage	0.560	0.62	<b>0.775</b>

**Table 2** The regression weight for supply and demand in predicting shortage

	Estimate	S.E	C.R	P	Result
Shortage <- Supply	0.435	0.062	6.967	***	Significant
Shortage <- Demand	0.273	0.058	4.714	***	Significant

construct with the other constructs in the model, as defined above. In other words, if the bolded diagonal values are higher than any other values in its row and column, the Discriminant Validity is achieved (Awang 2014; Aziz et al. 2011). The discriminant validity of the values in Table 1 is demonstrated by the fact that they are tabulated. The study comes to the conclusion that the Discriminant Validity for all constructs has been established.

Lastly, the study must determine whether or not all items used in measuring the construct have a normal distribution before modelling the structural model and running SEM. Because SEM employs a parametric statistical modelling approach, it is necessary to assess the normality distribution of all accepted items measuring the constructs before proceeding with the investigation. To demonstrate that the skewness values for all items are within normal limits, according to Awang (2015), the study only needs to demonstrate that the skewness values for all items are within normal limits.

A normal distribution was obtained with a kurtosis value of  $-2.577$ , which is considered to be normal. The acceptance value for the analysis is between the kurtosis values of  $-3$  to  $+3$  [46] and the multivariate kurtosis value of less than 50, which is considered to be below normal (Awang 2015). As a result, the researcher will be able to proceed with further investigation. All Composite Reliability (CR) and Average Variance Extracted (AVE) values are greater than or equal to the threshold values of .6 and .5, respectively, indicating that all main constructs in the model have convergent validity and composite reliability, respectively.

### 4.1 Structural Model

In the structural model, the researcher brings all of the many constructions that are engaged in the research together into a cohesive whole. For this reason, it is particularly useful for representing the interrelationship of variables among dependence

relationships (Hair et al. 2013). This is because it contains a greater number of dependence relationships connecting the constructs in the hypothesised model with the constructs in the structural model (Hughes and Rog 2008).

To be more specific, this approach is appropriate when using a confirmatory approach, which means that the model proposed has higher levels of evidence in terms of the latent constructs involved in a causal model than a deductive approach, which means that the model proposed has higher levels of evidence in terms of the latent constructs involved in a deductive approach. It has been demonstrated by AMOS that in order to find the appropriate solution and prevent non-convergence estimates, SEM requires a sufficient sample size of 200 samples (Awang 2015) and is dependent on stringent assumptions such as normality, homoscedasticity, and the absence of outliers (Hair et al. 2013). Because we had already satisfied this criterion in the previous investigation, the route estimates we got using the maximum likelihood approach were regarded as being reliable. Figure 1 illustrates the process through which the three major exogenous constructions (talent supply, talent demand, and talent supply) are imposed on the endogenous construct (talent demand) (Talent Shortage). When testing this constructed relationship, only one arrow has been chosen to represent a causal effect; that is, the arrow must begin with the exogenous construct and end with the endogenous construct. This single arrow has been chosen to represent a causal effect because it is simple and straightforward.

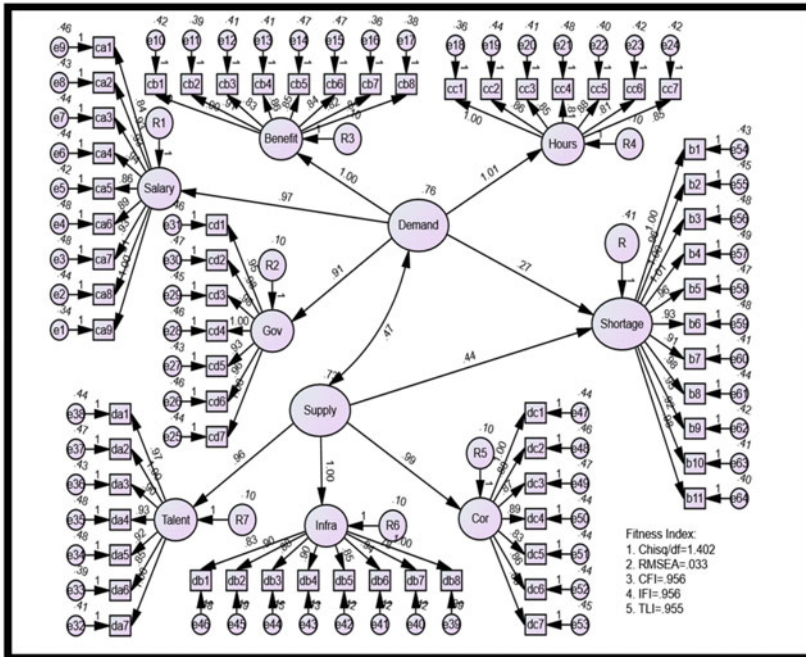


Fig. 1 Unstandardized estimates

(Bentler 1990) recommended that the chi-square normalised by degrees of freedom (Chisq/df) be less than 5.0, the Comparative Fit Index (CFI), the Goodness Fit Index (GFI), the Tucker-Lewis Index (TLI), and the Normal Fit Index (NFI) be all greater than 0.90 [7, 9, 40], and the Root Mean Square of Error Approximation (RMSEA) be less than 0.08. For the current model, it has met all of the requirement indices Chisq/df = 1.402; RMSEA = 0.033; CFI = 0.956; IFI = 0.956; TLI = 0.955, and has been determined to be suitable for the next step (Table 2).

The relationship between talent demand and talent supply was examined in detail. The findings revealed that both talent supply ( $\beta = 0.435$ , CR = 6.967) and talent demand ( $\beta = 0.273$ , CR = 4.714) were statistically significant when it came to the issue of talent shortage in the United States. The critical ratio (CR) is used as a guideline to indicate the research hypotheses when composing to the statistical significance of the data. Basic rule of thumb is that the CR should be greater than the 1.96 rule of thumb in order to achieve a statistically significant probability of either accepting or rejecting the null hypotheses.

Aside from this, it was discovered that all path estimates had a positive effect on the labour shortage: when talent demand increases by one unit, the labour shortage increases by 0.273 units, and when talent supply increases by one unit, the labour shortage increases by 0.435. In addition, result was discovered that the proposed model explained an acceptable significant percentage of the variance in talent shortage (43%). Specifically, (Shevlin and Miles 1998) stated that an R<sup>2</sup> value greater than 26% is considered to have a significant effect on the causal model. Because it makes significant contributions to the research on talent shortage in Malaysian IBIs, the structural model involving measuring the level of talent shortage is considered feasible and valid.

## 5 Conclusion

Overall, the study has accomplished its ultimate goal, which was to assess talent shortage with supply and demand perspective for the shortage of skilled workers among young generation for IBIs. Validity, normality, and fitness index have all been met by this model, which allows it to be used to execute SEM for the purposes of this study. As a result, this assessment has achieved the confirmatory value necessary for it to be generalised to the entire population of the study. All of the other hypotheses have been found to be obtained. This study has made a significant contribution to the work on talent shortage assessment among graduates from a theoretical standpoint and in the process of developing theories.

The talent supply factor was discovered to be significantly more competitive in the face of a talent shortage when compared to the talent demand factor. As previously stated, the higher the increment factor of talent supply, the greater the likelihood of a rise in the talent shortage factor. The development of talent should focus on up to date of infrastructure, competent of talent, and industrial applied curriculum that can substantiate with talent shortage in IBIs.

Talent supply, on the other hand, yields a diametrically opposed conclusion: as the contribution of the talent supply factor increases, the talent shortage will decrease. As a result, in the context of supply that is education institution, talent supply encompasses the structure of the organisation or ecosystem. Depending on the attribute provided by the higher education institution or organisation, a talent shortage could be created as a result of the benefit gained by the talent in an IBIs. Aside from that, the education institution factor does play a role in determining the competent for talent. Engagement of the education institution itself is a part of the crucial ecosystem, helping to develop talent and establish an appropriate competent talent in IBIs ecosystem.

For the purposes of summarising, this model is capable of providing significant information about a national talent shortage, particularly in the entry level talent ecosystem. Aside from that, the diversified of the respondents could be tested, including those from different industries, in the context of the study's talent section because it will generate a different perspective on the generation of findings.

**Acknowledgements** This research was supported by Ministry of Higher Education with the grant name Fundamental Grants Research Scheme (FRGS) FRGS/1/2020/SS02/UMK/02/2. We thank to our faculty member from University Malaysia Kelantan that provided insight and expertise that greatly assisted the research of this paper.

## References

- Awang, Z.: A Handbook on SME: For Academicians and Practitioners. MPWS Rich Resources (2014)
- Awang, Z.: SEM made simple: a gentle approach to learning structural equation modeling. MPWS Rich Publication (2015)
- Axelrod, E.L., et al.: War for talent, part two. *McKinsey Q.* **2**, 9 (2001)
- Aziz, M., et al.: The influence of employer value proposition in talent demand towards talent shortage in the Malaysian Islamic banking institutions: a SEM approach. *Manag. Sci. Lett.* **9**(6), 843–850 (2019)
- Aziz, M.I., et al.: Modeling talent shortage for entrepreneurship among student with government policy support as mediating effect: SEM approach. *Importance New Technol. Entrep. Bus. Dev. Context Econ. Divers. Dev. Ctries.* **194**, 2011 (2021)
- Aziz, M.I., et al.: Talent development model for a career in Islamic banking institutions: a SEM approach. *Cogent Bus. Manag.* **3**(1), 1186259 (2016)
- Bentler, P.M.: Comparative fit indexes in structural models. *Psychol. Bull.* **107**(2), 238 (1990)
- Burguet, R., Sákovičs, J.: Bidding for input in oligopoly. *Edinb. Sch. Econ. Discuss. Pap.* **266** (2016)
- Burn, J., Robins, G.: Moving towards e-government: a case study of organisational change processes. *Logist. Inf. Manag.* (2003)
- Cappelli, P.: A supply chain model for talent management. *People Strategy* **32**(3), 4–7 (2009)
- Cappelli, P.: Talent management for the twenty-first century. *Harv. Bus. Rev.* **86**(3), 74 (2008a)
- Cappelli, P.: *Talent on Demand: Managing Talent in an Uncertain Age*. Harvard Business School Press, Boston (2008b)
- Comin, D., Peng, K.K.: *Malaysia: The Economic Transformation Program (B)*. World Scientific Book Chapters, pp. 123–129 (2016)
- Crainer, S., Dearlove, D.: Death of executive talent. *Manag. Rev.* **88**(7), 16–23 (1999)

- Cram, L.: The European commission as a multi-organization: social policy and IT policy in the EU. *J. Eur. Public Policy*. **1**(2), 195–217 (1994)
- Darling-Hammond, L., Sykes, G.: Wanted, a national teacher supply policy for education: the right way to meet the “highly qualified teacher” challenge. *Educ. Policy Anal. Arch.* **11**, 33 (2003)
- Dewan, T., Myatt, D.P.: The declining talent pool of government. *Am. J. Polit. Sci.* **54**(2), 267–286 (2010)
- Elrick, T., Lewandowska, E.: Matching and making labour demand and supply: agents in Polish migrant networks of domestic elderly care in Germany and Italy. *J. Ethn. Migr. Stud.* **34**(5), 717–734 (2008)
- Fort, R., Winfree, J.: Sports really are different: the contest success function and the supply of talent. *Rev. Ind. Organ.* **34**(1), 69–80 (2009)
- Haggstrom, G.W.: Assessing teacher supply and demand. ERIC (1988)
- Hair, J.F., et al.: Editorial-partial least squares structural equation modeling: rigorous applications, better results and higher acceptance. *Long Range Plann.* **46**(1–2), 1–12 (2013)
- Hughes, J.C., Rog, E.: Talent management: a strategy for improving employee recruitment, retention and engagement within hospitality organizations. *Int. J. Contemp. Hosp. Manag.* **20**(7), 743–757 (2008)
- Iles, P., et al.: Talent management and HRM in multinational companies in Beijing: definitions, differences and drivers. *J. World Bus.* **45**(2), 179–189 (2010)
- Khniifer, M.: The human remains of Islamic finance. *Islam. Bus. Finance.* **36** (2010)
- Litman, B.R.: The television networks, competition and program diversity. *J. Broadcast. Electron. Media.* **23**(4), 393–409 (1979)
- Liu, R., et al.: An optimized decision-making algorithm for talent supply. *J. Interdiscip. Math.* 1–12 (2018)
- Michaels, E., et al.: *The War for Talent*. Harvard Business Press (2001)
- Miner, J.B.: *The Human Constraint; The Coming Shortage of Managerial Talent* (1974)
- Pessima, J.D., Dietz, B.: *Global Talent Management*. *The Wiley Handbook of Global Workplace Learning*, pp. 155–170 (2019)
- Romer, P.M.: Should the government subsidize supply or demand in the market for scientists and engineers? *Innov. Policy Econ.* **1**, 221–252 (2000)
- Saba, I., et al.: FinTech and Islamic finance-challenges and opportunities. *Rev. Econ. Dev. Stud.* **5**(4), 581–890 (2019)
- Schweyer, A.: *Talent Management Systems: Best Practices in Technology Solutions for Recruitment, Retention and Workforce Planning*. Wiley, Hoboken (2010)
- Shevlin, M., Miles, J.N.V.: Effects of sample size, model specification and factor loadings on the GFI in confirmatory factor analysis. *Personal. Individ. Differ.* **25**(1), 85–90 (1998). [https://doi.org/10.1016/S0191-8869\(98\)00055-5](https://doi.org/10.1016/S0191-8869(98)00055-5)
- Stephan, M., et al.: A dynamic perspective on next-generation offshoring: the global sourcing of science and engineering talent. *Acad. Manag. Perspect.* **22**(3), 35–54 (2008)
- Zhang, Z., et al.: Analysis of the talent demand and cultivation of safety engineering in the new normal. *Sci. J. Bus. Manag.* **5**(6), 206 (2018)
- Bank Negara Malaysia Annual Report 2020 - Google Search. <https://www.google.com/search?q=bank+negara+malaysia+annual+re>. Accessed 13 July 2021
- KPT – 2020. <https://www.mohe.gov.my/muat-turun/statistik/2020?> Accessed 13 July 2021
- Winning the War for Talent: Modern Motivational Methods for Attracting and Retaining Employees - Anaïs Thibault Landry, Allan Schweyer, Ashley Whillans (2017). <https://journals.sagepub.com/doi/abs/10.1177/0886368718808152>. Accessed 13 July 2021
- Workforce Crisis: How to Beat the Coming Shortage of Skills And Talent - Ken Dychtwald, Tamara J. Erickson, Robert Morison - Google Books. [https://books.google.com.my/books?hl=en&lr=&id=YOiqKakrS2oC&oi=fnd&pg=PA1&dq=Dychtwald&ots=nvPXFUM5Hj&sig=yuMYNz10d7N6rKyG3hfJWtGxTVM&redir\\_esc=y#v=onepage&q=Dychtwald&f=false](https://books.google.com.my/books?hl=en&lr=&id=YOiqKakrS2oC&oi=fnd&pg=PA1&dq=Dychtwald&ots=nvPXFUM5Hj&sig=yuMYNz10d7N6rKyG3hfJWtGxTVM&redir_esc=y#v=onepage&q=Dychtwald&f=false). Accessed 13 July 2021

# Achieving Islamic Financial Literacy in Malaysia: Issues and Challenges



**Azwan Abdullah, Muhammad Zulfaris Mohd Salleh, Mohd Nazri Zakaria, Noormariana Mohd Din, Mohd Ikhwan Aziz, and Mohd Zulkifli Muhammad**

**Abstract** It is unsurprising that the current pressures of the global economy encourage more people to save their money and protect their prosperities. Given the current unpredictable economic circumstances, the new generation must first become financially literate if they are to properly manage their personal resources throughout life. Indeed, financial literacy has a significant influence on the financial decisions that can affect an individual's financial well-being. This study therefore tries to explore factors that influence Islamic financial literacy among members of local communities. Qualitative research methods using interviews were applied in this study with the communities involved. Results of this study suggest that the factors of knowledge, religion and financial attitude play a great influencing role in propagating the Islamic financial literacy among the local communities participated. Besides, the study also noted that there were some levels of awareness concerning the topic of Islamic financial literacy among the communities when they truly understood its meaning and application in their daily lives. Hence, this study concludes that financial literacy is a basic tool that every consumer need in order to manage their finances avoid financial problems.

---

A. Abdullah

Institute for Poverty Research and Management (InsPeK), Universiti Malaysia Kelantan, Kota Bharu, Malaysia

e-mail: [azwan.a@umk.edu.my](mailto:azwan.a@umk.edu.my)

M. Z. M. Salleh · M. N. Zakaria · N. M. Din · M. I. Aziz (✉) · M. Z. Muhammad

Faculty of Entrepreneurship and Business (FEB), Universiti Malaysia Kelantan, Kota Bharu, Malaysia

e-mail: [ikhwan.a@umk.edu.my](mailto:ikhwan.a@umk.edu.my)

M. Z. M. Salleh

e-mail: [zulfaris.m@umk.edu.my](mailto:zulfaris.m@umk.edu.my)

M. N. Zakaria

e-mail: [mnazri.z@umk.edu.my](mailto:mnazri.z@umk.edu.my)

N. M. Din

e-mail: [mariana.md@umk.edu.my](mailto:mariana.md@umk.edu.my)

M. Z. Muhammad

e-mail: [zulkifli.m@umk.edu.my](mailto:zulkifli.m@umk.edu.my)

**Keywords** Islamic financial literacy · Communities

## 1 Introduction

It is unsurprising that the current pressures of the global economy encourage more people to save their money and protect their prosperities. Given the current unpredictable economic circumstances, the new generation must first become financially literate if they are to properly manage their personal resources throughout life. Indeed, financial literacy has a significant influence on the financial decisions that can affect an individual's financial well-being. Moreover, financial literacy is a crucial component in managing one's finances at every stage of life. In general terms, financial literacy can be defined as a collection of skills that enable people to expense their money prudently which consequently allows them to prepare for a better future and has a direct impact on their financial well-being (Basu 2005). According to (Ab Rahman et al. 2018), financial literacy not only teaches the fundamentals of finance but also guides one on financial planning, money management, budgeting, debt management, creditworthiness, saving and investing. Meanwhile, according to Lahsasna (2016), financial literacy is described as the ability to understand finance. On the other hand, (Abdullah et al. 2017) asserted that the majority of findings of past studies demonstrate how the conceptual definitions of financial literacy can essentially be divided into five classifications as per the following:

- Understanding of financial concepts;
- Possessing skills to communicate financial concepts;
- Having abilities to manage personal funds;
- Having abilities to make sound financial judgments; and
- Having assurance in financial planning for future demands.

Thus, financial literacy can be defined as a measure of one's understanding of fundamental financial concepts as well as one's abilities and skills to manage personal resources through proper, long-term financial planning and short-term decision making. Meanwhile, according to Abdullah et al. (2017), Islamic financial literacy is defined as the capacity to comprehend finance in accordance with the *Shariah* law. Indeed, the lack of Islamic financial literacy among Muslims generates many socioeconomic problems that Muslims should heed and that equipping oneself with knowledge of Islamic finance is also part of a Muslim's religious obligations. In fact, for many Muslims, using the traditional money system is unquestionably immoral.

Meanwhile, (Ana and Wan Ahmad 2020) explained that because there is a scarcity of literature on the topic of Islamic financial literacy, no description of the concept was identified except in Er and Mutlu (2017) which described it as a knowledge gained through learning and self-experience and is directly correlated to key conceptions and products of Islamic finance. It can thus be summarized that Islamic financial literacy is defined as one's ability to understand Islamic financial products and concepts.



## 2 Problem Statement

When looking closely at the current context of the Malaysian economy, the high rates of household debt and bankruptcy naturally raise several red flags. According to the Central Bank of Malaysia (BNM), the Malaysian household debt to GDP (Gross Domestic Product) increased to 89.1% in 2015. In addition, the national household expenditure climbed from RM120 billion in 2013 to RM144 billion in 2015. Furthermore, according to the Malaysian Institute of Economic Research (MIER), the confidence index (households' existing and predicted financial status) in 2016 was the lowest, at a rate of 63.80 compared to previous years.

According to Lukonga (2015), consumer protection and financial literacy are critical pillars in ensuring the creation of a strong and steady financial system. This indicates the urgency for a more widespread education on Islamic financial literacy among more Muslim communities. In fact, Malaysia as a developing country is not to be overlooked as it is one of the countries in the region with the lowest level of financial literacy (Lahsasna 2016). Way before the advent of modern economics as we know it today, only a small percentage of society had any knowledge of budgeting, saving, investing or insuring. Therefore, the study acknowledges that a large number of future studies on Islamic financial literacy need to be undertaken in order to fill in the literary gaps needed to create better understanding on the topic as well as satisfy the gaps in Islamic financial literacy research in Malaysia.

As far as academic literatures are concerned, Islamic financial literacy is a relatively recent subject that is still in its infancy. Apart from governments, Islamic financial institutions also have launched numerous initiatives to educate the public on the topic. For example, several academic institutions in many countries throughout the world are now offering programmes and professional courses linked to Islamic finance. Notwithstanding that praiseworthy effort and despite the necessity to inculcate financial literacy in every segment of society, research has revealed that the existing educational capacity is not ideal and inadequate to sustain the educational need of the world's population on financial literacy, particularly in emerging and poor countries. In general, people in these countries have low financial literacy due to challenges such as having a complex financial life, the low availability of numerous options when making financial decisions, and a lack of time and money to educate themselves with knowledge concerning the management of personal finance (Rahman et al. 2018).

Malaysia is classified as a developing country and is not to be overlooked as one of the countries in the region with the lowest level of financial literacy (Lahsasna 2016). In parallel with this, (Kimiyağhalam and Yap 2017) asserted that more studies on Islamic financial literacy is needed. This study is therefore conducted to fill in the gaps on the topic of Islamic financial literacy research in Malaysia.

### 3 Literature Review

Financial literacy has been widely recognized as one of the essential skills needed for individuals confronting increasingly complex financial scenarios. Despite its critical role, several studies show that the world's population perpetually suffer from poor financial literacy and that putting in place measures to solve this issue are urgently needed. According to Hafizah et al. (2016), financial literacy has been universally regarded as one of the crucial pillars for the achievement of financial inclusion programmes. Being equipped with financial literacy enables consumers to make more efficient and effective decisions related to the monetary aspect of their lives.

(Er and Mutlu 2017) described religiosity as the extent to which a person follows all the rules and regulations ordered by his or her religion. People of faith are obliged to obey to all of principles of their religion and apply them in their daily life. Thus, it is not an exaggeration to say that religion plays a significant role in influencing how people make financial choices. In other words, when a person earn with his own money, he is obliged to follow the religious rules surrounding money (Kimiyağhalam and Yap 2017). This notion is also supported by Muslichah et al. (2019) who revealed a significant correlation between religion and financial literacy.

Dynamically, knowledge can be gained through self-reading and personal experiences. For instance, one can manage to obtain financial knowledge in products where the final aim is to enhance customers learning on financial literacy and at the same time to be well educated in financial product fields by studying the topic diligently and carrying out social experiments. In regard to knowledge concerning the public's urgent need for financial education, most policymakers are in fact aware of its importance. This awareness can help mitigate the negative consequences of poor decision making due to low financial knowledge.

The inadequacy of social awareness on financial requirements, the lack of knowledge on existing financial products and performance, and the lack of information on where and how financial products and services can be obtained are all key signs of inadequate financial literacy (Mändmaa 2019). Enhancing the awareness among customers to recognize that Islamic financial services follow the *Shariah* standards has resulted in a newer increased concentration of Islamic finance around the world. This development leads to more Muslim customers feeling easier to accept products and services that are in line with their faith and at the same time provides choices for non-Muslim customers.

Based on previous studies, financial literacy is deemed extremely crucial for encouraging better understanding among consumers on how to make choices of daily expense by producing incentives and conditions that encourage preferred financial behaviours like saving, planning or prudent spending (Hafizah et al. 2016). Furthermore, financial literacy is also defined by past research as the customers' confidence and ability to understand financial products and concepts by recognizing financial risks and chances, to decide the best choices, to know where to seek guidance and how to enhance their financial management by taking proactive measures (Hafizah et al. 2016).

## 4 Issues and Challenges in Achieving Islamic Financial Literacy

The desire for a luxurious lifestyle has driven many around the world, particularly, the younger generation to spend beyond their financial means, consequently leading them into debt and to some extent, bankruptcy (Nuradibah et al. 2018). This phenomenon is in direct opposition to an Islamic teaching that encourages moderate spending and taking in debt only for serious purposes. Truly, Islamic financial illiteracy can contribute to combatting numerous economic threats such as the exponential increase of unmanageable debt burdens that typically result in inefficient financial choices or poor future planning. Again, it needs to be emphasized that poor financial literacy can contribute to poor credit expenses, bankruptcy or other unfavourable impacts. The Malaysia's National Strategy for Financial Literacy 2019–2023 policy contributes in supporting the Government's goal of shared prosperity by ensuring that all Malaysians are equipped with the knowledge and skills that can help them make the best financial decisions at all stages of their lives confidently. This policy dictates that financial education must be provided to all Malaysians of all ages and at all stages of life and the study believes that this policy objective can only be accomplished by stakeholders working together. The study also noted that here are several challenges faced by local communities in the development of their financial literacy.

Indeed, financial literacy is not only a personal problem, but also a problem that plagues an entire nation. The lack of understanding and knowledge about savings may negatively impact one's life relationships. Financial failures can also contribute to a failure in meeting daily life expenses (Firli 2016). This means that financial literacy should be implemented by every member of every segment of a society regardless of gender, status and socioeconomic backgrounds. In addition, (Pati 2021) claimed that insufficient financial knowledge can contribute to inconsistent financial decisions being made regularly. This claim is also supported by Kimiyaghalam and Yap (2017) who said that financial illiteracy can result in excessive debt and poor financial judgments. Furthermore, it can also create budget misalignment, expenses beyond income, indebtedness, low credit score and the tendency to be involved in financial fraud activities.

Moreover, (Ameliawati and Setiyani 2018) stated that an individual with positive financial mind set will typically also have strong financial knowledge. In contrast, those with poor financial attitude will create negative impacts their financial literacy. Consumers with excellent financial literacy can make better decisions about financial products that will benefit them in the future. Furthermore, (Rai et al. 2019) indicated that the consumers' financial literacy may be framed by their attitude towards money in which people with a positive attitude towards money and finance can easily change their negative financial behaviour in order to improve their financial literacy and awareness. However, their financial decision-making skills would still be weakened as a result of their bad behaviour. For instance, the desire for a luxurious lifestyle can drive consumers to spend beyond their means which can consequently lead them into debt (Nuradibah et al. 2018). Indeed, this behaviour is in direct opposition to a

universal religious teaching that encourages moderate spending and allows utilizing debt only for serious purposes.

It is critical today more than ever to actively propagate financial literacy among consumers since it can reduce the possibilities of many from being misled while making decisions on their purchases both online and offline. The level of awareness on financial products and services one has is an important indicator in measuring one's level of financial literacy. At the same time, financial goods are likewise becoming more complicated. As a result, consumers are increasingly exposed to new financial risks and goods that are more complex and advanced. Therefore, authorities must make it their priority to place a high focus on financial literacy education among consumers. Indeed, inadequate social awareness on financial requirements, lack of knowledge on existing financial products and performance, and lack of information on where and how financial products and services can be obtained are all crucial signs of a lack of financial literacy among consumers (Mändmaa 2019).

On top of that, (Rahim et al. 2016) also stated that Islam promotes moderation in spending as well as limits the use of debt only for genuine needs. Islam discourages the use of debt as being in debt not only leads to the increase in financial burden, but that it can also cause emotional burden. (Lahsasna 2016) also agreed that Muslims cannot separate religion from their day-to-day affairs. The author believes that all acts of a Muslim including his or her financial dealings should be in line with the *Shariah* law. Moreover, financial literacy is critical to this inquiry as it will contribute significantly to stakeholders such as the Government, the academics, the industry players and students who need to make financial decisions and that financial literacy can have a significant effect on an individual's financial well-being. The study believes that there are several strategies that can be employed in order to raise the financial literacy of consumers.

First, the study believes that the Government and financial authorities like the banking institutions and related agencies can work together to articulate strategies that can expedite Malaysia to become the top player in advocating for Islamic financial literacy and eventually becoming the Asian Islamic financial literacy hub. These stakeholders have the capacity to make an immediate difference in their local communities. Second, financial advisers should embrace their role as instructors and educate their clients on topics such as investing, debt management, risk mitigation and budgeting. Third, local communities should also make an effort to learn and understand each of the documents they are completing as well as what is being done with their money and why. Fourth, the Government must formulate effective strategies and policies towards increasing the public's financial literacy. These strategies and policies will also assist policymakers and applied researchers in closing the financial literacy gap. This can be achieved by them focusing on developing policies and initiatives to help communities improve their financial literacy.

Fifth, academicians can also help raise the public understanding of financial literacy. Truly, any effort to improve the financial literacy of the public is insufficient if it stops only at formal education. This is because the financial awareness, knowledge, abilities, attitudes and manners are not only affected by household socialization of consumers, but that they are also greatly influenced by existing surroundings like

their learning environments, their daily life activities, relations with their friends and the harmonization of their relationships. Thus, the study notes that it is critical for all stakeholders to work together in developing an effective initiative that can educate people on financial information and equip them with selected abilities in order to improve the level of financial literacy among them and secure their financial well-being in the long run. In addition, academic programmes offered on finance must also be congruent with the learning environment and be sensitive to local values and cultures.

Sixth, industry players can encourage consumers to acquire a set of talents that enable them to spend their money rationally and prepare them for a brighter future which consequently have a direct impact on their long-term financial protection. Furthermore, the industry participants should be encouraged to develop fundamental financial awareness and assist local communities in doing so. In order to achieve economic balance and change financial education into financial awareness, it is essential for consumers to be equipped with selected key skills in order to manage their budgets, and hence regulate their spending and debts. Offering financial education to all segments of society at all levels of socioeconomic life will eventually result in the creation of a more economically successful country. An improved financial literacy of an individual will consequently eliminate financial exclusion and facilitate his or her greater access to financial markets.

## 5 Conclusion

Financial literacy has long been recognized as a key tool and skill that equips consumers with the appropriate knowledge on how to manage financial resources effectively, especially in increasingly complex financial scenarios. Despite its significance, studies around the world indicate that much of the world's population still suffer from financial illiteracy and that measures to remedy the problem are urgently needed. Financial literacy is a crucially important tool to acquire to ensure that individuals make the best and the soundest judgment on various financial decisions such as borrowing, investing as well as preparing for retirement. Indeed, financial literacy is a basic tool that one needs in order for one to avoid financial problems. Financial literacy can help consumers make effective use of financial products and services and plan for their short term and long-term financial goals. Hence, it is necessary to take into consideration the execution of appropriate practices and efforts made by not only financial institutions but also the Government and established Islamic financial institutions of on the propagation and effective education of Islamic financial literacy among Muslim communities.

## References

- Ab Rahman, S., et al.: Determinant factors of islamic financial literacy in Malaysia. *Am. J. Humanit. Soc. Sci. Res.* **10**, 125–132 (2018)
- Abdullah, M.A., et al.: Factors determining Islamic financial literacy among undergraduates. *J. Emerg. Econ. Islam. Res.* **5**(2), 67 (2017). <https://doi.org/10.24191/jeeir.v5i2.8805>
- Ameliawati, M., Setiyani, R.: The influence of financial attitude, financial socialization, and financial experience to financial management behavior with financial literacy as the mediation variable. *KnE Social Sci.* **3**(10), 811 (2018). <https://doi.org/10.18502/kss.v3i10.3174>
- Ana, A.S., Wan Ahmad, W.M.: Financial literacy among Malaysian Muslim undergraduates. *J. Islam. Account. Bus. Res.* **11**(8), 1515–1529 (2020). <https://doi.org/10.1108/JIABR-10-2017-0149>
- Basu, S.: *Financial Literacy and the Life Cycle*. Financ. Plan. Assoc. Wash. DC. (2005)
- Er, B., Mutlu, M.: Financial inclusion and islamic finance: a survey of islamic financial literacy index, 33–54 (2017). <https://doi.org/10.25272/j.2149-8407.2017.3.2.02>
- Firli, A.: Factors that influence financial literacy: a conceptual framework. *J. Phys. Conf. Ser.* **755**, 1 (2016). <https://doi.org/10.1088/1742-6596/755/1/011001>
- Hafizah, S., et al.: Factor analysis of islamic financial literacy and its determinants : a pilot study (2016)
- Kimiyaghalam, F., Yap, S.: *Level of financial literacy in Malaysia* (2017)
- Lahsasna, A.: *Framework of islamic financial education and literacy* (2016)
- Lukonga, I.: *Islamic Finance, Consumer Protection and Financial Stability*. 2015 International Monetary Fund (2015)
- Mändmaa, S.: Analyzing the factors influencing university students. *Finan. Literacy* **7**, 7 (2019)
- Muslichah, I., et al.: The effect of religiosity and financial literacy on intention to use Islamic banking products. 1 (2019). <https://doi.org/10.1108/AJIM.vol1.iss2.art2>.
- Nuradibah, M., et al.: A Preliminary evaluation of financial literacy in Malaysia. *J. Wealth Finan. Plan.* **5**, 4–16 (2018)
- Pati, S.: What is financial literacy? how to improve your skills? | Scripbox, <https://scripbox.com/mf/what-is-financial-literacy/>, Accessed 16 June 2021
- Rahim, S.H.A., et al.: Islamic financial literacy and its determinants among university students: an exploratory factor analysis. *Int. J. Econ. Finan. Issues.* **6**(7), 32–35 (2016)
- Rahman, S.A. et al.: The Significance of Islamic Financial Literacy among Youth in Malaysia. *7*, 10, 27–31 (2018).
- Rai, K., et al.: Association of financial attitude, financial behaviour and financial knowledge towards financial literacy: a structural equation modeling approach. *FIIB Bus. Rev.* **8**(1), 51–60 (2019). <https://doi.org/10.1177/2319714519826651>

# Zakat Payers' Satisfaction as a Mediator in the Relationship Between Service Quality and Zakat Payers' Trust



Rufaidah Mat Nawi, Nadzirah Mohd Said, and Hazriah Hasan

**Abstract** This study proposed a research model to examine the relationship between service quality, zakat payers' satisfaction, and zakat payers' trust in a particular zakat institution. Questionnaires were completed by 553 zakat payers who had experience paying zakat either through the institution or its proxies. Data were analyzed using partial least squares structural equation modeling. The findings reveal relationships between service quality and zakat payers' trust, service quality and zakat payers' satisfaction, and zakat payers' satisfaction and zakat payers' trust. Zakat payers' satisfaction was revealed as a mediator in the relationship between service quality and zakat payers' trust. Therefore, zakat institutions must focus on service quality to increase zakat payers' satisfaction and trust. Implications are discussed concerning service quality management in the zakat sector.

**Keywords** Mediating effect · Service quality · Zakat payers' satisfaction · Zakat payers' trust · Zakat institution

## 1 Introduction

Self-distribution zakat payment has increased from year to year in Malaysia. Even though specific laws prohibit the self-distribution practice, the act continues to grow because zakat payers believe that the zakat payment should reach the zakat recipients regardless of which channels they have to do. Information technology is accelerating the zakat industry revolution. To secure zakat payers' compliance behavior, zakat institutions need to gain trust from zakat payers. Therefore, zakat institutions need to provide quality service to ensure zakat payers' satisfaction and trust. Many researchers have found that better customer service leads customers to commit to service providers (Cho and Hu 2009). In zakat, good quality of service is crucial to increase zakat compliance in zakat payers.

---

R. M. Nawi · N. M. Said (✉) · H. Hasan  
Faculty of Entrepreneurship and Business, Universiti Malaysia Kelantan, Pengkalan Chepa,  
16100 Kota Bharu, Kelantan, Malaysia  
e-mail: [nadzirah.ms@umk.edu.my](mailto:nadzirah.ms@umk.edu.my)

Zakat compliance behavior is the key to zakat institutions' sustainability to secure the optimum amount of zakat collections. Zakat compliance behavior reduces leakage in zakat collection and increases zakat payment (Mokhtar et al. 2018). To ensure zakat payers' satisfaction and zakat payers' trust, zakat institutions must focus on service quality. In a world with revolution information technology, the focus should be both traditional and electronic service quality. Zeithaml et al (2000) developed e-SERVQUAL as an updated version of the traditional SERVQUAL model to measure electronic service quality in the Internet setting. The multi-item scale has seven dimensions: efficiency, reliability, fulfillment, privacy, responsiveness, compensation, and contact. Zeithaml et al. (2002) defined e-service as efficiency and effectiveness purchased by customers of electronic services. However, e-SERVQUAL did not thoroughly analyze customer satisfaction, customer trust, and customer loyalty compared to measurement scales developed by Chu et al. (2012). Their study examined the link between e-service quality, customer satisfaction, customer trust, and loyalty in the context of e-banking in Taiwan (Chu et al. 2012).

However, this study studied service quality focused on both traditional and electronic service quality. The relationship of service quality with zakat payers' satisfaction and zakat payers' trust will be examined. This study attempts to fill the gaps left by previous researchers who focused on developing scales to measure traditional service quality instead of relationships with other constructs (Ghani et al. 2012; Wahab et al. 2016). This study also highlights the mediating effect of zakat payers' satisfaction on the relationship between service quality and zakat payers' trust.

The residue of this paper is structured as follows. The succeeding section reviews the related literature on service quality, customer satisfaction, and trust. The following section presents the research methodology. The subsequent section outlines the results. The final section concludes this study.

## **2 Service Quality and Zakat Payers' Satisfaction in Zakat Payers' Trust Model**

Many studies have been conducted on service quality in the zakat context. For example, (Ghani et al. 2012) in their study developed an instrument, namely INOPERF (Islamic Non-profit Organization Per Formance), to measure service quality performance. This instrument, which was based on the Carter instrument, was deemed fit to measure the service quality of zakat institutions. Wahab et al. (2016) later used the developed instrument to examine the impact of service quality on customer satisfaction against the five dimensions of reliability, tangible, empathy, responsiveness, and compliance. Some studies used service quality as a determinant in their research models (Zainal et al. 2016; Noor and Saad 2016).

However, previous studies mainly focused on traditional service quality. In other words, the previous scales and instruments mainly catered to the evaluation of service quality over the counters. Service quality should be examined and evaluated broader



than traditional service quality since zakat payers can now pay zakat payment through many channels. Some prefer to pay through the counters and representatives, and some choose to make payment through the e-zakat payment. Therefore, if service quality should be appraised, the appraisal must cover both traditional and electronic channels.

In the pre-covid19 era, where the traditional channel was preferred, more zakat payers are encouraged to make online payments after the shocking pandemic. The pandemic caused more zakat payers to be adept at paying zakat through online payment and shifted from the traditional channel as they found it more convenient (COVID-19: Bayar zakat fitrah dalam talian 2020). Due to this new transition, a new way to measure service quality must be found. Regardless, it involves traditional or electronic service quality; service quality is crucial for a successful method to gain zakat compliance behavior that cannot be debunked (Saad et al. 2019). Rasheed and Abadi (2014) found that improving service quality increases more loyal customers.

Trust comprises beliefs about an exchange partner's benevolence, competence, honesty, and predictability and is an essential element of successful relationships (Moorman et al. 1992, 1993). In the context of zakat, trust is a series of beliefs regarding the attributes that zakat payers may or may not trust a zakat institution to exhibit.

Trust is gained from customers when satisfied with the service providers in traditional business environments if they observe those service providers fulfill specific requirements they set for those service providers (Parasuraman et al. 1988). However, from the perspective of online environments, there are fewer tangible aspects. The focus of requirements from customers mainly revolves around service attributes such as the reliability of the information, availability of the website, and efficiency of transaction execution (Chu et al. 2012). In short, the difficulty of setting pre-consumption expectations of service quality in online environments makes the customers trust the service provider through their experience (Zeithaml 2000). As a result, in this study, the evaluation for service quality is simplified to fit both traditional and electronic environments, thus creating a relatively simple scale for measuring service quality.

Chang et al. (2013) in their study revealed that service quality positively influenced patients' trust since their study involved the relationship between hospitals (service providers) and patients (service recipients). Cho and Hu (2009) their earlier studies that focused on a financial institution found that service quality significantly affected customer trust. Service quality is well established as a determinant of customer satisfaction in numerous studies (Janahi and Mubarak 2017; Casidy 2014). Wahab et al. (2016) found that improving service quality increased more satisfied customers.

Customer satisfaction is defined as customers' evaluation based on the difference between their pre-purchase expectation and post-purchase experience (Kotler and Armstrong 1999; Oliver 1981). Customers are usually satisfied if the post-purchase experience exceeds their pre-purchase expectations. In the context of zakat payers, zakat payers' satisfaction is defined as a good feeling that zakat payers have when they hope that zakat institutions do something on behalf of their payment. The institutions do perform the deeds and fulfill their expectations. However, a lack of recently reported studies proved customer satisfaction was a determinant of trust. However,

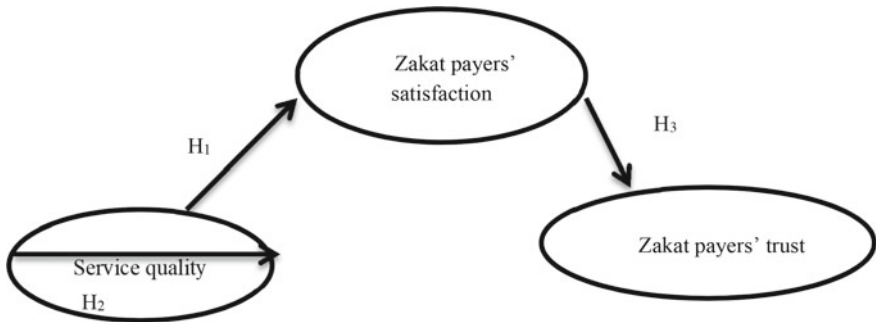


Fig. 1 Research model

Chu et al. (2012) did find a positive and direct link between customer satisfaction and customer trust in their study on e-banks in Taiwan. Previous studies focused on trust as a mediator in the relationship between service quality and customer satisfaction (Kundu and Datta 2015) and trust as the antecedent of customer loyalty (Trif 2013; Suki 2011). This study intends to enrich the literature on zakat payers' satisfaction as an antecedent of trust and a mediator in the relationship between service quality and zakat payers' trust. Based on the preceding literature review, the causality model in this study was proposed, as shown in Fig. 1.

### 3 Methodology

#### 3.1 Measures

Multi-item scales derived from previous research were used to measure the study variables, with all items rated on 6-point Likert-type scales (1 = completely disagree, 6 = completely agree). The empirical data gained in this study were drawn from zakat payers of 10 districts in Kelantan, Malaysia, and PLS-SEM was used as the primary analysis tool.

A PLS model is usually analyzed and interpreted in two stages (Hulland 1999). The first stage involves the validity and reliability analyses to measure the model. In this stage, every measure in the model is tested. In the second stage, the paths between the constructs in the model are estimated to test the structural model. The predictive ability of the model is also being determined at this stage. These stages must be done subsequently to make sure the model uses the reliable and valid measures of the constructs before concluding the nature of the construct relationships.

**Table 1** Demographic characteristics of respondents

		<i>n</i>	%
Gender	Male	387	70.0
	Female	166	30.0
Age	Under 30	166	30.0
	31–40	291	52.6
	41 and above	96	17.4
Education	Under high school	26	4.7
	High school	162	29.3
	Diploma	99	17.9
	University	243	43.9
	Graduate school+	23	4.2
Income per month (MYR)	Less than 3,000	343	62.0
	3,001–5,000	201	36.4
	5,001+	9	1.6

Note: *N* = 553

### 3.2 Sample and Procedure

1000 questionnaires were dispatched to individual zakat payers with experience dealing with a zakat institution and its proxies in Kelantan. There were 553 valid responses obtained. A description of the responses broken down by demographics can be found in Table 1.

## 4 Results

PLS was used in this study to perform the analysis of the research model depicted in Fig. 1. The outputs from the PLS software were used first to test the measurement model and then test the fit and performance of the structural model. PLS structural equation modeling was applied to test the relationships among the constructs (Fornell and Cha 1994). Specifically, the employment of SMARTPLS allows for simultaneous testing of hypotheses (Ringle et al. 2005), multi-item measurement, the use of both reflective and formative scales (Fornell and Bookstein 1982), and is capable of doing additional analysis for mediation and moderating effect (Basbeth and Ibrahim 2018). Results for SMARTPLS are shown in Table 2, Table 3, and Fig. 2.

Reliability was measured using the internal consistency index (Fornell and Larcker 1981), with a measure that will be considered reliable if the index reached at least 0.70 (Nunnally 1978). The reliability result is as reported in Table 2. Convergent validity was assessed using the average variance extracted (AVE), standard output from SMARTPLS. Measures with an AVE of 0.50 or higher exhibit convergent validity (Chin 1998). The AVEs reported in Table 2 all exceed 0.60, confirming that all measures demonstrated satisfactory convergent validity.

**Table 2** Reliability and convergent validity (AVE)

Construct and Item	M	SD	Loading
Service quality (CR = 0.95, AVE = 0.68)			
Sq1	5.55	0.990	0.785
Sq2	5.34	1.063	0.823
Sq3	5.31	1.095	0.837
Sq4	5.28	1.128	0.837
Sq5	5.33	1.159	0.796
Sq6	5.27	1.303	0.824
Sq7	5.11	1.307	0.856
Sq8	5.13	1.340	0.846
Zakat payers' satisfaction (CR = 0.96, AVE = 0.86)			
Zps1	4.87	1.205	0.920
Zps2	4.89	1.169	0.944
Zps3	4.90	1.222	0.910
Zakat payers' trust (CR = 0.96, AVE = 0.67)			
Zpt1	5.58	0.968	0.718
Zpt2	5.42	0.980	0.776
Zpt 3	5.36	1.053	0.842
Zpt4	5.28	1.172	0.803
Zpt5	5.31	1.212	0.760
Zpt6	5.32	1.158	0.775
Zpt7	5.40	1.088	0.794
Zpt8	5.27	1.342	0.809
Zpt9	5.16	1.303	0.857
Zpt10	5.14	1.339	0.886
Zpt11	5.12	1.392	0.872
Zpt12	5.10	1.386	0.851
Zpt13	5.11	1.389	0.834
Zpt14	5.22	1.331	0.829

Note: CR = Composite reliability, M = Mean, SD = Standard deviation

**Table 3** Latent variable correlation matrix: discriminant validity

	Service quality	Zakat payers' satisfaction	Zakat payers' trust
Service quality	0.824		
Zakat payers' satisfaction	0.644	0.925	
Zakat payers' trust	0.704	0.572	0.816

Note: Square root of AVE is on diagonal

Discriminant validity is established using the latent variable correlation matrix, which has the square root of AVE for the measures on the diagonal, and the correlations among the measures as the off-diagonal elements (see Table 3). The matrix must be constructed from the PLS output. Discriminant validity is determined by

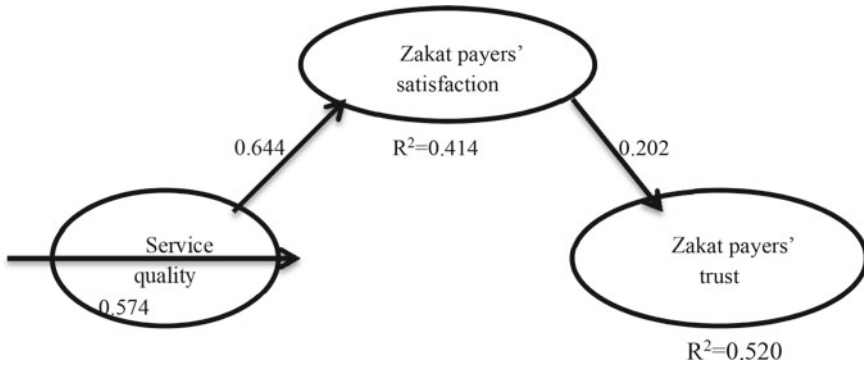


Fig. 2 PLS structure model results

looking down the columns and across the rows and is deemed satisfactory if the diagonal elements are larger than off-diagonal elements. Discriminant validity was demonstrated for our model, as these conditions are satisfied (see Table 3).  $R^2$  values indicate the predictive ability of the independent variables. Zakat payers' satisfaction and zakat payers' trust with  $R^2$  values of 0.414 and 0.520, respectively, are considered to provide adequate evidence of the model's predictive ability (shown in Fig. 2). Additionally, path coefficients are reported in Fig. 2.

## 5 Conclusion

This study aimed to explore the link between service quality and zakat payers' trust and establish whether or not the latent variable of zakat payers' satisfaction influences this link. The zakat payers in this study were predominantly male and between 31 to 40 years of age. As with any service quality, it is known as a determinant of customer satisfaction (Chu et al. 2012). With the increased technology-centric and information-based era, the need to study service quality from both physical and virtual angles becomes significantly essential (Lee et al. 2011). Given that service quality attributes can potentially affect zakat payers' attitudes toward a zakat institution, pursuing service quality during physical and virtual payment, enhancing zakat payers' satisfaction and zakat payers' trust are good suggestions. To this end, we have proposed a research framework supported by the PLS structural equation modeling. Given the findings gained in this study, it appears that we were able to establish a direct link between service quality and zakat payers' satisfaction, between service quality and zakat payers' trust, and between zakat payers' satisfaction and trust. In addition, it was found that zakat payers' satisfaction was indeed a mediator in the relationship between service quality and zakat payers' trust. In other words, a zakat institution must gain trust from its zakat payers by providing excellent service

quality physically and virtually. Excellent physical and virtual service quality impacts the zakat payers' satisfaction and gains their trust.

The relationship between zakat institutions and zakat payers is the key to sustaining the institutions as the bridge between zakat payers and zakat recipients. Trust, in this case, is a competitive advantage. The development of a global logistics system and the awareness of social distancing increase the zakat collection by the zakat institutions if they increase Internet technologies with information applications. This study proves that service quality and zakat payers' satisfaction positively influence zakat payers' trust. Therefore, the institutions can use relationship marketing to foster zakat payers' trust, increase their medium of interaction with zakat payers and aim for compliance (Cho and Hu 2009). The compliance from zakat payers can reduce the self-distribution of zakat payment. In the long term, old zakat payers can be retained, and new zakat payers will be attracted. The institutions can successfully reduce the leakage in zakat collection.

The findings from this study provide several implications for service quality management generally and service specifically. To establish good relationships with their zakat payers, zakat institutions must enhance their service quality through physical and e-zakat payment. In this way, they can obtain the satisfaction and trust of zakat payers. Future researchers could investigate whether poor service quality leads to reducing zakat payers' satisfaction.

The results gained in this research must be considered in the light of limitations related to the sample and measures utilized. This study is generalizable only in the Kelantan state context. These limitations can be overcome in future studies by using samples from all the states in Malaysia.

In conclusion, this research provides theoretical and practical contributions to the literature on zakat payers' trust. From the theoretical perspective, this proposed model includes measures from Chu et al. (2012), which fit to accommodate the nature of zakat payers who paid zakat via counters and online channels. The measures also deviated from the measures of service quality developed by Wahab et al. (2016), which was more specialized for a zakat institution. From a practical perspective, the findings in this study provide insights for zakat institutions and zakat payers. The findings guide zakat institutions to focus on zakat payers' segmentation and other marketing initiatives to increase zakat collection.

Thus, further studies may reflect other dimensions in exploring the issue of zakat payers' trust. Furthermore, future research should outspread the findings to a large sample in each state to increase the generalizability of the results derived in the current study. Another potential in the research framework is to explore the effect of zakat payers' trust on zakat compliance behavior in future studies.

## References

- Basbeth, F., Ibrahim, M.A.H.: Four Hours Basic PLS-SEM: A Step by Step Guide with Video Clips. iPRO Publication, Selangor, Malaysia (2018)



- Casidy, R.: Linking brand orientation with service quality, satisfaction, and positive word-of-mouth: evidence from the higher education sector. *J. Nonprofit Public Sect. Mark.* **26**(2), 142–161 (2014)
- Chang, C.-S., Chen, S.-Y., Lan, Y.-T.: Service quality, trust, and patient satisfaction in interpersonal-based medical service encounters. *BMC Health Serv. Res.* **13**(22), 1–11 (2013)
- Chin, W.: *The Partial Least Squares Approach for Structural Equation Modeling. Modern Method for Business Research.* Lawrence Erlbaum Associates, Mahwah, NJ (1998)
- Cho, J.E., Hu, H.: The effect of service quality on trust and commitment varying across generations. *Int. J. Consum. Stud.* **33**, 468–476 (2009)
- Chu, P.-Y., Lee, G.-Y., Chao, Y.: Service quality, customer satisfaction, customer trust, and loyalty in an e-banking context. *Soc. Behav. Pers.* **40**(8), 1271–1284 (2012)
- COVID-19: Bayar zakat fitrah dalam talian (22 April 2020). BHonline. <https://www.bharian.com.my>. Accessed 18 Jan 2020
- Fida, B.A., Ahmed, U., Al-Balushi, Y., Singh, D.: Impact of service quality on customer loyalty and customer satisfaction in Islamic banks in the Sultanate of Oman. *SAGE Open* **10**(2), 1–10 (2020)
- Fornell, C., Bookstein, F.L.: Two structural equation models: LISREL and PLS applied to consumer exit-voice theory. *J. Mark. Res.* **19**, 440–452 (1982)
- Fornell, C., Cha, J.: *Partial Least Squares in Advanced Methods of Marketing Research.* Blackwell, Cambridge, MA (1994)
- Fornell, C., Larcker, D.F.: Evaluating structural equation models with unobservable variables and measurement error. *J. Mark. Res.* **18**, 39–50 (1981)
- Ghani, E.K., Said, J., Yusuf, S.N.S.: Service quality performance measurement tool in Islamic non-profit organisation: an urgent need. *Int. Bus. Manag.* **5**(2), 71–75 (2012)
- Hulland, J.: Use of partial least squares (PLS) in strategic management research: a review of four recent studies. *Strateg. Manag. J.* **20**, 195–204 (1999)
- Janahi, M.A., Mubarak, M.M.S.A.: The impact of customer service quality on customer satisfaction in Islamic banking. *J. Islam. Market.* **8**(4), 595–604 (2017)
- Kotler, P., Armstrong, G.: *Principles of Marketing* (8th ed.). Prentice-Hall, Englewood Cliffs, NJ (1999)
- Kundu, S., Datta, S.K.: Impact of trust on the relationship of e-service quality and customer satisfaction. *EuroMed J. Bus.* **10**(1), 21–46 (2015). <https://doi.org/10.1108/EMJB-10-2013-0053>
- Lee, G.Y., Chu, P.Y., Chao, Y.: Service quality, relationship quality, and customer loyalty in Taiwanese Internet banks. *Soc. Behav. Personal. Int. J.* **39**, 1127–1140 (2011)
- Mokhtar, S.S.S., Mahomed, A.S.B., Hashim, H.: The factors associated with zakat compliance behaviour among employees. *Int. J. Econ. Manag.* **12**(S2), 687–696 (2018)
- Moorman, C., Zaltman, G., Deshpande, R.: Relationships between providers and users of market research. *J. Mark. Res.* **29**(2), 82–104 (1992)
- Moorman, C., Deshpande, R., Zaltman, G.: Factors affecting trust in market research relationships. *J. Market.* **57**, 81–101 (1993)
- Noor, A.M., Saad, R.A.J.: The mediating effect of trust on the relationship between attitude and perceived service quality towards compliance behavior of zakah. *Int. J. Econ. Financ. Issues* **6**(S7), 27–31 (2016)
- Nunnally, J.C.: *Psychometric Theory.* McGraw-Hill, New York (1978)
- Oliver, R.L.: Measurement and evaluation of satisfaction process in retail setting. *J. Retail.* **57**(3), 18–48 (1981)
- Parasuraman, A., Zeithaml, V.A., Berry, L.L.: SERVQUAL: a multiple-item scale for measuring consumer perceptions of service quality. *J. Retail.* **64**, 12–40 (1988)
- Rasheed, F.A., Abadi, M.F.: Impact of service quality, trust and perceived value on customer loyalty in Malaysia services industries. *Proc. Soc. Behav. Sci.* **164**, 298–304 (2014)
- Ringle, C., Wende, S., Will, A.: *SmartPLS 2.0 (M3) Beta.* University of Hamburg, Hamburg (2005)
- Saad, R.A.J., Farouk, A.U., Wahab, M.S.A., Ismail, M.: What influence entrepreneur to pay Islamic tax (zakat)? *Acad. Entrep. J.* **25**(Special Issue 1), 1–13 (2019)

- Sawmar, A.A., Mohammed, M.O.: Enhancing zakat compliance through good governance: a conceptual framework. *ISRA Int. J. Islam. Finan.* **13**(1), 136–154 (2021)
- Suki, N.M.: A structural model of customer satisfaction and trust in vendors involved in mobile commerce. *Int. J. Bus. Sci. Appl. Manag. (IJBSAM)* **6**(2), 18–30 (2011)
- Trif, S.-M.: The influence of overall satisfaction and trust on customer loyalty. *Manag. Market.* **8**(1), 109–128 (2013)
- Wahab, N.A., Ibrahim, A.Z., Zainol, Z., Bakar, M.A., Minhaj, N.: The impact of service quality on zakat stakeholders satisfaction: a study on Malaysian zakat institutions. *JMFIR* **13**(2), 71–91 (2016)
- Zainal, H., Bakar, A.A., Saad, R.A.J.: The role of reputation, satisfactions of zakat distribution, and service quality in developing stakeholder trust in zakat institutions. In: *The European Proceedings of Social & Behavioural Sciences EpSBS*, pp. 524–530 (2016)
- Zeithaml, V.A.: Service quality, profitability, and the economic worth of customers: what we know and what we need to learn. *J. Acad. Market. Sci.* **28**, 67–85 (2000)
- Zeithaml, V.A., Parasuraman, A., Malhotra, A.: Service quality delivery through web sites: a critical review of extant knowledge. *J. Acad. Mark. Sci.* **30**, 362–375 (2002)
- Zeithaml, V.A., Parasuraman, A., Malhotra, A.: *E-service Wuality: Definition, Dimensions and Conceptual Model*. Cambridge, MA (2000)



# The Assumption of Unlimited Human Wants (AUHW) in Islamic Economics: A *Tasawur* Perspective



Mohd Zulkifli Muhammad , Muhammad Naqib Mat Yunoh, Farah Hanan Muhamad , Noor Raihani Zainol, Noormariana Mohd Din, Mohd Rushdan Yasoa', Ahmad Ridhuwan Abdullah, and Nur Fairus Abd Hamid

**Abstract** This study examines the assumption of unlimited human wants in Islamic economics where *tasawur* is brought into play. Drawing from the analytical method, the present study presents new concepts of unlimited human wants. The assumption of unlimited human wants (AUHW) was taken by Islamic economists and therefore altered and assimilated with Islamic elements known as the assumption of Islamic economics. The question is, does the assumption of AUHW accept in Islamic economics? If it fits, what are the assumptions of unlimited human wants parallel with Islamic *tasawur*? The data employed were drawn from Library research. The contents and textual analyses were used to achieve this purpose. This study found out that the assumption of AUHW was parallel with *tasawur*; and for that, they are suitable for Islamic economics. This study examines a new approach to measure unlimited human wants in an Islamic context. Our contributions are confined to this area – human wants. Our study also limits its perspective on the general context of *tasawur*. Future works can provide specific perspectives on unlimited human wants to cover different geographies. This study provides a new parameter for Muslims to

---

M. Z. Muhammad (✉) · M. N. M. Yunoh · F. H. Muhamad · N. R. Zainol · N. M. Din · M. R. Yasoa' · A. R. Abdullah · N. F. A. Hamid  
Faculty of Entrepreneurship and Business, Universiti Malaysia Kelantan, 16100 Kota Bharu, Kelantan, Malaysia  
e-mail: [zulkifli.m@umk.edu.my](mailto:zulkifli.m@umk.edu.my)

M. N. M. Yunoh  
e-mail: [naqib@umk.edu.my](mailto:naqib@umk.edu.my)

F. H. Muhamad  
e-mail: [farahhanan@umk.edu.my](mailto:farahhanan@umk.edu.my)

N. R. Zainol  
e-mail: [raihani@umk.edu.my](mailto:raihani@umk.edu.my)

N. M. Din  
e-mail: [noormariana.md@umk.edu.my](mailto:noormariana.md@umk.edu.my)

M. R. Yasoa'  
e-mail: [rushdan.y@umk.edu.my](mailto:rushdan.y@umk.edu.my)

A. R. Abdullah  
e-mail: [ridhuwan.a@umk.edu.my](mailto:ridhuwan.a@umk.edu.my)

manage their resources according to Islam. This study introduces a new measure of addressing unlimited human wants among Muslims.

**Keywords** Unlimited human wants · *Tasawur* · Islamic economics · Muslims

## 1 Introduction

In deliberating into account the assumptions, concepts, philosophies, and common economic structures, the approach used by mainstream Islamic economists is broken down into two types—first, the modification-accommodation approach and the second methodological eclectic approach. The modification-accommodation approach pioneered by Siddiqi (1988) and Kahf (1987) combines *fiqh* and neo-classical and thus, the origin of *fiqh*-based neo-classical economic theory that is fundamental to today's mainstream Islamic economy. On the other hand, the methodological approach to eclecticism pioneered by Mannan (1989) chose the eclectic method and borrowed ideas of more radical and more traditional economic traditions. This approach opts the good from the various sources and combines it into one that is pleasing to the community and is more populist (Alwyni and Salleh 2019; Salleh 2011; Bahari 2012).

This approach does not necessarily reflect the real Islamic economy. Instead, they seem to put the current Islamic economy in the mainstream of economic economics. The reason is simple. It is necessary for the development of the Islamic economy, and we think that interaction with the common economy is not only acceptable but necessary. Then they accept the discipline, values, and assumptions found in the prevailing economy (Rahim and Bahari 2018; Salleh 2017).

One of the assumptions in mainstream economics that scholars believe in mainstream Islamic economics is the 'assumption of unlimited human wants' or (AUHW) in the acronym. The assumptions of the AUHW are taken into account and then practised with the Islamic elements so that they can be called assumptions in the Islamic economy. Therefore, the assumption made by the mainstream Islamic economists is not at odds with Islamic scholars. Based on this scenario, this paper seeks to answer the question of what is the assumption of human desire according to Islamic law? The main purpose of this paper, therefore, is to identify and analyze the assumptions of the AUHW based on Islamic principles. To achieve the objectives of the study and to answer the research questions, data sources from previous researchers in the form of books, journals, proceedings, reports and other articles were considered. These include domestic and foreign sources of data authored by either Islamic economists or other scholars. Therefore, the nature of the study in this paper is best referred to as the document study. The data analysis method used in this paper is content and textual analysis method.

This study is critical because it addresses the assumptions of the AUHW that are relevant to Islamic law. It is hoped that this study will enhance the knowledge of AUHW's assumptions in more detail. This paper is divided into four sections.

The first part has already been discussed in the introduction. The preceding section also includes issues, research questions, research objectives, research methodologies, and brief research interest. While the second section discusses the definition of assumptions of the ministry and Islamic authorities. These definitions need to be elaborated first so that the analysis of the assumptions of the UHW based on Islamic principles discussed later can be well understood. The third part is the analysis of the assumptions of the UHW based on Islamic principles. The fourth part is the last one.

## 2 Defining The Assumption of Unlimited Human Wants

### 2.1 Assumptions of Unlimited Human Wants

Human wants can be defined as the basic want that is part of the human genetic gift. It can be temporarily satisfied either alone or in more complex combinations by using appropriate items in appropriate quantities, and the desire to fulfil the want that drives other activities (Heathwood 2019). Want can also be defined as to feel of desire, intend to have something, wanting, intend something limited, will, wanting, expecting, craving, coveting, wanting anything and having a desire for something (Witt 2001: 26).

Raiklin and Uyar (1996: 50 & 53) divide human want into two needs and wants. Demand is an urgent requirement in obtaining goods and services to satisfy satisfaction. Needs are based on desire (Volkert and Serrur, 2020). The will, of course, includes the needs but exceeds the level of basic needs to reflect social and cultural status (Quintavalla and Heine 2019).

According to Raiklin and Uyar (1996), both needs and wants belong to individual consumption, which is the main objective of production and distribution in all economic systems. Macpherson (1977), on the other hand, states that both needs and wants, which are related to desires, are to satisfy the procurement of goods and services through consumption. Whereas the unlimited human wants refers to human needs and wants that cannot be satisfied with goods and services. Even if it is satisfied, over time, the feeling of dissatisfaction will be born again in the heart. Likewise, human wants will shift to other higher-level expectations once the lower needs and wants are satisfied (Volkert and Serrur 2020).

Based on the meaning outlined in all of the definitions discussed above, in summary, the impossibility of human wants encompasses human wants and needs that are never satisfied with goods and services. It reflects the desire or passion for goods and services as a whole. The following definitions are used in this paper.

## 2.2 Islamic Tasawur

*Tasawur* is derived from the Arabic term *tasawwur*. The basic term for this term is *sawwara*. The beliefs have also been translated into English and other languages with varying terms. These include *sarwa* viewpoint, worldviews, life views and worldviews (Choudhury 2019; Hanapi 2013). However, Din (1992: 2) argues that all interpreted terms such as brilliant, natural, life, world view and worldview are less than true in Islamic terms.

Thus, the term *tasawur* which, according to Arabic origin, has a more accurate and precise meaning with the Islamic principles contained therein. The meaning of Islamic religion here is a comprehensive or authentic picture of Islam that seeks to explain the whole basic principle of Islam properly and thoroughly to be the basis of one's life and self-esteem (Hanapi 2012; Salleh 2021).

According to Hassan (1993) and Awang (1997), *tasawur* consists of a comprehensive description or explanation of something. This comprehensive understanding includes a clear and complete explanation of what is being studied (Din 1992; Hanapi 2019). The word *tasawur* when combined with the word Islam, it forms the Islamic *tasawur*, which means a comprehensive or true picture of Islam that seeks to explain the whole basic principle of Islam correctly and thoroughly to become the basis of one's life and self-esteem (Din 1992; Awang 1997; Hanapi 2019). Therefore, the Islamic *tasawur* used in this paper is a comprehensive and accurate description of Islam.

## 3 The Assumption of Unlimited Human Wants (AUHW) in Islamic Economics

Islamic *tasawur* in the human will involves two dimensions of the relationship. The first dimension of the relationship is the **vertical** relationship between "MAN - ALLAH AZZA WA JALLA". In support of this assertion, Abdul Rahman (2010) asserts that our relationship with the Almighty will determine the mode of relationship with fellow servants, those that come. The second dimension of the relationship is the **horizontal** relationship dimension. Horizontal relationship dimensions are shaped into three types of relationships. First, the relationship between "MAN - HIMSELF". Second, human relationships with other human beings. Third, human relations with the environment that includes flora, fauna and other forms of life. In our study, the environment can be segregated into goods and services in economic activity. The two dimensions of the relationship can be described as follows.

### 3.1 The Relationship Dimension of *Habl Min Allah*

The dimension of the human relationship with Allah SWT is one of the components of Islamic law. The dimension of the relationship of God's ministries in the context of human will in the mainstream Islamic economy involves one's faith in terms of consumption (Aisyah 2015; Turner 2016). Faith can drive people's will toward goods and services. The level of human needs and desires is subject to faith's effects (Yusoff 2019). This is in line with the word of Allah Almighty, which means:

*"And whoever submits his face to Allah while he is a doer of good - then he has grasped the most trustworthy handhold. And to Allah will be the outcome of [all] matters"* (Luqman, 31:22).

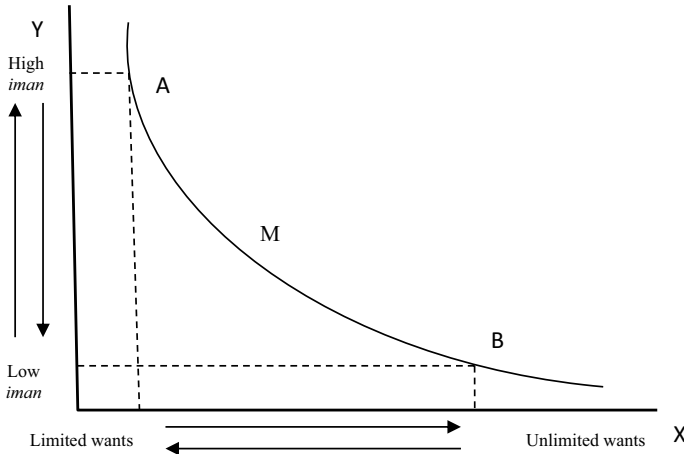
*"And who is better in religion than one who submits himself to Allah while being a doer of good and follows the religion of Abraham, inclining toward truth? And Allah took Abraham as an intimate friend"* (Al-Nisa, 4:125).

These *Qur'anic* verses show that with a strong faith in Allah Almighty, Muslims will keep themselves from doing things beyond their limits. Matters beyond this limit include the use of goods and services. For example, Muslims who have a strong faith level will be able to control their desire not to exceed their unlimited level of wants. They will meet the demands of necessities such as shelter, food and clothing. If the needs are met, those who are capable will go to higher levels. They will try to satisfy their desires, but do not go beyond the limits of their relationship with Allah (Qutb 2018; al-Tabariy 2009; Ibn Kathir 2011). Believers will make every effort to control their will not to cross the line as depicted in the Hadith of the Messenger of Allah (may Allah be pleased with them). The Messenger of Allah (may peace be upon him) said:

*"Has told us Yahya bin Bukair has told us Al Laits of Yunus of Az Zuhriy of Salim that 'Abdullah bin' Umar radliallahu 'anhuma said; I heard 'Umar say: "The Messenger of Allah (may peace be upon him) had given me a gift and I said to him: " Give it to someone poorer than me. "So he said: " Take it. If you have come to this property when you are not the one to spit it out or ask for it, then take it. And do not follow your desires"* (Sahih al-Bukhari, Hadith No. 1380)

On the other hand, people of weak faith are prone to follow their passions for the sake of goods and services that transcend boundaries. Although their basic needs and wants are still not fully met, they tend to meet unlimited needs. This situation stems from weak faith. Their relationship with Allah Almighty is fragile. When Allah's relationship is fragile, man cannot distinguish between the want blessed by Allah SWT, and the want which is not blessed by Him (Mohamed Saniff 2018). The want that Allah Almighty does not bless is the unlimited want. As a result, people with weak faith will always follow the lower level of lust and lawlessness (Amirudin and Sabiq 2021). The situation between this level of faith and the human will can be illustrated in Fig. 1.

Figure 1 depicts the relationship between the stages of human faith in Allah SWT with their will to goods and worship. Axis Y refers to the stage of faith, and X position also refers to human will. The curved line marked M also refers to humans.



**Fig. 1.** The relationship between the level of *iman* and human wants

A human who has a high level of faith will influence the use at a low and ordinary level, that is, the level of ordinary needs and wills as indicated by item A. If they have a luxurious level of will, they do not exceed the limits. Conversely, people who have weak faith will affect the use at a high level, namely the level of will that is not limited as indicated by item B. This situation is drawn by those who have weak faith are more likely to do things that are wrong and beyond the limits as the word of God The intended SWT (al-Tabariy 2009; Muhammad 2011; Ibn Kathir 2011):

*“But man wishes to do wrong (even) in the time in front of him. He questions: “When is the Day of Resurrection?” (al-Qiyamah, 75:5-6).*

*“Nay, but man doth transgress all bounds, in that he looketh upon himself as self-sufficient” (al-’Alaq, 96:6-7).*

*“Truly man is, to his Lord, ungrateful, and to that (fact) he bears witness (by his deeds), and violent is he in his love of wealth” (al-’Aadiyat, 100:6-8).*

In the Hadith of the Prophet Muhammad SAW, which means:

*“Muhammad bin Abdullah bin Numair has told us Abu Khalid - that is Sulaiman bin Hayyan - of Sa’ad bin Thariq of Rib’i of Hudzaifah ... Hudzaifah said, “I heard the Messenger of Allah said: “Slander will be displayed in the human heart as the mat is displayed (vertically intersecting each other). No matter what heart the slanderer has, it will stick to the black spots. Likewise, whatever heart he does not have, the white spots will stick to him until the heart is divided into two parts: white as a smooth stone no longer subjected to slander, as long as the heavens and the earth still exist. Whereas others turn to dark grey such as rusty copper, it does not call for good and does not prohibit evil unless it is absorbed by its lust” (Sahih Muslim, Hadith No. 207).*

*“Has told us Muhammad bin Yahya Al Azdi Al Bashri had told us’ Abdus Shamad bin ‘Abdul Warits had told us Hasyim bin Sa’id Al Kufi had told us Zaid Al Khats’ami rather than Asma’ bint’ Umais Al Khats’amiyah said: I heard the Prophet sallallaahu’ alaihi wa Salam said: “As bad as the servant is a servant who is arrogant, proud and forgetful about the essence of the Most High and Most High, as bad as the servant is a servant who is dictatorial*

*and cruel and he forgets the essence the Almighty, the Most High, as bad as the servant is the servant who forgets and is negligent and forgets the grave and the test, as bad as the servant is the servant who exceeds the limits and exaggerated, forgetting the beginning and the end, as bad as the servant is the servant who seeks the world at the expense of religion, as bad as a servant is a servant who seeks religion with things that are thankful, as bad as a servant is a servant in controlled by greed, as bad as the servant is the servant who is controlled by the passions that mislead him and as bad as the servant is the servant who is ruled by greed which makes him despicable” (al-Jami ‘al-Tirmidhi, No. Hadith: 2372).*

Besides, those who have weak faith are impatient in obtaining goods and worship, even there is no feeling of *khawf* and subsiding within them (Ibn Kathir 2011 and Sulaiman 2011). In support of this view, the *Quran* provides the following:

*“O Children of Israel! Call to mind the (special) favour which I bestowed upon you, and fulfil your covenant with Me as I fulfil My Covenant with you, and fear none but Me” (al-Baqarah, 2:40).*

Another saying of the Almighty Allah SWT, which means that:

*“For, Believers are those who, when Allah is mentioned, feel a tremor in their hearts, and when they hear His signs rehearsed, find their faith strengthened, and put (all) their trust in their Lord” (al-Anfal, 8:2).*

People with high levels of faith have no desire to go beyond the limits because they are always controlled by the feeling of being able to do things outside of religious boundaries (Tuerwahong and Sulaiman 2019). They are also patient and generous with the provision of Allah SWT whether they are small or large (Jalal al-Din al-Mahalliy and Jalal al-Din al-Suyutyi 2007; Muhammad 2011). This is in line with the word of Allah Almighty, which means:

*“By (the Token of) time (through the ages), verily Man is in loss, except such as have faith, and do righteous deeds, and (join together) in the mutual teaching of truth, and patience and constancy” (al-‘Asr, 103:1-3)<sup>1</sup>*

Figure 1 also shows that the level of faith can also vary from high to low, depending on the effect of faith on them. People who can control their will affect the level of faith to a higher level. Similarly, Fig. 1 shows that human will can change from normal to transcendent depending on the effect of faith on them. Weak believers will have an unlimited want (Siddiqui 2019). High-minded people will be able to control their appetites to remain at the level that Allah Almighty sees.

---

<sup>1</sup> Allah SWT swears that time is important for the reason that the matter needs attention. Allah SWT accompanied him with a warning that humanity is at a loss. If a human does not want to be classified as a disadvantaged group, they need to have faith and do good deeds, mutual advice advising the truth and patience.

### 3.2 The Relationship Dimension of *Habl Min al-Nas-Self-Want/Lust*

*Habl min al-nas* is the second component of the Islamic religion. In the context of the study of the unlimited human wants, the components of *habl min al-nas* can be broken down into three parts—first, *habl min al-nas* from a personal point of view related to the wants. Second, *habl min al-nas* from human relations concerning consumption. Third, *habl min al-nas* from the point of human connection with the environment concerning natural resources.

*Habl min al-nas* from the standpoint of the self is related to the human being’s inner self. More specifically, does it relate to how the level of human desire or appetite affects the level of consumption? Therefore, more clearly, this second relationship dimension can be illustrated in Fig. 2.

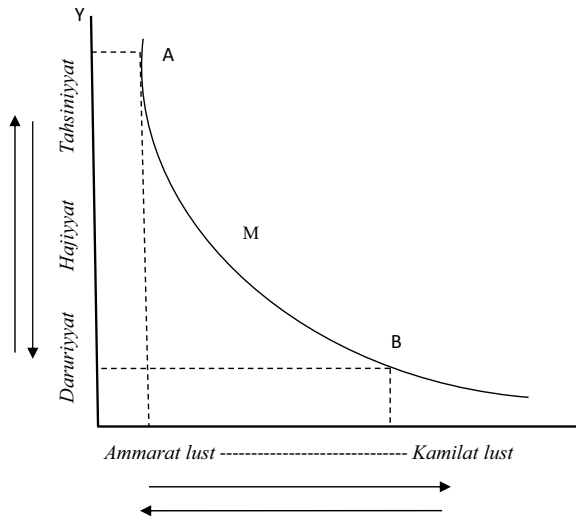
The Y-axis in Fig. 2 represents the level of usefulness, while the X-axis represents the level of appetite. The curve marked M refers to humans. As found in Fig. 2, low-lustful people such as lust, lawlessness and lust will be more likely to fulfil their desires beyond limits and cruelty (Ghofar et al. 2018; Venkatesan 2018). Their minds are controlled by unethical development found in their heart – implying the formation of behaviour that sparks negativity at the expense of positivity. This statement is in line with the word of Allah Almighty:

*“And He giveth you of all that ye ask for. But if ye count the favours of Allah, never will ye be able to number them. Verily, man is given up to injustice and ingratitude”* (Ibrahim, 14:34).

*“Man is a creature of haste: soon (enough) will I show you My Signs; then ye will not ask Me to hasten them!”* (al-Anbiya’, 21:37).

*“We have explained in detail in this Qur’an, for the benefit of mankind, every kind of similitude: but man is, in most things, contentious”* (al-Kahfi, 18:54).

**Fig. 2.** The relationship between the level of consumption and the lust level





*“We did indeed offer the Trust to the Heavens and the Earth and the Mountains; but they refused to undertake it, being afraid thereof: but man undertook it, he was indeed unjust and foolish”* (al-Ahzab, 33:72).

These verses explain how human beings tend to overstep and be cruel to themselves if they have low self-esteem, leading to unlimited wants (Ibn Kathir 2011). Therefore, based on Fig. 2, when low-energy people tend to go beyond the limit, their wants to reach the highest level of consumption is beyond the level of tahsiniyyat (Tahir 2015). At this stage, they are more likely to have luxury goods and services and to exceed the boundaries. This situation can be illustrated in Fig. 2 through A's position as such. When evil desires dominate the throne, all requirements relating to goods and services will exceed that of Islam (Rothman 2020; Shimamoto 2008).

However, if a human can control their passions to a better level, at least in their hearts, people will be able to control their level of usefulness to those who do not cross the line. They will be satisfied with the more appropriate levels of consumption such as *daruriyyat* and *hajiyyat* as well as tahsiniyyat if they are able and already meet the consumption level of *hajiyyat* and *hajiyyat*. This is in line with the word of Allah Almighty (Ibn Kathir 2011):

*“And those who reach for guidance, Allah adds guidance to them and gives piety to them.”* (Muhammad, 47:17).

*“Know that God has brought the earth to life after its death (dry). Indeed, We have explained to you the signs (of our greatness) so that you understand.”* (al-Hadid, 57:17).

For them, goods and services are not the main goals, but their main goal is the blessing of Allah Almighty translated through the use of those goods (Abdul Ghani et al. 2019; Furqani 2017). The main goal of getting the pleasure of Allah SWT is also in line with the word of Allah SWT, which means:

*“But no, by the Lord, they can have no (real) Faith, until they make thee judge in all disputes between them, and find in their souls no resistance against Thy decisions, but accept them with the fullest conviction”* (al-Nisa', 4:65).

*“If only they had been content with what Allah and His Messenger gave them, and had said, “Sufficient unto us is Allah. Allah and His Messenger will soon give us of His bounty: to Allah do we turn our hopes!” (that would have been the right course)”* (al-Taubah, 9:59).

*“And this is because they say to those who do not like what Allah has revealed:” We will obey you in half (concerning opposing Muhammad and his followers). For Allah knows all the words and deeds that they hide ”* (Muhammad, 47:26).

The condition of those who make the blessing of Allah SWT as their primary goal can be illustrated in Fig. 2 through B's position. Therefore, it can be concluded that the better the lust and the higher the lust level, the lower and lower the level of consumption. Likewise, the worse the lower the level of lust, the higher the level of consumption (al-Zuhayli 2011).

### 3.3 The Relationship Dimension of *Habl Min al-Nas –Man To Man – Consumptions*

The dimensions of interpersonal relationships here refer to an individual or a community that needs goods and services from other people (Appau 2021; Karoui and Khemakhem 2019; Krpan and Basso 2021). Human beings cannot afford all the goods and services to meet their needs and want (al-Faruqi 1981; Sheth 2020). All they can do is to get goods and services from others (Jafari and Sandikci 2016). As such, it has become commonplace in human life to meet the needs and wants of all goods and services (Hakim 2016).

In this case, there are two parties involved. First, the parties will be the producers of goods and services (Huda et al. 2016:). Second, the parties will be consumers of the goods and services (Asutay 2007). However, first-time manufacturers can be consumers of goods and services that they do not produce. Likewise, second-party consumers can also be producers of goods and services needed by other people or communities (Sandikci and Ger, 2011). Such is the dimension of interpersonal relationships that depend on the needs and wants of goods and services (Sandikci and Jafari 2013: 3–4).

The need for one another to be used in common use in a developing society. In other words, the three levels of consumption, namely, *daruriyyat*, *hajiyyat* and *tahsiniyyat* will exist in a well-developed society (Camilleri 2018; Qazzafi 2019). This level of usefulness can be illustrated through normal distribution, as shown in Fig. 3.

Based on the normal distribution of well-developed societal levels, as shown in Fig. 3, a small subset of societies fall into the category of *daruriyyat* and *tahsiniyyat*. This means that the members of the community are really poor, and they do not have much. Many public members are concentrated in the category of *hajiyyat*, which is a medium living society. Therefore, this normal distribution reflects the level of

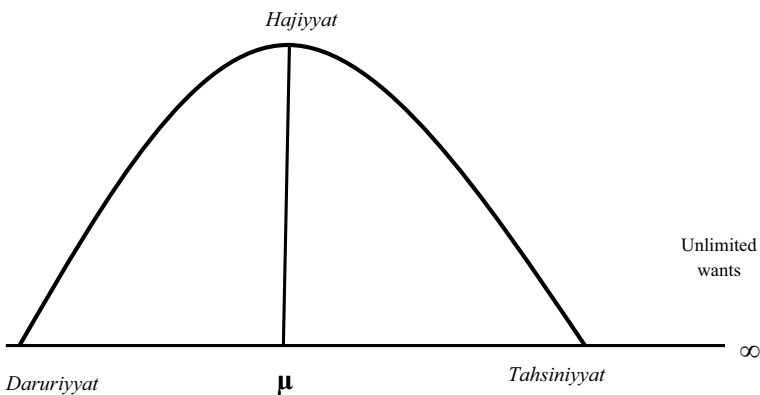


Fig. 3 Normal distribution of consumption level

consumption in a well-developed society. A thriving society is a society that works its economic activities justly and fairly following *Shariah*. If society passes the normal distribution in the current category, the consumption level can be unlimited (Hosta and Zabkar 2020). Then, there is an unlimited state of desire as can be illustrated in Fig. 3. This situation can create two classes of society as well. First, society demands goods and services beyond its boundaries. Second, it is a society that offers goods and services that transcends.

However, Islam forbids its people to meet the needs and requirements of goods and services (Amirudin and Sabiq 2021). Islam accepts people's needs and wants from various stages, from the least to the highest. Islam also still accepts the use of luxury goods and services in the *tahsiniyyat* category if the individual or society has the ability and does not violate *Shariah*. However, Islam does not advocate using luxury goods and services beyond the limits of *tahsiniyyat*. Therefore, believers will certainly be able to refrain from committing acts beyond the limits of their use of goods and services. This is in line with the word of Allah Almighty, which means:

*“O you who believe, do not forbid the good things which Allah has for you and do not transgress. Surely Allah does not love those who transgress.”* (al-Ma'idah, 5:87).

This verse reminds people not to go beyond the limits and follow their passions in all behaviours and activities, including fulfilling the demands of goods and services. These goods and services are one of the natural resources that God Almighty has given to mankind (Zagonari 2020). As such, the exploitation of the environment should be made because of the necessity to improve ummah's well-being through the provision of basic needs like housing projects to curb poverty and squatter houses.

### ***3.4 The Relationship Dimension of *Habl Min al-Nas* - Environment- Natural Resources***

*Habl min al-nas* with the environment is one of the second components of Islam. This relationship dimension refers to the human relationship with the environment, which is the source of nature. With the availability of natural resources, goods and services can be produced to meet human needs and want (Mankiw 2020). Allah SWT has provided mankind with abundant and abundant natural resources and following the standard set by Allah Almighty for every human being (Ahmed 2010: 148). Natural resources provided by Allah SWT for human life in the world are part of the abundant provision of Allah Almighty (Ibn Kathir 2011; al-Tabariy 2009).

According to Qutb (2018) and al-Jaza'iriy (1986: 21), Allah Almighty's position as the Provider of this One is the continuation of Allah Almighty as the Creator and Owner of the One Being of all beings. In this regard, al-Tabariy (2009) says that Allah Almighty gives sustenance to all living beings on this earth. All that provision is protected by His command. Al-Tuwajiri (2000: 119 & 187) also offered the same view as al-Tabariy (2009), adding that Allah Almighty will not kill a person unless he has fulfilled his pre-determined provision.

Taken as a set, Salleh (2021) stated that Allah Almighty has provided sustenance for each of His creatures. However, the sustenance received by the creature in the form of raw materials or consumer end-products is not mutually exclusive in terms of quantity. Allah Almighty says:

*“And if God had provided the sustenance of every one of his servants, they would have gone beyond the limits of the earth; but Allah decreed (His provision) at the rate as He pleased. Indeed, He knows all the affairs of His servants, and sees them clearly”* (Al-Syura, 42:27).

According to Qutb (2018), this verse illustrates how much provision God SWT provides for human life in this world, but in reality, it is few. Even more so when compared to the abundance of grace in the hereafter.

If Allah SWT extends its provision to mankind as much as possible in the hereafter, they will act beyond the limits and commit unjust acts. Humans are weak creatures and cannot afford to be rich except for themselves. Allah Almighty knows and sees the attitude and behaviour of His servants. Therefore, Allah Almighty makes provision for this earth to be limited to certain rates that only human beings can bear. His abundant gift of grace was kept as a reward for those who passed the test in the hereafter. Therefore, even with these few natural resources, human has felt it enough that they have forgotten the Creator and Owner of this world, let alone that Allah Almighty bestows more of His life on this earth (al-Falimbani tt: 119). Consequently, in contemporary society, rich folks bought BMW cars to skip the zakat payment and somewhat this is relatively known as *zakat* evasion.

Although the wealth of natural resources is readily available and freely available, it cannot be used in a wasteful way and beyond the limits of life's necessities. To ensure that natural resources are becoming more and more abundant, the level of consumption based on basic needs and convenience should be taken into account. This will never be achieved if the level of consumption is based on unlimited will that leads to heart and soul damage, spiritual and physical imbalance and waste. The method of using natural resources in Islam advocates that natural resources should not be used excessively or wastefully, leading to waste (al-Furqan, 25:67 & al-An'am, 6: 141). This is also explained in the Hadith of the Prophet (PBUH), which means:

*“Narrated by ‘Amru bin Syu’ayb r.a. from his father from his grandfather that the Messenger of Allah (may peace be upon him) said: Eat, drink, give alms, and dress with no pride, no arrogance and no excess (waste). Indeed, Allah loves to see the effect of His favour upon His servants.”* (Narrated by Ahmad bin Hanbal, Hadith No. 6669, al-Syaybaniy, 1994: 379).

Based on the above *Qur'anic* verses, Ibn Kathir (2011) describes that Allah Almighty prohibits human beings from being extravagant in giving or spending. Allah Almighty also prohibits human beings from thinking about their families so that their needs are not being met. Al-Qurtubiy (1993b) and al-Tabariy (2009) argue that the word *al-israf* in both verses carries the meaning of *khata* (wrong) which is wrong in terms of the use of the property and therefore waste. Likewise, Ibn Kathir (2011) states the descend of the verse in al-An'am (6: 141) due to the events that occurred against Thabit bin Qays bin Syammas. He cuts down his palm, saying:

*“No one came to me today except I fed him.”* Ibn Kathir (2011).

Then Thabit fed until the evening until all his limbs were gone. So Allah Almighty revealed this verse. Al-Tabariy (2009) says that although the verse in this chapter is derived from the events that happened to Thabit bin Qays bin Syammas, the prohibition of waste in general. This means that Allah Almighty prohibits humans from making waste in any form (Hanapi 2012). For instance, one who buys more than one car to show off and nothing to do to commute to the workplace. Such an act is forbidden Islamically.

In the context of natural resources, from Islam and how Islam is organized is very broad and unlimited (Hanapi 2012). Consciousness exists only in physical terms and quantities (*Qur'an*, 42:27). This world's resources are guaranteed to everyone based on the provisions set by Allah Almighty (Salleh 2021). The *Qur'an* states that Allah Almighty has provided everything that man needs to live. According to Kuran (1992) and Nazeer (1981), although natural resources are vast and unlimited, Muslims' use in these natural resources should be within Islamic teaching guidelines. Nazeer (1981) argues that if the decision to use an individual is guided by Islamic norms, then natural resources are far more sufficient for humans. In other words, it is not possible to have a natural resource if humans obey the rules set by Allah Almighty regarding its use. This is in line with the word of Allah Almighty (al-Qurtubiy 1993a; Hasan 2005; Zaman 2010; Sandikci and Ger 2011; Hanapi 2012):

*"O Apostles, eat of the good and lawful things and do good deeds; Indeed, I know well what you do"* (al-Mu'minun, 23:51).

*"O you who believe, eat of the good things which We have given you, and be grateful to Allah if you worship Him only"* (Al-Baqarah, 2: 172).<sup>2</sup>

The above *Quranic* verses explain the rules regarding the use of natural resources which are *halal* and good food. Although this rule is limited to good and lawful food, it can be extended to the use of other natural resources. This is in line with the Hadith of the Prophet (PBUH), which means:

*"Narrated from Abu Hurairah r.a. that the Allah's Messenger (may peace be upon him) said: O people! Allah is good. He doesn't accept anything but good things."*

Verily, Allah commanded the believers as He commanded His Apostles. So Allah says:

*"O Apostles, eat of the good and lawful things and do good deeds; Indeed, I know well what you do"* (al-Mu'minun, 23:51).

His word again:

---

<sup>2</sup> There is a slight difference between the two verses of *al-Baqarah* (2: 168 & 2: 172). The verses in *al-Baqarah* (2: 168) are called *tayyiban* elections and then followed by the prohibition of following the footsteps of the devil, while in verse *surah al-Baqarah* (2: 172) is mentioned only *tayyibat* and then followed by the command to be grateful. This difference is due to the differentiation of the Bible (the intended verse) in both verses. The *Qur'an* in *Surah al-Baqarah* (2: 168) is directed to the Children of Thaqif, Khuza'ah and Mudlij who forbade themselves from eating livestock. However, pronunciation in general. It encompasses all humans. Whereas the *Quranic* verse in *al-Baqarah* (2: 172) is specific to believers (al-Tabariy, 2009 and al-Qurtubiy 1993a: 140 & 145). It is clear here that the content of a verse depends on whom the verse is directed to (Mohd Shukri Hanapi, 2012).

*“O ye who believe, eat of the good things We have given you, and be thankful to Allah if you worship Him only”* (al-Baqarah, 2: 172).

Next, the Messenger of Allah (may peace be upon him) spoke of a man who had travelled a long way, his hair tangled with dust, his two hands stretched out to heaven in prayer:

*“Oh my God! Oh my God! While the food is illegal, the drink is illegal, the clothing is illegal, it is supplied with illegal substances, so how can its prayers be answered”* (Muslim, 1015 & al-Tirmidhi, 3174).

The above Hadith describes Muslims’ need to eat clean, pure and sourced foods from halal sources. There are at least two implications of this Hadith. First, a healthy and clean diet has a direct connection with a blessing and can bring one closer to Allah Almighty. Secondly, illegal and impure food does not bring the blessing of a person away from Allah Almighty. Therefore, the use of natural resources is limited to what is lawful and good (al-Nawawi 1996; Hanapi 2012). The command to eat *halal* and sacred food in this verse of the *Qur’an* and the *Hadith* also intends to utilize all-natural resources to the best of its ability and not exceed the limits of its use.

## 4 Conclusion

This study provides an Islamic perspective of unlimited human wants by considering Islamic worldview in explaining Muslims’ consumption and spending. If one’s want is driven by lust and satanic influences, the trend of consumption and spending is somewhat extravagant at the expense of society at large – implying the benefits are earned by the hands of few instead of many. If one’s want is driven by piety, the consumption and spending are worked with Shariah principles to balance his well-being with others. Following al-Faruqi (1981), one who has a high level of faith tends to consider others in his personal consumption for that he is influenced to perform charitable givings – these include the voluntary ones (i.e. *sadaqah* and *waqf*) and positive ones (i.e. *zakat* and *faraid*).

Notably, the whole discussion can be summarised in four things. First, people with weak faith will have an unlimited will, while high-faith people will be able to control their appetite to remain at the level that Allah Almighty sees. Second, the better the lust and the higher the lust level, the lower and the level of usefulness. Likewise, the worse and lower the level of lust, the higher and beyond the limits of usefulness. Third, Islam accepts human beings’ needs and wants in various stages and stages from the dawn to the tahsiniyyat. However, Islam does not advocate the use of luxury goods and services beyond the limits of tahsiniyyat and beyond the limits (Oziev and Fontaine 2013: 29; Beik and Arsyianti 2015). Fourth, the natural resources created by Allah Almighty for human use are vast and unlimited, but they cannot be used in any way beyond their limits. Instead, people must adhere to the ethics and rules of use established by Allah Almighty.

Like others, we also acknowledge two limitations, which are not really addressed in the current study. First, our discussion on the issue concerned rather generic without pinpointing specific context of investigations. Future studies may extend the present study's idea to capture specific geographies to understand the trends of unlimited human wants between developed and developing Muslim countries to extend the findings. Second, our results are based on library research approach and may not offer a new viewpoint pertinent to the unlimited human wants. This is considered a drawback since the human wants are kept on changing due to individuals' level of income, education obtained and the growing digital society and economy. Given this assertion, future studies may consider empirical investigations to produce a more comparable outcome for improved inferences.

Despite these limitations, our work provides an improved understanding pertinent to unlimited human wants. For that, the inculcation of moderate and controlled consumption and spending is established to create a Muslim society, where *iqtisad* comes into play, at least.

**Acknowledgements** The authors would like to thank the Ministry of Education for financing the Fundamental Research Grant Scheme (FRGS) grant (R/FRGS/A0100/00677A/004/2018/00558).

## References

- Ghani, B.A., Ismail, N., Radzi. N.A.M.: Islamic-based hierarchical consumption. *Jurnal Intelek*, **14**(2), 52–57 (2019)
- Rahman, A.R.A.: An introduction to Islamic accounting: the theory and practice. Centre for Research and Training (CERT), Kuala Lumpur (2010)
- Ahmed, W.A.: The concept of scarcity and its implication on human behaviour: searching the Qur'anic perspective. *Rev. Islamic Stud.* **14**(1), 147–171 (2010)
- Aisyah, M.: Peer group effects on Moslem consumer's decision to purchase halal labelled cosmetics. *Al-Iqtishad: J. Islamic Econ.* **7**(2), 165–180 (2015)
- al-Falimbani, A.S.: *Siyar al-salikin ila 'ibadah Rabb al-'Alamin* (Vol. 1). Muhammad Nahdi wa Awladah, Bangkok, Thailand (t.t.)
- Al-Faruqi, I.: *Al-tawhid: Its Implication for Thought and Life*. International Institute of Islamic Thought, Herndon, Virginia (1981)
- Al-Jaza'iriy.: *Minhaj al-muslim*. Dar al-Jil, Beirut, Lebanon (1986)
- Al-Nawawi.: *Syarh al-Nawawi 'ala sahih Muslim*, vol. 7. Dar al-Khayr, Beirut, Lebanon (1996)
- Al-Qurtubiy.: *Al-Jami' li ahkam al-Qur'an*, vol. 2. Dar al-Kutub al-'Ilmiyyah, Beirut, Lebanon (1993a)
- Al-Qurtubiy.: *Al-Jami' li ahkam al-Qur'an*, vol. 7. Dar al-Kutub al-'Ilmiyyah, Beirut, Lebanon (1993b)
- Al-Tabariy.: *Tafsir al tabari: Al musamma jami' al bayan fi ta'wil al-Qur'an*. Lebanon DKI, Beirut, Lebanon (2009)
- Al-Tuwajiri.: *Pilar-pilar ajaran Islam (usul al-din al-Islamiy)*. Pustaka Azzam, Jakarta, Indonesia (2000)
- Alwyni, F.A., Salleh, M.S.: Discourses on development and the Muslim world. *Int. J. Bus. Soc. Sci.* **10**(11), 135–147 (2019)
- al-Zuhayliy, W.: *Al-tafsir al-munir fi al-'aqidah wa al-syari'ah wa al-manhaj*. 10th edn. Dar al-Fikr, Beirut, Lebanon (2011)

- Amirudin, C., Sabiq, A.F.: Islamic perspective at the consumption ethics of students in An-Nida Salatiga Islamic Boarding in the covid-19 pandemic. *Al Iqtishadiyah Jurnal Ekonomi Syariah Dan Hukum Ekonomi Syariah* **7**(1), 36–46 (2021)
- Appau, S.: Toward a divine economic system: Understanding exchanges in a religious consumption field. *Mark. Theor.* **21**(2), 177–199 (2021)
- Asutay, M.: A political economy approach to Islamic economics: systemic understanding for an alternative economic system. *Kyoto Bull. Islamic Area Stud.* **1**(2), 3–18 (2007)
- Awang, R.: *Tasawur rabbani menurut al-Qur'an dan al-Sunnah*. Al-Hidayah Publication, Kuala Lumpur, Malaysia (1997)
- Bahari, Z.: Dekolonisasi pendidikan dalam disiplin ekonomi Islam. In *Seminar Antarabangsa Dekolonisasi Pendidikan*. UMSU, Medan, Indonesia (2012)
- Beik, I.S., Arsyianti, L.D.: Construction of cibest model as a measurement of poverty and welfare indices from an Islamic perspective. *Al-Iqtishad: J. Islamic Econ.* **7**(1), 87–104 (2015)
- Camilleri, M.A.: Understanding customer needs and wants. In: *Travel Marketing, Tourism Economics and the Airline Product*. Tourism, Hospitality and Event Management. Springer, Cham, Switzerland (2018). [https://doi.org/10.1007/978-3-319-49849-2\\_2](https://doi.org/10.1007/978-3-319-49849-2_2)
- Choudhury, M.A.: *The Islamic Worldview*. Routledge, London (2019)
- Din, H.: *Tasawur Islam*. Pustaka Hizbi, Selangor, Malaysia (1992)
- Furqani, H.: Consumption and morality: principles and behavioral framework in Islamic economics. *J. King Abdulaziz Univ. Islamic Econ.* **30**, 89–102 (2017)
- Ghofar, A., Abubakar, U., Azhar, M.: Tazkiyatun nafs as a strength base of teacher personality competency. *IJISH: Int. J. Islamic Stud. Humanit.* **1**(2), 128–140 (2018)
- Hakim, R.: Islamic economists in the early 21st-century views on business ethics. *FALAH Jurnal Ekonomi Syariah* **1**(1), 1–14 (2016)
- Hanapi, M.S.: *Tasawur pembangunan dalam al-Qur'an: Kajian tafsir al-Mawdu'iy*. (Unpublished doctoral dissertation). Universiti Sains Malaysia, Pulau Pinang, Malaysia (2012)
- Hanapi, M.S.: *Tasawur Islam dan pembangunan*. Dewan Bahasa dan Pustaka, Kuala Lumpur, Malaysia (2013)
- Hanapi, M.S.: Re-thinking the consumerism phenomenon in the liberalist-capitalist economic system: In a search of an Islamic consumerism model. *Int. J. Religious Cult. Stud.* **1**(1), 27–41 (2019)
- Hasan, Z.: Treatment of consumption in Islamic economics: An appraisal. *JKAU: Islamic Econ.* **18**(2), 293–46 (2005)
- Hassan, M.K. *The Islamic worldview*. In: *Seminar on Islam and Its Worldview: An American Perception*. Institute of Islamic Undersanding, Kuala Lumpur, Malaysia (1993)
- Heathwood, C.: Which desires are relevant to well-being? *Noûs* **53**(3), 664–688 (2019)
- Hosta, M., Zabkar, V.: Antecedents of environmentally and socially responsible sustainable consumer behavior. *J. Bus. Ethics* **171**(2), 273–293 (2020). <https://doi.org/10.1007/s10551-019-04416-0>
- Huda, N., Rini, N., Anggraini, D., Hudori, K., Mardoni, Y.: The development of human resources in Islamic financial industries from economic and Islamic financial graduates. *Al-Iqtishad: J. Islamic Econ.* **8**(1), 117–136 (2016)
- Ibn Kathir: *Shahih tafsir Ibnu Katsir*. Pustaka Ibnu Katsir, Jakarta, Indonesia (2011)
- Jafari, A., Sandikci, Ö.: *Islam, Marketing and Consumption: Critical Perspectives on the Intersections*. Routledge, Oxford (2016)
- al-Din al-Mahalliy, J., al-Din al-Suyutiy, J.: *Tafsir al-jalalayn*. Dar Al -Taqwa Ltd, London (2007)
- Kahf, M.: Islamic economics: notes on definition and methodology. In: *International Workshop on the Methodology of Islamic Economics*. Bayero University, Kano, Nigeria (1987)
- Karoui, S., Khemakhem, R.: Factors affecting the Islamic purchasing behavior – a qualitative study. *J. Islamic Market.* **10**(4), 1104–1127 (2019)
- Krpan, D., Basso, F.: Keep degrowth or go rebirth? Regulatory focus theory and the support for a sustainable downscaling of production and consumption. *J. Environ. Psychol.* **74** (2021)



- Kuran, T.: The economics system in contemporary Islamic thought. In: Jomo, K.S. (ed.) *Islamic Economic Alternatives: Critical Perspectives and New Directions*. MacMillan Academic & Professional Ltd, London, UK (1992)
- Macpherson, C.B.: Needs and wants: an ontological or historical problem? In: Fitzgerald, R. (Ed.) *Human Needs and Politics*. Pergamon Press, Adelaide, Australia (1977)
- Mankiw, N.G.: *Principles of Economics*. Cengage Learning, Boston (2020)
- Mannan, M.A.: *Ekonomi Islam: Teori dan praktis*. Noordeen, Kuala Lumpur, Malaysia (1989)
- Mohamed Saniff, S.: Development and its actors: the milieu of Islamic-based development. *Int. J. Umranc Stud.* **1**(1), 15–27 (2018)
- Muhammad, A.: *Mengendalikan Hawa Nafsu: Upaya Meraih Ridha Allah*. Qisthi, Jakarta, Indonesia (2011)
- Nazeer, M.M.: *The Islamic Economic System: A Few Highlights*. Pakistan Institute of Development Economics, Islamabad, Pakistan (1981)
- Oziew, G., Fontaine, R.: The concept of scarcity: An Islamic perspective. *Malays. Manage. Rev.* **46**(1), 27–40 (2013)
- Qazzafi, S.: Consumer buying decision process toward products. *Int. J. Sci. Res. Eng. Dev.* **2**(5), 130–134 (2019)
- Quintavalla, A., Heine, K.: Priorities and human rights. *Int. J. Hum. Rights* **23**(4), 679–697 (2019)
- Qutb, S.: *In the Shade of the Qur'an (fi zilal al-Qur'an)*. The Islamic Foundation, Leicestershire (2018)
- Rahim, H.A., Bahari, Z.: Keynes' consumption theory: a reevaluation according to the Islamic perspective. *Glob. J. Al-Thaqafah* **8**(1), 7–13 (2018)
- Raiklin, E., Uyar, B.: On the relativity of the concepts of needs, wants, scarcity and opportunity cost. *Int. J. Soc. Econ.* **23**(7), 49–56 (1996)
- Rothman, A.: An Islamic model of the soul for applications in psychology. *CMC Papers* **4**(9), 2–11 (2020)
- Salleh, M.S.: *7 prinsip pembangunan berteraskan Islam*. Universiti Sains Malaysia, Penang, Malaysia (2021)
- Salleh, M.S.: A contemporary vision of poverty and Islamic strategy for poverty alleviation. *SAGE Open* **7**(2), 1–8 (2017)
- Salleh, M.S.: Islamic economics revisited: Re-contemplating unresolved structure and assumptions. In: *The 8<sup>th</sup> International Conference on Islamic Economics and Finance*. Center for Islamic Economics and Finance, Qatar Faculty of Islamic Studies, Qatar Foundation, Doha, Qatar (2011)
- Sandikci, O., Ger, G.: *Islam, Consumption and Marketing: Going Beyond the Essentialist Approaches*. Edward Elgar, Cheltenham (2011)
- Sandikci, O., Jafari, A.: Islamic encounters in consumption and marketing. *Mark. Theor.* **13**(4), 411–420 (2013)
- Sheth, J.: Impact of Covid-19 on consumer behavior: Will the old habits return or die? *J. Bus. Res.* **117**, 280–283 (2020)
- Shimamoto, T.: The question of “self-knowledge”(ma'rifat an-nafs) in Islam: Mortazā Motahharī's theory of the “perfect man” (ensān-e kāmel). *J. Interdiscip. Stud. Monotheistic Religions* **4**, 25–45 (2008)
- Siddiqi, M.N.: From contemporary economics to Islamic economics. In: Naseef, A.O. (ed.) *Today's Problems. Tomorrow's Solutions*. Mansell Publishing Ltd, London (1988)
- Siddiqui, S.A.: *A Review of Methodological Issues in Conventional and Islamic economics: A Methodology for Islamic Economics*. Methodology of Islamic Economics. Routledge, Oxfordshire (2019)
- Sulaiman, S.: *Indeks Prestasi Nafsu*. PTS Islamica, Selangor, Malaysia (2011)
- Tahir, I.N.: Socio-economic reforms in line with the Maqasid al-Shari'ah: The case of the caliph 'Umar Ibn 'Abd al-'Aziz. *Al-Shajarah* **20**(2), 211–246 (2015)
- Tuerwahong, S., Sulaiman, M.: Proposing a conceptual framework for the role of taqwa in the career success of Muslim managers in Malaysia. *J. Islamic Manage. Stud.* **2**(1), 32–56 (2019)

- Turner, B.S.: Introduction to section classical approaches—understanding Islam. In: Turner, B.S., Nasir, K.M. (Eds.) *The sociology of Islam: Collected essays of Bryan S. Turner*. Routledge, Oxford, UK (2016)
- Venkatesan, M.: Fostering sustainable bioeconomies: The role of conscious consumption. In: Filho W.L., Pociovălișteanu, D., de Brito, P.B., de Lima, I.B. (eds.) *Towards a Sustainable Bioeconomy: Principles, Challenges and Perspectives*. World Sustainability Series. Springer Cham, Switzerland (2018). [https://doi.org/10.1007/978-3-319-73028-8\\_1](https://doi.org/10.1007/978-3-319-73028-8_1)
- Volkert, M., Serrur, M.: Future outlooks, In: *Nutritional and Health Aspects of Food in Western Europe*, pp. 239–247, Academic Press, Massachusetts (2020)
- Witt, U.: Learning to consume—a theory of wants and the growth of demand. *J. Evol. Econ.* **11**(1), 23–36 (2001)
- Yusoff, M.: Islamic-based relationship marketing: An integration of internal and external marketing. In: Sidek, N.Z.M., Said, R., Hasan, W.N.W. (eds.) *Islamic Development Management*, pp. 173–183. Springer, Singapore (2019). [https://doi.org/10.1007/978-981-13-7584-2\\_13](https://doi.org/10.1007/978-981-13-7584-2_13)
- Zagonari, F.: Comparing religious environmental ethics to support efforts to achieve local and global sustainability: Empirical insights based on a theoretical framework. *Sustainability* **12**(7), 1–36 (2020)
- Zaman, A.: Normative foundations of scarcity, MPRA Paper, 21817, 1–21 (2010). <https://mpra.ub.uni-muenchen.de/21817/>

# Developing Social Financial Resources Model for Islamic Microfinance to Reduce Unemployment Rate



Mohammed Yahya Alrashedi  and Mustafa Omar Mohammed

**Abstract** The Islamic microfinance institutions (IMFIs) are facing crucial challenges that sought to undermine their vital role in combating the unemployment rate. The most important of challenges is the scarcity of financial resources whereas previous studies revealed that most of Islamic microfinance institutions rely on one financial resource which is social fund for development and this negatively affected the ability of IMFIs in reach out the unemployed. This paper attempted to develop a social financial resource that will be expected to finance IMFIs. The qualitative method was applied in this paper and 11 experts of IMFIs were interviewed as well. The findings of this paper revealed that the waqf, zakat and crowdfunding are considered effective tools to reduce the unemployment rate through IMFIs as well as will be easy to implement. Moreover, it found that these resources will contribute to motivating micro-entrepreneurs to extend and develop their micro-enterprises in Yemen through IMFIs. On the other hand, this paper suggests that government, businessmen and IMFIs should establish foundation for waqf and zakat for purpose of financing IMFIs. It also suggest that businessmen and IMFIs should work together to collect fund through crowdfunding platform to finance IMFIs activities.

**Keywords** Islamic microfinance · Waqf · Zakat · Crowdfunding

## 1 Introduction

Although the efforts by the government to reduce the unemployment rate in pre-conflict Yemen, the unemployment rate has remained relatively high. It rose to 17.8% in 2010–2014 (ILO 2013). These efforts did not contribute adequately to the reduction of unemployment for many reasons. The most important of reasons are the successive government and most private initiatives focused largely on fighting poverty

---

M. Y. Alrashedi (✉)

IIUM Institute of Islamic Banking and Finance, Kuala Lumpur, Malaysia

M. O. Mohammed

Kulliyah of Economics and Management Sciences, Kuala Lumpur, Malaysia

e-mail: [mustafa@iium.edu.my](mailto:mustafa@iium.edu.my)

rather than reducing unemployment, the spread of corruption where the evidence indicated that 60% of jobs generated by the public works projects in 2005–2006 did not go to the poor due to nepotism and favouritism and the security and political instability (Yemen ministry of planning and international cooperation 2005–2006, United Nations, ESCWA 2005/2006).

Nevertheless, microfinance institutions (MFIs) in Yemen seem promising in addressing the problem of unemployment. Several studies have shown that MFIs have a positive and effective role in reducing unemployment. They provide self-employment opportunities for the unemployed, as well as access to banking services to entrepreneurs and farmers who are not bankable due to their low level of income. This might be a positive approach in addressing the intertwined problems of unemployment and poverty. Although microfinance has generally proven its success in various countries especially those affected by armed conflicts such as Liberia, Kosovo, Bosnia-Herzegovina, Palestine, Afghanistan, Rwanda, India, Angola, Cambodia, Mozambique, and Sudan (Haider 2008), the current model of Islamic microfinance in Yemen is facing huge challenges. For instance, studies have shown that the scarcity of financial resources for Islamic microfinance institutions (IMIFs) is one of the most crucial challenges they face. A study conducted by SFD (2010) states that 89% of micro-enterprises still depend on self-resources while 11% of them receive funds from financing organizations. Moreover, many private investors avert investing in the field of microfinance due to their fear of economic and political instability (SFD 2014). Another study by Qaied and Basavaraj (2019) indicated that 94% of microfinance suffers from a lack of liquidity mainly due to the limited donor support for microfinance services. As a result, only 1 out of 10 Institutions ended the year 2017 with financial sustainability. Currently, most of the IMIFs in Yemen heavily rely on international and local NGOs and the government in financing their activities (World Bank 2018). Consequently, these financial resources are still limited and do not cover high operational costs and the gap between demands and supply in the microfinance market especially with the steady rise in population and the increase in unemployment and poverty rates (Alshebami and Khandare 2014).

Furthermore, limited funding or resources indirectly or directly cause a chain of other challenges. For example, the limited funding of microfinance impeded the reach out to unemployed people. It also affects the competitiveness and sustainability of microfinance and leads to Very high-interest rates (Alshebami and Khandare 2014). Some studies indicated that the weakness of funding resources adversely affected interest rates as MFIs seek to cover the operating expenses deficit by raising the interest rate (Nwachukwu et al. 2018). According to Muhammad and Hassan (2009), Acha (2008), Nwanyanwu (2011), and Coleman (2004), the major cause of microfinance failure is the high interest rate. The study of Anand (2012) reported: “Microfinance institutions from India and Bangladesh suggest that the capital is one of the important factors that affect the sustainability of microfinance institutions.”

On the same vien, according to Devereux (2015) the Yemeni government is unable to fulfil its obligations toward microfinance institutions. Abdullah (2013) revealed that the governmental role did not achieve the hoped-for goal in the growth and spread of Islamic finance for small projects in Yemen. Similarly, Alshebami and

Khandare (2014) revealed that NGOs do not sufficiently focus on providing micro-finance services for Yemen. Yet, international organizations represent only 0.6% of the total NGOs in Yemen (Devereux 2015).

All these challenges have adversely impacted the current model of Islamic micro-finance institutions in Yemen and weakened their vital role in reducing unemployment. Yet according to Rhyne and Otero (2006), the future demand for microfinance would depend on social and economic factors such as the informal economic sector, employment opportunities, and income for poor people, which are expected to grow in all developing countries. Therefore, to address the challenges discussed above to enable IMFIs to play an effective role towards reducing the unemployment rate, there is a need to develop a viable social financial resources model for IMFIs. In the same context, some studies discussed integrated models based on social resources such as waqf, zakat, and crowdfunding. Ahmed (2003), Kahf (2004), and Wilson (2013) stated that “charitable tools such as zakat, sadaqat, and awqaf have positive effects in supporting microfinance institutions and their micro-entrepreneurs. According to Cohen (2017), Crowdfunding can be employed to enhance capital access for self-employment and small entrepreneurs and SMEs through Islamic microfinance institutions. According to the best knowledge of the author, are not tailored towards reducing the unemployment rate as well as there is hardly any study that attempted to develop a new resources model to enhance the capital of IMFIs in Yemen. Thus, this paper aims to develop a new model of social financial resources which reduce unemployment through IMFIs. Moreover, to achieve the aim of this paper the qualitative method was used in this paper.

This paper is structured into six sections. Following this introduction, the next section is a review of related literature and discusses the proposed relationships in the conceptual model. Section 3 describes the study design and the method of collecting data. Section 4 analyzes the data and presents the results while Sect. 5 focuses on a discussion of the research outcomes. The final Sect. 6 provides the study conclusion, mentions the limitations of this research and offers, recommendations for further related research.

## 2 Literature Review

### 2.1 Cash Waqf

Waqf is one of the most important concepts investigated by many Islamic finance studies. The common theme between these studies is that the Waqf system has positive results for Islamic microfinance institutions. Ahmed (2003), Kahf (2004), and Wilson (2013), stated that “charitable tools such as *Waqf* and *Zakat* have positive effects in supporting microfinance institutions and their micro-entrepreneurs.” They proposed the establishment of a microfinance institution operated according to Islamic principles such as *Zakat* and *waqf*. Tohirin (2010) also found that through

cash waqf institutions, microfinance will have a significant impact on some important aspects, such as more economic activities, employment, and income. Microfinance institutions will also be capable of running and expanding their business ventures and getting financing that was not accessible before through the normal banking system due to the bankability problem. Similarly, Thaker et al. (2016) suggested that using a cash waqf fund will be a viable alternative model to finance micro-enterprises. Zarka (2007) also suggests a Monetary *Waqf* (MW) as interest-free (*riba*-free) loans fund microfinance. Thus, through the above discussion, the current study expects that cash waqf will contribute to enhancing the IMFIs to be able to reduce the unemployment rate in post-conflict Yemen.

## 2.2 *Cash Zakat*

Presently, we can say that zakat is considered one of the most important characteristics that distinguish an Islamic ummah from another ummah. Rahman and Dean (2013) mentioned that there are critical challenges faced by IMIFs which is low market penetration, the sustainability of MFIs due to lack of fund mobilization, and high administrative costs. They revealed that waqf and zakah funds are a solution to finance Islamic microfinance institutions. As mentioned before, Ahmed (2003), Kahf (2004), and Wilson (2013) recommended charitable tools such as *zakat*, *sadaqat* and *Wqaf* to support MFIs and their micro-entrepreneurs (Ahmed 2003). Hassan and Ashraf (2010) stated that *Waqf* and *Zakat* can be used to resolve challenges of Islamic microfinance such as high-profit rate, diverting micro-credit to borrowers for their consumption, and boosting the inadequate funds of IMFIs can be addressed. Giving the previous studies, the cash zakat is expected to contribute to developing the Islamic MIFs and reducing the unemployment rate.

## 2.3 *Crowdfunding*

The study of Lutfi and Ismail (2016) found that crowdfunding has been employed in various models; donation-based and investment-based models. Crowdfunding can be employed to enhance capital access for the self-employed and small entrepreneurs and SMEs through IMIFs (Cohen 2017). Dushnitsky et al. (2016) stated that “European crowdfunding has a positive impact on the role and operation of European Microfinance Institutions and in total, the European crowdfunding and P2P lending platforms provided approximately €3,000 million in finance to consumers, businesses, organizations and projects in 2014 up from €1,200 in 2013 and €500 in 2012. According to the pilot study done by Green et al. (2014), crowdfunding overcomes the financial difficulties of entrepreneurs. The study also reveals that crowdfunding involves the crowd acquiring additional funds by the entrepreneurs while maintaining ownership and control over business ventures. Moreover, the study of

Sherwani et al. (2018) revealed that crowdfunding, as alternative finance is a new trend that is becoming popular and is raising funds for start-ups. It also showed that young entrepreneurs prefer crowdfunding for their ventures. On the other hand, Alonso (2015) found that there is a positive relationship between crowdfunding and Islamic microfinance in Egypt. Due to the above discussion, this study expects that crowdfunding will have a positive effect in developing the Islamic MIFs to reduce unemployment rate.

## ***2.4 Islamic Microfinance Institutions***

The World Bank defines microfinance as “small-scale financial services—primarily credit and savings—provided to people who farm or fish and who operate small enterprises or microenterprises where goods are produced, recycled, repaired, or sold; who provide services; who work for wages or commissions; who gain income from renting out small amounts of land, vehicles, draft animals, or machinery and tools; and to other individuals and groups at the local levels of developing countries, both in rural and urban areas” (Robinson 2001). Moreover, MFIs provide many services to entrepreneurs. First, financial services include credit, remittances, and insurance, savings, and payment services. Second, social mediation services include training in financial culture and management capabilities, group formation, and advisory services (Conroy 2005; Ledgerwood 1999). On the same context, previous studies revealed that microfinance institutions have a positive effect on reducing unemployment and rising of efficiency and volume of business of micro-entrepreneurship Göçer (2013). Moreover, the study of Al Mamun et al. (2011) revealed that microfinance increases employment-generating opportunities by providing diversified and flexible financing offers. On the other hand, IMFIs are the most important resources to develop the small-enterprises that are considered as the one of the most important tools to create the opportunities and reducing unemployment especially in developing countries. For example, the study of Asmawati and Ahmad (2017), Adnan and Ajija (2015), Rokhman (2013), Antonio (2011), and Rahman (2007) revealed that Islamic microfinance plays a very significant role in micro-entrepreneurship development.

## **3 Conceptual Framework of This Study**

The diagram below shows the conceptual framework of his study (Fig. 1):

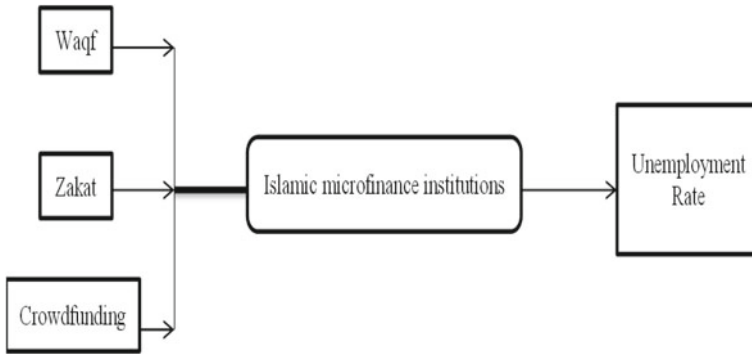


Fig. 1 Conceptual framework of this study

### 4 Research Methodology

The qualitative method was used in this research. 11 experts of Islamic microfinance were interviewed about the role of social financial resources namely cash waqf, cash zakat, charity crowdfunding in finance IMFIs in Yemen. The general backgrounds of the interviewed informants are presented in Table 1.

### 5 Theme Identification and Assembly

After thematically analysing the transcripts, the interviewer identified seven major themes and 28 ideas. The themes indicate the positive aspects of waqf, zakat, and crowdfunding, which include their positive impact, financial strength, easy implementation, characteristics of this resource, motivation, encouragement, and challenges that these financial resources will face suggestions. These themes are presented in Table 2.

These themes are presented in the following sub-sections:

#### 5.1 The Positive Role of Waqf, Zakat, and Crowdfunding

In the interview, informants were asked about their perceptions of the extent to which waqf, zakat, and crowdfunding help Islamic microfinance institutions (IMIFs) attract the unemployed to set up small businesses. They strongly agree that waqf, zakat, and crowdfunding will help IMIFs attract the unemployed to establish their micro-enterprises in post-conflict Yemen. This position is based on their view that such resources are attractive to the unemployed due to being much cheaper than other financial resources and multiple sources. Moreover, these resources will increase



**Table 1** Demographic information of the interview informants

Name of informant	Qualification	Specialization	Occupation	Years of experience	Place of work
Informant 1	Master	Financial administration	High administration	6 years of experience	AL Amal bank for microfinance
Informant 2	Professor	Financial analysis	High administration	35 years of experience	Advisor for Azal institution for microfinance
Informant 3	Master	Banking and finance	High administration	11 years of experience	Nama Islamic Microfinance Institutions
Informant 4	Master	Investment administration	High administration	10 years of experience	Azal Microfinance institution
Informant 5	Master	Accounting	High administration	7 years of experience	The Islamic Solidarity Program for Microfinance
Informant 6	Master	Banking and finance	High administration	9 years of experience	Azal Microfinance institution
Informant 7	Master	Administration	High administration	13 years of experience	The Islamic Solidarity Program for Microfinance
Informant 8	Under degree	Administration	High administration	7 years of experience	The Islamic Solidarity Program for Microfinance
Informant 9	Professor	Jurisprudence and the judiciary	High administration	22 years	Yemen Islamic banks
Informant 10	Master	Islamic banking and finance	High administration	15 years of experience	The Islamic Solidarity Program for Microfinance
Informant 11	Master	Businessman	High administration	30 years of experience	Chairman of the bank of Yemen and Bahrain and chairman of Azal institution for microfinance

**Table 2** Themes and ideas created from the interview

Question No	Themes	Main-Ideas
Q1	The positive role of waqf, zakat, and crowdfunding	<ul style="list-style-type: none"> <li>- Increase in capital of microfinance institutions</li> <li>- Target the largest possible number of unemployed people</li> <li>- Low cost</li> </ul>
Q2	The effectiveness of waqf, zakat, and crowdfunding	<ul style="list-style-type: none"> <li>- Sustainable</li> <li>- Minimal conditions and restrictions</li> <li>- Low risk</li> </ul>
Q3	Easy implementation	<ul style="list-style-type: none"> <li>- Laws and regulations</li> <li>- Awareness</li> <li>- Security and economic stability</li> <li>- Clear procedures</li> </ul>
Q4	Characteristics of this resource	<ul style="list-style-type: none"> <li>- Sustainable sources</li> <li>- Sufficient resources</li> <li>- Reach unemployed people</li> <li>- Shariah-compliant</li> <li>- Low return</li> </ul>
Q5	Motivation and encouragement	<ul style="list-style-type: none"> <li>- Meeting the needs of unemployed clients</li> <li>- Developing and expanding micro-enterprises</li> <li>- Confidence creation</li> <li>- Various products</li> <li>- Low return and conditions</li> </ul>
Q6	Challenges	<ul style="list-style-type: none"> <li>- Delaying in paying the financing instalments</li> <li>- Legislation</li> <li>- Political and economic instability</li> <li>- Lack of transparency</li> <li>- Community awareness</li> <li>- Inflation and currency instability</li> </ul>
Q7	Suggestions	<ul style="list-style-type: none"> <li>- Participate in supervision and monitoring</li> <li>- Bank cash reserves</li> <li>- Media promotion</li> </ul>

capital and liquidity for microfinance institutions and help them target the largest possible number of unemployed and reach remote areas. In this way, IMIFs will be able to increase the amount of financing. The most important reason for using such resources is that most of IMIFs suffer from a shortage of capital because they depend on one resource which is SFD with high return rates. The high rate of return has scared some of the unemployed from dealing with IMIFs. On this, informant 1 said:

Yes, these recourses will help Islamic microfinance attract the unemployed, and increase their activities. Applying this model in Yemen will provide microfinance institutions with capital.

Informant 5 added:

There is no doubt that these sources will help MFIs attract the unemployed because the existing sources of finance are costly and thus negatively affect the clients. It also prevents the unemployed from dealing with IMIFs.

Informant 8 shared a similar sentiment:

This model will have a significant impact because current funding sources are linked to only one institution, and this negatively affected the growth of MFIs.

Informant 2 mentioned that these resources are sustainable and multiple:

These sources will reduce the risk of poor liquidity of Islamic microfinance institutions that have negatively affected customers. These resources are numerous and sustainable. In Yemen, crowdfunding has not been implemented until now. Nevertheless, its viability in Islam has been established given that waqf, zakat, and crowdfunding are Shariah-compliant, and many fatwas have been issued on this.

The informants demonstrated that these proposed resources would contribute to developing Islamic microfinance institutions. Informants 3, 4, 8 mentioned that the proposed resources would help IMIFs target the largest possible number of unemployed people to set up micro-enterprises. Informant 9 mentioned:

If institutions are established to absorb these financial sources, they will help in financing and developing the Islamic microfinance institutions in Yemen, provided that the procedures are sound and clear. There are examples of the success of using these sources, such as Kuwait, Sudan, and Malaysia, which have been relatively successful in solving numerous problems suffered by the poor and unemployed. In terms of the Shariah, Islam's goal of zakat and waqf is to convert the poor into producers and a provider of zakat.

Informant 11 expressed:

Islamic microfinance institutions have not been able to cover the minimum number of unemployed people in Yemen, with the rate of unemployment remaining high. Thus, these sources will help in the spread of MFIs in Yemen as well as in developing the agricultural sector, which is the largest sector in Yemen.

Informant 7 stated:

As for crowdfunding, it will have a greater impact on IMIFs. While some difficulty is expected in agreeing to use zakat and in this model, however, given the nature of these resources, regardless of other factors, if they are applied in Yemen, they will have a positive impact on attracting clients.

## 5.2 *The Effectiveness of Waqf, Zakat, and Crowdfunding*

The informants were further asked as to why waqf, zakat, and crowdfunding are considered effective tools to combat unemployment in Yemen? They agreed that these resources are effective tools to combat unemployment in Yemen because they possess financial properties that set them apart from other financial resources. These properties are sustainability, low cost, minimal conditions and restrictions, and low risk. Most existing IMIFs suffer from unsustainable resources, which expose them to the risk of ceasing operations. The proposed resources, however, are sustainable. On this, informants 4, 5, 6, 8, 10, and 11 remarked:

Zakat, waqf, and crowdfunding funds are social tools and funds that are often sustainable because they are often uninterrupted compared to current financing sources.

Informant 11 added:

Waqf, zakat, and crowdfunding will be effective tools because Islamic MFIs need them. In addition, it is internal financing that is more sustainable than foreign financing, and because they will increase annually if Yemen experiences economic growth.

The informants mentioned that these proposed resources are low in cost compared to other resources. On this, informant 5 commented:

Current sources of financing have a high cost and thus negatively affect clients, but these proposed resources will be low cost as they are considered a social rather than profit tool.

Informant 3 also mentioned: *“They will encourage the unemployed to start dealing with Islamic microfinance institutions due to its low cost”*.

Regarding low conditions and restrictions, informants 4, 7, 8 stated that:

The conditions and restrictions of these proposed resources will be easier compared to the conditions and restrictions imposed by the current financial sources.

In addition, the proposed resources will operate with low risk. Informants 6, 8, and 9 explained:

The risk of default will be low compared to current resources because most of the current resources target profitability, while the goal of these proposed resources is social. As such, the financing costs of these resources are low and will not burden clients.

Informant 4 commented:

These resources will be collected in the local currency, which will reduce the exchange differences when returning the amount of financing compared to current resources.

For informant 6: *“These resources are recoverable from customers thereby reducing the risk of return”*. Similarly, informant 10 commented:

These sources are considered easy to pay by the donor, and will achieve the purpose of waqf and zakat in the Muslim community because their goals are social, not profit in origin.

**Informant 9 added:**

Most other funding resources target profits for the financiers, while in zakat and waqf, the social objective is the most important. There is a fear that Islamic microfinance institutions will turn into a financier for a small number of people and become similar to Islamic banks, which have monopolised most of their financing on a certain class of society. As such, these resources will contribute to reaching a larger number of the poor and the unemployed. In addition, many of the current funding sources are restricted by borrowing controls and conditions at times, and some of them require complex guarantees, which will negatively affect the clients' intention to deal with microfinance institutions. We do not blame the owners of the money as they need profit to invest their money, but at the same time microfinance institutions need funding sources that fit the nature of their work and goals as social institutions which were established to finance the poor and unemployed. Many financiers will rush to finance Islamic microfinance institutions based on religious motives, as they consider it a religious obligation on them for the poor and needy, and they seek God's blessing.

### ***5.3 The Easy Implementation***

The informants were asked if the proposed model was easy to implement. In the conducted interviews, the overwhelming majority of the informants agreed that these resources would be easy to implement in post-conflict Yemen. Furthermore, they mentioned several factors that will be needed to facilitate the application of this model in Yemen: developing laws and regulations, promoting awareness, security and economic stability, and clear procedures.

Regarding laws and regulations, informants 1, 4, 5, 9, and 11 explained:

Rationalising the laws and regulations that organise this model by the government will be needed to make them easy to implement.

**Informant 1 added:**

It will be easy to implement because there are successful experiences concerning implementing funds that do not have a return. For example, we have an entity that grants our organisation without return. We then finance the clients in the form of financing with low returns. Therefore, with waqf, zakat, and crowdfunding, we only have to specify the target groups accurately in addition to determining the appropriate guarantees to recover the principal financing.

Some of the informants mentioned that the basics of these laws are exciting but they need to be developed. Informant 9 commented:

As for legislation, there are basic principles that will greatly facilitate the application of this model but currently require some degree of development.

**Informant 4 mentioned:**

This model has yet to be applied in Yemen. There is a need to spread awareness among the community and lawmakers about the importance of this model—that it is a permanent and stable resource for unemployment reduction in Yemen.

Some informants linked the implementation of this model and the political and economic situation in Yemen. For instance, informant 6 and 8 explained:

This model will be easy to implement where there is security and economic stability it is supposed to be supported by the government and thus requires political and economic stability.

Regarding clear procedures, informant 1 stated:

To make this model easy to implement, the institutional controls and procedures must be clear.

#### **5.4 Characteristics of this Resource**

Informants were asked about their opinions as to why IMIFs need waqf, zakat, and crowdfunding to finance micro-entrepreneurs? In the interview, the informants gave reasonable interpretations concerning why Islamic microfinance institutions need these resources. In general, they confirmed that the diversity of resources would positively affect Islamic microfinance. They interpreted the reason as to why IMIFs in Yemen need these resources is because they were sustainable financial sources, sufficient resources, can reach the unemployed, are *Shariah*-compliant, and have low returns. On this, informants 1 and 2 explained:

Most of the current resources are temporary and not fixed and as such could cease at any time. IMIFs need sustainable resources.

Informants 2, 3, 4, 5, 8, 9, 10, and 11 mentioned:

The current microfinance institutions suffer from a shortage of financial resources because most of them depend on one resource, namely the Society Fund for Development.

Informant 4 added:

Because the IMIFs suffer from a lack of liquidity, as happened in 2016, some institutions stopped due to interruption of the financing allocated by financiers. In addition, the current funding is restricted by certain conditions according to the agenda of the financier. For example, you may receive one billion Yemeni riyals conditional on financing the agricultural sector or the commercial sector, and thus affect the institution's plans and objectives.

Informant 2 added:

The multiplicity of funding sources has a positive impact on Islamic microfinance institutions. For example, it will help boost the capital of MFIs, thereby ensuring their sustainability.

As for the ability to reach the unemployed, informants 3, 9, and 11 explained that:

"IMIFs will be able to reach the largest possible number of the unemployed people by these resources".

Informant 9 stated:

As the MFI funding resources are scarce and do not meet their needs, zakat, waqf and crowdfunding are the easiest ways to achieve community development and reach a large number of unemployed.

Similarly, informant 10 added:

Given the weak sources of Islamic microfinance institutions, it needs more sources to reach the largest possible number of the unemployed, especially Islamic microfinance institutions that are not allowed to receive deposits until now.

Informant 7 mentioned that:

These resources are Shariah-compliant, thus, dealing with them is permissible according to the Shariah. These resources will be compliant with Shariah principles. Secondly, the rate of return for the financiers is much lower compared to other sources of financing, because some financiers demand a high rate of return and this makes the MFIs unacceptable for clients. It also negatively affects both microfinance institutions and unemployed people in Yemen. Because the demand for financing is increasing dramatically, especially with the current war, employees whose jobs were cut off due to the war resorted to microfinance as well as the owners of agricultural land. In our organisation, the number of applicants for financing has tripled in the current year compared to last year. Thus, the urgent need to meet customer demands obligates institutions to search for other available sources that enable them to finance new orders.

## 5.5 *Motivation and Encouragement*

Informants were asked about their views on how the proposed model could motivate micro-entrepreneurs to extend and develop their micro-enterprises. The informants demonstrated that these resources would encourage micro-entrepreneurship by meeting the needs of unemployed clients, developing and expanding micro-enterprises, fostering confidence, having varied products, low cost of returns and minimal conditions.

Informant 1 said: “These sources will increase the capital of the MFIs and thus *positively impact their ability to meet the demands of clients*”.

Informant 2 added:

There is a positive relationship between these resources and the creation and development of more micro-enterprises because the institutions will be able to meet the needs of clients and provide them with appropriate support. Such a resource will create trust among clients towards Islamic microfinance institutions.

Similarly, informant 3 added:

These resources will contribute to increasing the confidence of clients in dealing with institutions that receive funding from these sources, especially if a strong media awareness and promotion back it.

**Informants 2 and 3 mentioned:**

These resources will create confidence among unemployed clients and IMIFs because they will increase the financial strength of IMIFs, thereby positively impacting their relationship.

**Informants 1, 2, and 5 commented:**

The percentage of profits of IMIFs will be low and thus will encourage existing clients to expand and develop their micro-entrepreneurship. This will attract the unemployed to deal with Islamic microfinance institutions.

**Informant 5 shared:**

The availability of an inexpensive financial resource leads to a decrease in the percentage of return. This feature will motivate customers to expand their small activities because it will obtain a higher profit margin

**Informant 9 added:**

These resources will motivate customers by lowering the expected rate of return that they must pay to the lending institution as well as the low conditions associated with funding through these sources.

The study also found that waqf, zakat, and crowdfunding will help IMIFs develop their products. Informants 7 and 9 explained:

Through waqf, zakat, and crowdfunding, IMIFs will be able to diversify their products which will meet the various needs of the unemployed.

**Informant 7 mentioned:**

Clients will benefit from these sources because MFIs will raise the ceiling on financing granted to clients. Moreover, MFIs will be able to open new branches in other regions and have a variety of new products from which customers will benefit directly.

**Informants 2, 3, and 8 mentioned that:**

Because of the low cost of borrowing and minimal conditions, the unemployed will be motivated to start up micro-enterprises through Islamic microfinance institutions.

**Informant 11 has a different opinion, saying that:**

There is no direct influence between these sources and clients because clients are not interested in the financing resources of Islamic microfinance institutions. They are only more interested in the amount of financing they want to obtain from Islamic microfinance institutions.

**Informant 10 added:**

Some microfinance institutions impose high-profit rates on microfinance programmes because of the risks of financing, but with these resources, the profit rates will be very low and thus will encourage the unemployed to deal with microfinance institutions because the goal of these sources is to help the needy.



## 5.6 *The Potential Challenges of Waqf, Zakat, and Crowdfunding in Yemen*

Informants were asked concerning their views on the potential challenges expected when applying waqf, zakat, and crowdfunding in post-conflict Yemen. The interview findings identified several challenges facing these resources in Yemen. These challenges are the delay in paying the financing instalments, legislation, political and economic instability, lack of transparency, community awareness and inflation, and currency instability.

Informants 9 and 10 mentioned that: *“Legislation is a challenge and obstacle to implementing this model, and therefore the proposal must be legalised first”*.

Informant 9 added:

As for legislation, there are basic principles in the zakat and waqf law that would greatly facilitate the application of this model, but they just need to be developed. The multiplicity of fatwas on this model does not represent a great challenge if a unified group of Shariah specialists is appointed to study the fatwas related to these sources.

Informants 3 and 5 added:

The political and economic instability negatively impact the stability of financial policies, and this will affect the implementation of this model because the government must support these resources.

Informant 9 added:

Several critical challenges will face this model which is the include economic instability, fuel prices rise, fragile infrastructure, inflation, currency instability and the legal procedures especially in the agricultural sector, which is the primary activity of microfinance.

Informants 6 shared:

Yemen is a developing country, and most developing countries suffer from a lack of transparency. This will negatively affect the distribution of these resources because standards are not applied. The most important challenge that will face the application of these resources, in my opinion, is dealing with the local currency because it is still unstable, complex government procedures, intermediaries, and nepotism in the distribution of financing to microfinance institutions, as well as the lack of transparency in the distribution of financing and weak training of IMIFs staff concerning dealing with these resources.

As for community awareness, informant 7 mentioned:

*“The current community awareness is one of the challenges facing the application of this model because of the misunderstanding of the benefits of this model”*.

Informant 9 mentioned:

The most important challenges are the need for efficiencies to manage this type of financing whether in organising the fatwas, administrative organisation, the professional development of workers, and the development of practical procedural systems and the necessary legislation. Secondly, creating societal awareness towards these sources and the possibility of using them to finance Islamic microfinance. This awareness targets the parliamentarians to legislate law, the community itself, the government, funders, and the financing institutions themselves.

Informant 8 explained:

Inflation and currency instability have adversely impacted implementation because this model depends on returning the financing through instalments.

Informant 1 mentioned that failure to pay the amount of financing is one of the challenges:

The most important future challenge that will face this type of financing is clients evade paying the amount of financing and therefore the capital may be lost. In addition, legislation and laws are considered a great challenge because this type of resource needs clear legislation.

## 5.7 Informant Suggestions

The informants were asked to give their suggestions or comments on the proposed resources. Informants 1 and 11 suggested the necessity of involving those responsible for waqf, zakat, and crowdfunding in monitoring and supervising the process of financing Islamic microfinance institutions. While informants 2 and 10 suggested focusing on the steps to implement this proposal, starting with creating awareness, preparing competencies, legislation, application procedures, training, and systems development. Informant 4 suggested allocating an amount of banks' cash reserves imposed by the central bank to finance Islamic microfinance institutions. Informant 5 mentioned:

The central bank must impose a certain percentage of the capital of banks or their active portfolios to finance the Islamic microfinance institutions because in this model, the state will be the main guarantor for the success of this model.

Informant 6 suggested focusing on promoting success stories that Islamic IMFIs previously funded. Informant 8 stated that: *"This model is very important and was supposed to be applied in Yemen in recent years"*.

Informant 3 added:

I do not have suggestions, but I assure you through my experience that this proposed model will be beneficial for Islamic microfinance institutions as well as the customers and unemployed.

Informant 9 recommended:

Follow the models that have been applied in other countries and start from where the others ended.

Informant 11 mentioned:

The most important step for the success of this type of financing is to formulate the legal and structural grounds for this model, in addition to oversight and transparency.

On the other hand, the findings of these interviews appear to be aligned with previous studies such as Hassan and Ashraf (2010), Ahmed (2007), Alonso (2015), and Arfi (2019). Furthermore, the study of Hassan (2014) found that zakat and cash

awqaf played a positive role in the increase of income, production, and environmental awareness, economic betterment of the members through IMIFs in Andaman Islands. The study also argued that social capital plays a crucial role in facilitating adoption and overcoming constraints of lack of financial, human, and natural capital. Similarly, Ahmed (2007), and Kahf (2004) found that the waqf and zakat-based IMIFs played a positive role in reducing unemployment and poverty. Haneef et al. (2015). Regarding crowdfunding, Alonso (2015) found that there is a positive relationship between crowdfunding and Islamic microfinance in Egypt. Lutfi and Ismail (2016) found that it is permissible for crowdfunding to be incorporated with the Shariah-compliant contract of sadaqah to mobilize the fund from the community for Islamic microfinance institutions. They also found that charitable crowdfunding can serve as a platform to finance entrepreneurial projects through microfinance institutions.

## 6 Conclusion

The main of this paper was to investigate the role of waqf, zakat, and crowdfunding in developing Islamic microfinance institutions and reducing the unemployment rate in Yemen. The findings of this paper revealed that the waqf, zakat and crowdfunding are considered effective tools to reduce the unemployment rate through IMIFs as well as will be easy to implement. Moreover, it found that these resources will contribute to motivating micro-entrepreneurs to extend and develop their micro-enterprises in Yemen through IMIFs. On the other hand, this paper suggests that government, businessmen and IMIFs should establish foundation for waqf and zakat for purpose of financing IMIFs. It also suggest that businessmen and IMIFs should work together to collect fund through crowdfunding platform to finance IMIFs activities.

## References

- Abdullah: Islamic Finance for Small and Micro Enterprises, Case Study of Yemen, Ph.D. Research, International Institute of Islamic Banking and Finance, International Islamic University – Malaysia (2013)
- Acha, I.A.: Borrowing cycle: alternative microfinancing model for Nigeria. *Afr. J. Entrepreneurship* **1**(3), 46–52 (2008)
- Adnan, M.A., Ajija, S.R.: The effectiveness of baitul maal wat tamwil in reducing poverty: the case of Indonesian Islamic microfinance institution. *Humanomics* **31**(2), 160–182 (2015). <https://doi.org/10.1108/H-03-2012-0003>
- Ahmed, H.: The role of Islamic financial institutions in financing microenterprises: theory and practice. *IIUM J. Econ. Manage.* **15**(2), 197–217 (2003)
- Ahmed, H.: Waqf-based microfinance: realizing the social role of Islamic finance. World Bank, pp. 6–7 (2007)
- Al Mamun, A., Abdul Wahab, S., Malarvizhi, C.A.: Examining the effect of microcredit on employment in Peninsular Malaysia. *J. Sustain. Dev.* **4**(2), 174–183 (2011). <https://doi.org/10.5539/jsd.v4n2p174>

- Alonso, I.M.: Crowdfunding in Islamic finance and microfinance: a case study of Egypt. Access to Finance and Human Development—Essays on Zakah, Awqaf and Microfinance, 85. Bloomsbury Qatar Foundation, Doha, Qatar (2015). [http://www.wijdantariq.com/wp-content/uploads/2016/05/Islamic-Finance-Book\\_Volume\\_1.pdf#page=102](http://www.wijdantariq.com/wp-content/uploads/2016/05/Islamic-Finance-Book_Volume_1.pdf#page=102)
- Alrashedi, M.Y., Mohammed, M.O., Othman, A.H.A.: moderating and mediating effect of micro-takaful and training activities between Islamic microfinance and micro-entrepreneurship: a case study of Yemen. In: *Lecture Notes in Networks and Systems, LNNS*, vol. 194, pp. 1687–1701. Springer, Deutschland (2021). [https://doi.org/10.1007/978-3-030-69221-6\\_124](https://doi.org/10.1007/978-3-030-69221-6_124)
- Alshebami, A.S., Khandare, D.M.: Microfinance in Yemen: challenges and opportunities. *Int. J. Manage. Soc. Sci.* **2**(12), 400–413 (2014). [https://www.researchgate.net/publication/299283487\\_Microfinance\\_in\\_Yemen\\_Challenges\\_and\\_Opportunities](https://www.researchgate.net/publication/299283487_Microfinance_in_Yemen_Challenges_and_Opportunities)
- Anand, K.R.: Factors affecting financial sustainability of microfinance institutions. *J. Econ. Sustain. Dev.* **3**(6), 1–10 (2012). <http://iiste.org/Journals/index.php/JEDS/article/view/1673>
- Antonio, M.S.: Islamic microfinance initiatives to enhance small and medium enterprises in Indonesia: From historical overview to contemporary situation. *J. Indones. Islam* **5**(2), 314–334 (2011). <https://doi.org/10.15642/JIIS.2011.5.2.313-334>
- Arfi, A.: The integration of awqaf, zakat and crowdfunding in Islamic microfinance framework: focus on Moroccan case. *Res. Appl. Islam. Finance* **3**(1), 43–57 (2019)
- Asmawati, A., Ahmad, S.: Impact of Islamic microfinance on improving the income and poverty reduction on microenterprises in province Aceh: case study in BaitulQiradh. *Media Syari'ah Wahana Kajian Hukum Islam Dan Pranata Sosial* **19**(2), 195–214 (2017)
- Cohen, M.L.B.: Crowdfunding as a financing resource for small businesses (Doctoral dissertation, Walden University) (2017). <https://www.proquest.com/docview/1914681625?pq-origsite=gscholar&fromopenview=true>
- Coleman, B.E.: The impact of group lending in Northeast Thailand. *J. Dev. Econ.* **60**(8), 105–114 (2004)
- Conroy, J.: Apec and financial exclusion: missed opportunities for collective action? *Asia-Pac. Dev. J.* **12**(1), 53–79 (2005)
- Devereux, S.: Social protection and safety nets in the Middle East and North Africa. Institute of Development Studies Research Report (2015). [www.ids.ac.uk/publications](http://www.ids.ac.uk/publications). Accessed 21 July 2019
- Dushnitsky, G., Guerini, M., Piva, E., Rossi-Lamastra, C.: Crowdfunding in Europe: determinants of platform creation across countries. *Calif. Manage. Rev.* **58**(2), 44–71 (2016)
- Göçer, I.: Relation between bank loans and unemployment in the European countries. *Eur. Acad. Res.* **1**(6), 981–995 (2013)
- Green, A., Tunstall, R., Peisl, T.: The benefits of crowdfunding for early-stage entrepreneurs: between finance gap and democratic involvement. In: *Conference on R&D Management, Pisa, Italy*, 23–26 June 2015, pp. 1–12. RADMA (2014). <http://eprints.whiterose.ac.uk/88996/>
- Haider, H.: The challenges of restoring governance in crisis and post-conflict societies. Dennis A. Rondinelli United Nations Department of Economic and Social Affairs and United Nations Development Programme, UN, NY, p. 152 (2008). ISBN 978-92-1-123162-5 (pb)
- Hassan, M.K., Ashraf, A.: An integrated poverty alleviation model combining zakat, awqaf and micro-finance. In: *Seventh International Conference—The Tawhidic Epistemology: Zakat and Waqf Economy*, Bangi, Malaysia, pp. 261–281, January 2010
- ILO: *Global Employment Trends 2013: Recovering from a Second Jobs Dip*, Global Employment Trends, p. 172 (2013b). <https://doi.org/92-2-113360-5>
- Kahf, M.: Shariah and historical aspects of zakat and waqaf. Paper presented for the Islamic Research and Training Institute, Islamic Development Bank (2004)
- Ledgerwood, J.: *Microfinance Handbook: An Institutional and Financial Perspective*. World Bank, Washington DC (1999)
- Lutfi, M.A., Ismail, M.A.: Sadaqah-based crowdfunding model for microfinancing and health care. *J. Muamalat Islam. Finance Res.* **13**(2), 31–51 (2016)

- Mohammed, A.D., Hasan, Z.: Microfinance in Nigeria and the prospects of introducing an Islamic version in the light of selected Muslim countries' experience. *Rev. Islam. Econ.* **13**(1), 115–117 (2009). <https://ikr.inceif.org/handle/INCEIF/1756>. Accessed 12 July 2020
- Nwachukwu, J.C., Aziz, A., Tony-Okeke, U., Asongu, S.A.: The determinants of interest rates in microfinance: age, scale and organizational charter. *Rev. Dev. Econ.* **22**(3), e135–e159 (2018). <https://doi.org/10.2139/ssrn.3137219>
- Nwyanwu, O.: Micro finance in Nigeria: problems and prospects. *Afr. Res. Rev.* **5**(2), 88–103 (2011). <https://doi.org/10.4314/afrrrev.v5i2.67307>
- Qaied, M.M.M., Basavaraj, K.: A study on the performance of microfinance institutions in the light of the current crisis in Yemen. *MUDRA J. Finance Account.* **6**(2), 29–43 (2019)
- Rahman, A.R.: <Islamic economics: theoretical and practical perspectives in a global Context> Islamic microfinance: a missing component in islamic banking. *イスラーム世界研究: Kyoto Bull. Islam. Area Stud.* **1**(2), 38–53 (2007). <https://doi.org/10.14989/70892>
- Rahman, R.A., Dean, F.: Challenges and solutions in Islamic microfinance. *Humanomics* **29**(4), 293–306 (2013). <https://doi.org/10.1108/H-06-2012-0013>
- Rhyne, E., Otero, M.: *Microfinance Through the Next Decade: Visioning the Who, What, Where, When and How*. Accion International, Boston (2006). [https://www.findevgateway.org/sites/default/files/publications/files/mfg-en-paper-microfinance-through-the-next-decade-visioning-the-who-what-where-when-and-how-2006\\_0.pdf](https://www.findevgateway.org/sites/default/files/publications/files/mfg-en-paper-microfinance-through-the-next-decade-visioning-the-who-what-where-when-and-how-2006_0.pdf)
- Robinson, M.S.: *The Microfinance Revolution: Lessons from Indonesia*, vol. 2. World Bank Publications, Washington, D.C. (2001)
- Rokhman, W.: The effect of Islamic microfinance on poverty alleviation: study in Indonesia. *Econ. Rev. J. Econ. Bus.* **11**(2), 21–30 (2013)
- Sherwani, N.U.K., Iqbal, J., Malik, Z.: Microfinance and crowd funding: alternative approaches for entrepreneurship development. *Int. J. Manage. IT Eng.* **8**(2), 233–243 (2018)
- Social Fund for Development (SFD), Yemen: Annual report (2014). <http://sfd-yemen.org/content/17/9>. Accessed 25 Mar 2018
- Thaker, M.A.B.M.T., Mohammed, M.O., Duasa, J., Abdullah, M.A.: Developing cash waqf model as an alternative source of financing for micro enterprises in Malaysia. *J. Islam. Account. Bus. Res.* **7**(4), 254–267 (2016). <https://doi.org/10.1108/JIABR-09-2014-0029>
- Tohirin, A.: The cash waqf for empowering the small businesses. In: 7th International Conference- The Tawhidi Epistemology: Zakat and Waqf Economy, Bangi, Selangor, January 2010
- Wilson, R.: Making development assistance sustainable through Islamic microfinance. In: *Shari'a-Compliant Microfinance*, vol. 9780203808832, pp. 63–80. Routledge, London (2013). <https://doi.org/10.4324/9780203808832>
- World Bank: *The State of Social Safety Nets* (2018). <https://doi.org/10.1596/978-1-4648-1254-5>. Accessed 22 Feb 2019
- Zarka, M.A.: Leveraging philanthropy; monetary waqf for micro finance. Paper presented at the Symposium Towards an Islamic Micro-Finance (2007). <https://www.microfinancegateway.org/sites/default/files/mfg-en-paper-leveraging-philanthropy>. Accessed 22 July 2019

# The Role of Islamic Psychological Contract on Authentic Leadership and Organizational Commitment



Tien Suhartini, Muafi Muafi, Widodo Widodo, and John Suprihanto

**Abstract** This study tries to explore the dimensions of psychological contract from Islamic perspective, which acts as a mediator between authentic leadership and organizational commitment. There are 3 propositions developed related to this research, namely the relationship between authentic leadership and organizational commitment, authentic leadership and Islamic psychological contract, and Islamic psychological contract and organizational commitment. The literature review used is based on the results of academic research and also from several verses of the Quran and Hadith, especially those related to IPC to obtain the required data. This paper provides an integration of organizational literature, offers an integrated framework, and provides some value additions. The main objective of this study is to develop a model of relationship between authentic leadership and affective organizational commitment, mediated by Islamic psychological contract. This study finds out 3 dimensions of IPC i.e., transactional, relational, and liturgical contract.

**Keywords** Islamic psychological contract · Liturgical contract · IPC dimensions

## 1 Introduction

Topics concerning psychological contract has always attracted attention organizational researchers, since Rousseau's expression in the late 1980s, based on ideas of Argyris and MacNeil. The concept of psychological contract is evolving constantly as it is very subjective. Likewise, the theme regarding leadership has been carried out for

---

T. Suhartini · M. Muafi (✉)

Department of Management, Business and Economics Faculty, Universitas Islam Indonesia (UII), Yogyakarta, Indonesia  
e-mail: [muafi@uii.ac.id](mailto:muafi@uii.ac.id)

W. Widodo

Department of Management, Economics and Business Faculty, Universitas Islam Sultan Agung, Jawa Tengah, Indonesia

J. Suprihanto

Department of Management, Economics and Business Faculty, Universitas Gadjah Mada, Yogyakarta, Indonesia

decades in various countries. This topic is interesting since organizations are undergoing changes, which are influenced by internal and external factors. Researchers continue to look for the strengths and weaknesses of leadership styles to come across the most leadership type which is needed in organizations, and surviving the organization as well. Meanwhile, Authentic Leadership is considered as the most suitable for various organizations. For a worker, the required fit is not only to the leader, but also to the organizational environment in order to feel comfortable while joining the organization. Feeling comfortable and engaged to the organization can strengthen the psychological contract of workers, which in turn will lead to commitment.

Psychological Contract (PC), according to Rousseau (1990), is a term in the organization which defines the fulfillment and non-fulfillment of organizational relationships as to obligations, expectations, and promises, reciprocally. From the worker's perspective, PC is an individual's belief about reciprocal obligations that becomes contractual when the individual believes that he or she owes a certain contribution to the employer (e.g., hard work, loyalty, sacrifice) in exchange for certain inducements (like high salary and job security). PC is also referred as a system of unwritten and understood obligations between employers and employees that contain shared expectations and obligations about how both parties should act (Rousseau 1995). The three main constructs that are critical to building long-term relationships between leaders and their followers are hope, trust, and positive emotions. When followers believe in their leader's abilities, integrity, and benevolence, they are more confident and willing to engage in risk-taking behavior (Avolio et al. 2004).

A good leader is a real asset to maintain an organization's competitive advantage by being one step ahead of their competitors (Arda et al. 2016). Leadership is a process of influencing a group of individuals to achieve a common goal (Yukl 2013) which represents a psychological contract between leaders and followers who intend to try the best way to direct, protect, and maintain them fairly (Beekun and Badawi 2009). The main function of leadership is to produce change and movement, while the main function of management is to provide order and consistency to the organization. Leaders cannot be called leaders only based on the position they hold in the organization (Datta 2015).

The rising number of corruption cases and various scandals that occur in companies, at every level and institution, causing experts and business leaders developing and looking for new leadership models and theories that are at least able to minimize these problems. This chaos began to increase since the beginning of the twenty-first century (Covelli and Mason 2017). Authentic leadership (AL) is a construct that combines traits, behaviors, styles, and skills to promote ethical and honest behavior and thus have more positive long-term outcomes for leaders, followers, and their organizations. According to proponents of the theory, authenticity is believed to make leaders more effective, lead with meaning, purpose, values, and better equipped to face organizational challenges.

The occurred scandals both at home and abroad over the last decade, sum up the need for an ethical approach to leadership. This incident has motivated academics and business leaders to reexamine existing leadership practices and to establish a leadership model in which leaders act sincerely, morally, and inspire their followers to do the same actions (Datta 2015).

In today's business environment, many complex change programs as they are sustainable, long-term, unplanned, radical, sudden, repetitive, and require learning during the change process (Alavi and Gill 2016). Some have emphasized the complexity of change in terms of continuous development, learning, and innovation rather than short-term planned change.

Organizational sustainability is not determined by the pattern of leadership or leader characteristics only, but by the convenience of the followers as well. Follower comfort will be realized when they found a fit in the organization. Knowing the values and culture of the organization is needed by someone before joining the organization. Conformity between workers and their organizations can predict future resilience. However, someone will take into account whether the effort made will be in accordance with the rewards obtained. When a worker feels conformity with the organization and its environment, he/she will indirectly try to stay in the organization by trying hard to perform well and be responsible for their duties whether there are supervisors or not, which is known as a psychological contract fulfilment.

The psychological contract between workers and their employers, supervisors, organizations, or leaders, is one of the factors forming organizational commitment which is will have an impact on workers' desire to remain with the organization. Generally, organizational commitment is a strong desire to remain a member of the organization and strive in accordance with the wishes of the organization and belief as well as acceptance of certain organizational values and goals (Luthans 2011). In addition, commitment to organization is defined as a person's psychological bond to the organization that includes work involvement, loyalty, and a feeling of trust in the values of the organization (O'Reilly 1989). Meanwhile, according to (Allen and Meyer 1990) organizational commitment is the emotional attachment, identification, and involvement of individuals with the organization and the desire to remain a member of the organization. Organizational commitment, in this paper, referred to a person's psychological bond to the organization which includes work involvement, loyalty, and trust in the organization values as it is supported by the organization values.

Based on the explanation before, the issue in this study is regarding the role of the Islamic Psychological Contract as a mediator between Authentic Leadership and Organizational Commitment, which in this case is manifested in the desires of followers. organization to perform tasks in accordance with order of the leader. Therefore, this study intends to provide a deeper understanding of the IPC concept by adding a liturgical contract dimension, which is a novelty in research on PC, because research on this issue has not been found before. The propositions covered in this study are followers' perceptions of authentic leadership as an antecedent and organizational commitment as a consequence in relation to the concept of the Islamic Psychological Contract.



## 2 Literature Review

### 2.1 *Social Exchange Theory (SET)*

Social exchange theory (SET) is one of the most influential conceptual paradigms for understanding behavior in the workplace. Theorists agree that social exchange involves pleasurable interactions. The explanatory value of SET has been felt in areas such as social power, networking, board independence, organizational justice, psychological contract, and leadership. One of the basic tenets of SET is relationships develop over time into mutual trust, loyalty, and commitment. The resources that are exchanged are generally love, status, information, money, goods, and services, although most of them are not highly valued by organizational experts (Cropanzano and Mitchell 2005). Griep et al. suggested that social exchange relationships are important context for understanding PC fulfilment, i.e., worker health and well-being (Ali et al. 2020). Social exchange relationships developed when employers care for their employees, thereby leading to beneficial consequences. Profitable and fair dealings result in strong relationships, and these relationships lead to effective work behaviors and positive employee attitudes.

According to Blau (1964), trust and other macro motives, such as loyalty and commitment, provide the basis for relational contracts and social exchange. Macro motive is a set of attributions that characterize a person's feelings and beliefs about his exchange partner. Social exchange theory is based on the central premise that the exchange of social and material resources is a fundamental form of human interaction. Social exchange is defined as the voluntary action of individuals, motivated by the returns they are expected to bring from others. Nevertheless, it is important for social exchange initiators to consider the capabilities of intended exchange partners, in the work context (Sungu et al. 2021).

Moreover, Blau (1964) states that social exchange is a face-to-face interaction which formed by the exchange of reciprocal rewards. Rewards can be in the form of (1) positive reinforcement sources such as pleasure, satisfaction, gratification; and (2) social rewards such as personal attractiveness, social acceptance, social approval, instrumental service, appreciation/prestige, and obedience/power. There are costs and resources besides rewards. Costs are lost penalties or rewards, which can be in the form of investment (time and effort devoted to developing skills that will be used to respect others), direct costs (resources given to others in exchange for something else), and opportunities (lost rewards that may be posted elsewhere). Whereas resources are anything that can be transmitted through interpersonal behavior, including commodities, materials, or symbolic materials. Another element in social exchange is expectations. Blau divides 3 expectations in social exchange, namely: (1) general expectations, related to roles, occupation, which is shaped by social norms what should be accepted by someone; (2) Particular expectations, related to gifts received from certain people; and (3) Comparative expectations, i.e., the rewards of a relationship minus the cost of maintaining the relationship.

## 2.2 Authentic Leadership

Etymologically, the word authentic comes from the Greek *authento* which means to have full power, as the possession of personal experiences, including one's thoughts, emotions, needs, desires, or beliefs, which involves being self-aware and doing something in accordance with one's authenticity with express what someone thinks and believes is extraordinary (Gardner et al. 2011). While authenticity is a reflection of one's personal values and beliefs in one's behavior, it can be good or bad (Shamir and Eilam 2005) It is an act accordance with the truth, expressed in a way that is in accordance with his inner thoughts and feelings (Khan 2010). The construct of authenticity has been studied by Greek philosophers as "know thy-self" or "thy true self" (Dimovski et al. 2012).

Authentic Leadership (AL) started developing in 2004 and is the last stage in the evolution of leadership development, due to the fact that AL reaches all workers in the organization. Authentic leaders must identify the strengths of their followers and help to develop them. AL is also seen as a success factor for the progress of mass organizations because authentic leaders not only talk about organizations but also social problems (Dimovski et al. 2012). AL is a pattern of leader behavior that utilizes and promotes positive psychological capacities and a positive ethical climate, to foster greater self-awareness, internalized moral perspective, balanced information processing, and relational transparency, on the part of the leader working with followers, and encouraging positive self-development (Datta 2015). In this definition, self-awareness refers to demonstrating an understanding of how one originates and makes sense of the world and how that meaning-making process influences how one views oneself over time. It also demonstrates an understanding of one's strengths and weaknesses and the nature of self-multifaceted, including to gain insight into the self through transmission to others, and being aware of one's impact on others.

In general, there are 2 dimensions of authentic leadership as measured by Datta (2015) i.e., 1) Dimension of managerial effectiveness and 2) Dimension of Leadership Effectiveness. The results of Covelli and Mason's research (Covelli and Mason 2017) showing that AL leads to various dimensions of managerial effectiveness including organizational performance, satisfaction of follower needs, and improvement in the quality of work life. AL causes decrease in followers' negative attitudes and behaviors, such as absenteeism, dissatisfaction, and hostility. AL also leads to an increase in positive group attitudes and behaviors. Finally, managers who practice AL achieve the personal success that their followers perceive it to be. AL leads to various dimensions of leadership effectiveness including respect for the leader, commitment to the leader's orders, improvement in problem-solving skills, and increased ability of the group to deal with change and crises. Meanwhile, Muceldili et al. (2013) concluded that AL has a positive influence on innovation and creativity.

Shamir and Eilam (2005) divided 4 characteristics of authentic leaders, namely (1) not pretending when leading, as they are, and being themselves; (2) motivated by personal beliefs rather than by the pursuit of status, honors, and other personal benefits; (3) original, not imitating anyone, leading according to his position; (4) their actions are based on personal values, beliefs, and identity.

### 2.3 *Psychological Contract*

Psychological contract is an individual's belief about the terms of a reciprocal exchange agreement between the individual and another party (Rousseau 1989). Meanwhile, psychological contract theory is perceived as a means of examining the linkages between Human Resource Management (HRM) and performance as well (Kutaula et al. 2019). Social exchange (Blau 1964) and norms of reciprocity (Gouldner 1960) provide a conceptual basis for explaining the consequences of individuals' evaluations of their psychological contract (Shapiro et al. 2018). Argyris (1960) views the psychological contract as an implicit understanding between a group of employees and their employer, and argues that the relationship can develop in such a way that employees will exchange higher productivity, as well as lower complaints, in exchange for wages received along with job security. This characteristic is the exchange of tangible, specific, economic, and agreed-upon resources by both parties that enables the fulfillment of each party's needs.

Rousseau (1989) shifted the terms of exchange agreements from expectations to promises, emphasizing the role of organizations in creating psychological contracts, whereas the earlier emphasis on expectations captures influences unrelated to the organization. The focus on the promise nature of the exchange relationship includes both explicit and implicit promises. Explicit promises result from the employee's interpretation of verbal and written agreements, whereas implicit promises refer to the interpretation of consistent and repeated patterns of exchange with the employer. Both explicit and implicit promises, can be based on behavioral observations as key elements in communicating promises in contracts. Refer to Solberg et al. (2020), developmental promise fulfilment by line managers, is important in fostering employee willingness to be internally employable.

Psychological contracts are subjective perceptions that do not need to be shared with others (Rousseau 1989). Thus, it is possible that employers and employees have different views on the terms of their psychological contract and the extent to which they believe that each party has fulfilled their obligations. Rousseau also argues that psychological contract exists on a continuum from relational to transactional and that the two ends are inversely correlated: the higher the relational level of the psychological contract, the lower the transactional level of the psychological contract, and vice versa. Relational contracts are characterized by a long-term exchange of social-emotional resources (Rousseau 1995). In return for loyalty, employees are given promotions to ensure career development and/or job security to remain with the organization. In transactional contracts, the focus is on economic exchange. In return

for flexibility and self-career management, employees are provided with training and career development to ensure their employability. The Islamic psychological contract in this article, referred to an individual's belief about a reciprocal exchange agreement between a focused person and another party, refer to the individual's understanding and belief in working as a manifestation of worship.

Rousseau (2000) divided 4 dimensions of psychological contract, namely: (1) Transactional, which is characterized by the work being done only of a monetary nature, the type of work being narrow, and the lack of employee involvement in the organization; (2) Relational, where there is a continuous psychological relationship between employees and organizations such as loyalty, reciprocity, support, and giving rewards from the company in developing careers for their employees, strengthened by MacNeil (1985); (3) Balanced, which is a combination of the nature of transactional and relational contracts. Contracts are dynamic and open-ended, focusing on the company's economic success, employee engagement, and providing career advancement opportunities; and (4) Transitional, which is not actually a psychological contract, but describes an undesirable condition as a result of changes accompanied by various deviations. The psychological contract is important for experts and management practitioners since it affects the way individuals think, feel, and behave in organizations, thereby providing the basis for coordination and cooperation between employees, managers, executives, and business owners (Rousseau et al. 2013).

## ***2.4 Organizational Commitment***

Commitment is a construct that arises to explain a consistent sequence of behaviors or actions, involves behavioral choices, and implies resistance to appropriate actions and alternatives, and is also associated with withdrawal and adaptation. Commitment is closely related to the individual psychological aspects. Psychological attachment can be based on compliance (instrumental engagement for certain extrinsic rewards), identification (involvement based on a desire for affiliation), and internalization (involvement that results from congruence between individual and organizational values) (O'Reilly and Chatman 1986). The concept of organizational commitment relates to the extent to which people are involved with their organization and are interested in staying in it (Greenberg 2011) which is very important for organizational success (Balli and Yanik 2014).

Allen and Meyer (1997) divides organizational commitment into 3, namely: 1) Affective commitment which refers to the emotional attachment of employees and their involvement in the organization which is influenced by personal characteristics and work experience; 2) Continuance commitment, refers to the costs of leaving the organization, which is influenced by employees' perceptions of their job outlook and alternatives if they leave their organization, and 3) Normative Commitment, refers to employees awareness on obligation to remain in the organization which is influenced by social and cultural orientation.

Commitment in the organization can be formed due to several factors, both from the organization and from the individual himself. Affective commitment, continuance commitment, and normative commitment have their own developmental pattern (Allen and Meyer 1997). Affective commitment is formed through organizational characteristics, individual characteristics, and work experience. Continuance commitment can develop due to various actions or events that can increase losses if one leaving the organization. Some of these actions or events can be divided into two variables, namely investments (time, effort or money, that an individual must give up if he leaves the organization) and alternatives (the possibility to enter another organization). Normative commitment can develop from a number of pressures that individuals feel during the socialization process (from family or culture) and during socialization to the organization. Normative commitment also develops because the organization provides something very valuable to individuals that cannot be reciprocated. Another factor is the existence of a psychological contract between members and their organization.

## 2.5 *The Islamic Worldview*

The Qur'an explains that knowledge belongs to Allah (Sura 46: 23 and Sura 67: 26) and is not limited (QS 18: 109 and QS 31: 27). In Sura 55: 33, Allah SWT confirms that through the power of science and technology, humans can cross the corners of the sky and the earth. The truth contained in the Qur'an is always open to be studied, discussed, tested, and scientifically proven by anyone. Sura 6: 38 and Sura 12: 111 confirm that the Qur'an explains and covers everything, including knowledge and the problems that come out of it. In the Qur'an, we will find verses that refer to these sciences, including knowledge about the miracle of the creation of living things, and about the kingdom of God that rules the sky and the earth, and what is in outer space. People can see the signs of Allah's greatness in all corners of the earth and also in themselves (Surah 41: 53).

One of the enlightenments brought by Islam to humanity is scientific thinking referred to the Qur'an and Hadith. The awareness of Muslim scientists derived from the Qur'an and Hadith triggers the greatest achievements in science. Another trait taught by the Qur'an and Hadith to Muslims is open-mindedness, which allows them to acquire knowledge from other civilizations without prejudice. There is no single science that stands alone and separate from the epistemological structure of Islam, these sciences are explanations that affirm revelation, which the truth is certain. Basically, the essence of science is to seek the truth scientifically, but in the Qur'an and Hadith, the nature of science is not merely to seek scientific truth, but to seek signs, virtues, and mercy (Qutub 2011).

Talking about an Islamic perspective, it cannot be separated from *Maqasid* Syariah (Means of establishing Islamic law). *Maqasid* is the ultimate goal of life (in this world and the hereafter), by bringing benefit and avoiding harm. The main purpose of the creation of the universe, including humans, is to worship Allah Almighty, as the

sole purpose, keeper and ruler of all creatures, who gives orders in one unit. The multi-sector conservation model agreed upon by Muslim jurists, which guarantees the idea of ‘sustainability’, are by maintaining 6 things, namely: *al-dīn* (religion), *al-nafs* (soul), *al-’aql* (intellect), *al-nasl* (posterity), *al-mal* (property), and *al-’ird* (dignity) (Moneim 2018).

## 2.6 Islamic Psychological Contract

As described in the previous discussion, the psychological contract is an individual belief system regarding the obligations between the individual and the exchange partner. In the Islamic worldview, those who pledge allegiance to the leader are also seen as pledging allegiance to Allah too (Qur’an 48: 10); as well as believers who strengthen their stance (Qur’an 41: 30), and those who keep their mandates and promises (Qur’an 70: 32), then they will get heaven. According to Suhartini (2020), The Islamic psychological contract is an individual (Muslim) belief system regarding obligations with exchange partners based on faith and belief that carrying out work properly and seriously is a form of practicing the verses of the Qur’an, so that apart from partners, they are also bound by Allah SWT. Therefore, the Islamic psychological contract is an individual (Muslim) belief system regarding obligations with exchange partners based on faith and belief that keeping promises which are realized by carrying out work properly and seriously is a form of practicing religion commands, which will be are bound to partners and Allah SWT as well.

This paper will discuss transactional and relational psychological contracts, originating from Rousseau, with the consideration that balanced is a combination of transactional and relational, while transitional is not part of a psychological contract. As a development dimension, it will be discussed about the liturgical contract, which will be the novelty in this research. The following is a provisional conclusion regarding the psychological contract drawn from the two main sources of Islamic law, the Qur’an and the Hadith.

### 2.6.1 Islamic Transactional Psychological Contract (ITPC)

ITPC views exchange as something that is temporary, narrow, tangible, to fulfill external (material) welfare, such as adequate pay, suitable work, and opportunities for skills development. The conclusions that can be drawn regarding TPC from an Islamic perspective are: 1) Workers get a decent wage, so they are able to meet their basic needs (Al Hadith); 2) Workers get assignments according to their skill and abilities (Al Hadith); 3) Workers are required to seek worldly happiness and enjoyment (Qur’an 2: 01; QS 28: 77); 4) Male and female workers have the same rights and opportunities (Surah 16: 97); 5) Workers are entitled to the promised compensation after completing their obligations in accordance to the agreement (QS 3: 57); and 6) Everyone has the right to receive a reward in accordance with their achievements and capacities (Qur’an 53: 39).

### 2.6.2 Islamic Relational Psychological Contract (IRPC)

IRPC is a contract for a relatively long period of time to fulfill mental (spiritual) welfare. Work is seen as means to stay in touch (*silaturahmi*), getting appreciation, and increasing creativity. The conclusions regarding RPC from an Islamic perspective are: 1) Workers who fulfill promises (agreed contracts) must be confident and believe that it is the best thing in the employer employee relationship (QS 41: 30); 2) Workers who fulfill promises (agreed contracts) do not feel sad and worried/fearful, whatever the result (QS 41: 30); 3) The worker realizes that if he breaks the promise, the loss or consequence will return to him/her (QS 70: 32, 35); 4) Workers try to make improvements by honing creativity and innovation (QS 4: 146); 5) Workers will always keep the mandate (QS 8: 27; QS 23: 8); 6) Workers will always keep their promises (Qur'an 23: 8); 7) Worker does the job as well as he can, since his/her deeds will be witnessed by other believers (QS 9: 105); 8) Workers believe that work with sustainable value will be better and can be expected (QS 18: 46 and QS 19: 76); and 9) Leaders and followers love each other in goodness (Al Hadith).

### 2.6.3 Islamic Liturgical Psychological Contract (ILPC)

ILPC is a contract to achieve happiness in the hereafter or eternal welfare, by collecting sustain charity (*amal jariyah*), reward, Allah's blessing, and heaven. The conclusions regarding LPC from an Islamic perspective are: 1) Workers who fulfill promises (agreed contracts) will get heaven (Surah 41: 30 and QS 70: 35); 2) Workers realize that all their actions are witnessed by Allah SWT (87: 7); 3) Workers don't care about people's judgments, for the truth is only in the sight of Allah SWT (Al Hadith); 4) The worker does the job as best he can, since his/her deeds will be witnessed by Allah and His Messenger (Qur'an 9: 105); 5) Workers believe that work is worshiping to Allah SWT, doing the best work due to get eternal rewards and happiness in this world and the hereafter (QS 18:110); and 6) Leaders and those followers pray for each other for the common good (Al Hadith).

## 3 Propositions

This study uses authentic leadership as dependent variable; organizational commitment as independent variable; and Islamic Psychological Contract as intervening variable. In this study, the intervening variable became the main variable. That is, by analyzing this variable, the final result is expected to be able to find a solution to the existing problems.

### ***3.1 Authentic Leadership (AL) and Organisational Commitment***

Authentic Leadership (AL) will motivate by mission not by money, pave the way for values not on ego, connect with others through the heart not with people, which will make us feel unlimited pleasure, satisfaction, and love (Dimovski et al. 2012; Alnajjar and Abdullah Othman 2021). Knowledge and self-consistency of leaders are antecedents of AL and follower satisfaction to supervisors, organizational commitment is also perceived to origin team effectiveness (Peus et al. 2012; Abdo Alaghbari et al. 2021; Bilal Khan et al. 2021). Employee perception as authentic for their leaders is positively related to organizational trust and organizational commitment but negatively correlated with organizational cynicism (Tabak 2013). AL will help create better long-term positive outcomes for leaders, followers, and organizations. Authentic leaders are not a new phenomenon, but they are needed to lead with integrity, honesty, and with ethical behavior and moral behavior, which are honest with themselves and others (Covelli and Mason 2017).

Covelli and Mason's research (2017) showed that AL leads to various dimensions of leadership effectiveness including commitment to leader orders which is supported by Datta (2015), Leroy et al. (2011). Authentic leaders stimulate the motivation and self-esteem of their followers which in turn creates trust in the leader, job satisfaction, and commitment (Marinakou and Nikolic 2016). Authenticity can be obtained through self-awareness, self-acceptance, beliefs, values, morals, actions, relationships, etc. which is needed to get success at every stage of life (Robinson and O'Dea 2014). One of strategies to create organizational commitment of members is the way the leader sets an example and inspires members for future progress (Armstrong 1991). Authentic leadership and affective organizational commitment are behavior-related success factors in construction projects besides training, understanding, co-worker support, and future prospects (Batra 2020). Authentic leadership relies heavily on organizational leaders to set an example/role model first for their followers. As for a Muslim, obedience to the leader is an obligation after obedience to Allah and His Messenger. Work is a mandate as well as a promise that must be maintained and fulfilled, in order to be lucky (Surah 23: 8). For last decade, previous studies concluded that AL correlated on organizational commitment, such as Lux et al. (2019) which suggested that followers' affect-based trust in their leader mediates the relations between their perceptions of authentic leadership and their affective organizational commitment. Therefore, it is assumed that there is a relationship between authentic leadership and organizational commitment. The more a leader is perceived as authentic, the stronger the organizational commitment of follower (proposition 1).



### ***3.2 Authentic Leadership (AL) and Islamic Psychological Contract***

Authentic leaders demonstrate a passion for their goals, practice their values consistently and lead with heart (feelings) and head (mind). They establish long-term relationships, meaningful, and have the self-discipline to achieve results. They know who they are (Seco 2013). The more leaders are seen as authentic, the more employees identify with them and feel psychologically empowered, more involved in their roles, and exhibit more citizenship-rated behaviors (Covelli and Mason 2017).

“Authenticity is the consistent alignment of head (thoughts), mouth (words), heart (feelings), and feet (actions) to build trust, therefore, followers love their leader (Robinson and O’Dea 2014). AL is a collective product created by leader-follower interactions, which may be an indication of “true” authentic leadership. It is the mutual understanding of situational imperatives and behavioral cues from both parties involved that can label leaders’ behavior as truly authentic (Cerne et al. 2013). Authentic leaders have the core characteristics of openness, self-awareness, transparency, concern for others, and consistency. Such leaders have positive attributes of trust, optimism, resilience, and hope (Ahmad et al 2017). On the other hand, AL practices could mitigate the effect of employees’ negative behavior, such as perception of nepotism on tolerance to workplace incivility (TWI), which is part of psychological contract violations (Arici et al. 2020). Studies which conclude that there is a relationship between AL and psychological contracts have been carried out by Erkutlu and Chafra (2013), Arici et al. (2020), Phuong and Takahashi (2020), Chang (2020).

From Islamic teachings point of view, every follower/people/subordinate have to obey their leader, after prioritizing obedience to Allah and His Messenger. This is in accordance with the Qur’an Surah 4: 59 which commands believers to obey Allah, His Messenger, and the leaders. So, as long as the leader carrying out his leadership does not violate the rules of Allah and His Messenger, psychologically, a subordinate bound and responsible for carrying out his duties. According to Beekun and Badawi (2009), leadership represents a psychological contract between leaders and followers who intend to try the best way to direct, protect and maintain them fairly. Therefore, the second proposition is, when a leader is perceived as authentic, the follower willingness to fulfil Islamic psychological contract will be emerged.

### ***3.3 Islamic Psychological Contract (IPC) and Organisational Commitment***

Psychological Contract (PC) is an organizational term that defines the fulfillment and non-fulfillment of organizational relationships i.e., mutual obligations, expectations, and promises. It is also an individual’s belief in reciprocal obligations. Beliefs become contractual when the individual believes that he/she owes a certain contribution to the employer in return for a certain lure. PC creates an enduring mental model of working

relationships that provides a stable understanding of what to expect in the future and guides efficient action without the need for much practice (Rousseau 1990).

Researchers have used the concept of the psychological contract in various ways, but it is important to recognize that there are important aspects of all definitions of the psychological contract which include elements such as values, beliefs, expectations and aspirations of society, both employees and employers (Savarimuthu and Racha 2017). Psychological contracts are individuals' beliefs, formed by organizations, regarding the terms of exchange agreements between individuals and their organizations. The beliefs here are the promises, obligations, and expectations of the parties to the contract (Conway 2005). Perceived breach of contract is associated with a decrease in attitudes towards the organization such as lower commitment, trust, and job satisfaction, and a decrease in organizational trust and with a more cynical attitude towards the organization (Shapiro et al. 2018). One of the functions of the psychological contract is to satisfy the employee's need for control, implying that a sense of control can be an important psychological resource in understanding how employees react to breaches of contract. The Islamic psychological contract is an individual (Muslim) belief system regarding obligations with exchange partners based on faith and belief that carrying out work properly and seriously is a form of practice the verses of the Qur'an, so that apart from partners, they are also bound by Allah. SWT (Suhartini 2020).

Some authors emphasize the importance of the implicit obligation of one or both parties; others emphasize the need to understand people's expectations from work; while other schools of thought suggest that mutuality is a core determinant of the psychological contract. Employees, individually, build their psychological contract under the influence of internal and external factors. At the internal level, management's influence in employing organization is most obvious. Externally, there are various social and economic factors from which an employee can build a set of judgments and expectations (Dundon 2017).

Previous Studies from 2000 to 2019 concluded that there is a relationship between psychological contracts, both PC fulfilment and PC violation, and organizational commitment. For instance, research by Herrera and Heras-Rosas (2021) who suggested that organizational commitment is considered a key factor in achieving the objective of business organizations in their work environment, aspire to create a high level of performance and low levels of absenteeism and turnover, which can be conditioned by the psychological contract. Other study by Ali et al. (2020) concluded that both transactional and relational psychological contract can impact employees' organizational commitment. In the view of Islam, everyone is a leader, as company leaders, employees, housewives, traders, shepherds, or any profession, which will be held accountable for what they lead on the Day of Resurrection. In addition, in QS 4: 46 that people who repent, who make corrections, hold fast to Allah's (religion) and are sincere (work on) religion, will get a great reward. Likewise in QS 18: 110, it is stated that whoever hopes to meet Allah, then he should do righteous deeds. When a person (Muslim) realizes this, he will feel an attachment and responsibility towards his work, therefore the commitment (especially affective commitment) will be formed in his soul. Thus, the assumption is that there is a relationship between

the Islamic psychological contract and organizational commitment. Then, the 3<sup>rd</sup> proposition is when a leader (organization) is perceived has fulfilled the Islamic psychological contract, the organizational commitment of follower (employee) will emanate.

## 4 Discussion and Conclusion

The relationship model offered in this paper that authentic leadership will affect organizational commitment mediated by an Islamic psychological contract, is based on the assumption that leaders who lead with honesty, integrity, openness, help in career promotion, willing to listen to subordinates' complaints, and willing to accept criticism (feedback), will foster a feeling of attachment to the organization for his subordinates. The willingness of subordinates to carry out the assigned tasks is not solely because of the obligations that must be carried out, but rather the responsibility to achieve common goals and prosperity, as well as to form strong ties of relationships, which are not limited in time. The members of the organization will trust their leaders who always prioritize the common interest, common welfare, and will even pay attention to the benefits for the environment around the organization in every decision making. When an employee feels comfortable, happy, and satisfied with what he/she gets from the organization, accordingly, will stay in the organization, since his/her needs and wants can be found there. In the world of organizations, this is known as an organizational commitment. The hope is, every member has the highest commitment to the organization, namely affective commitment. This is what underlies Proposition 1, there is a strong relationship between authentic leadership and organizational commitment. When a leader is perceived as authentic, the followers' affective commitment will emerge by itself.

Authenticity is the consistent alignment of head (thoughts), mouth (words), heart (feelings), and feet (deeds). It builds trust, therefore followers love their leader (Robinson and O'Dea 2014). The more leaders are seen as authentic, the more employees identify with them and feel psychologically empowered, more involved in their roles, and exhibit more citizenship-rated behaviors (Covelli and Mason 2017). Authentic leaders are described as having a high moral character and those who are deeply aware of the way they think and behave, and are perceived by others as aware of their own and others' moral values/perspectives, knowledge, and strengths.

From the point of view of Islamic teachings, every follower must obey their leader, prioritizing obedience to Allah and His Messenger. This is in accordance with the Qur'an Surah Al Nisa verse 59 which commands believers to obey Allah, His Messenger, and the leaders. So, as long as the leader carrying out his leadership does not violate the rules of Allah and His Messenger, psychologically, subordinate feel bound and responsible for carrying out his duties. According to Beekun and Badawi (2009), leadership represents a psychological contract between leaders and followers who intend to try the best way to direct, protect and maintain them fairly. The best way that leaders and followers can do is to make Rasulullah SAW a role model

with the main characteristics of *Sidiq* (true), *Tabligh* (sharing), *Amanah* (trustful), *Fatonah* (wisdom/intelligent) (STAF). This is what underlies Proposition 2, there is a positive relationship between authentic leadership and Islamic psychological contracts. When a leader is considered authentic by fulfilling the character of the STAF, the followers will want to fulfill their Islamic psychological contract, by implementing the character of the STAF as well, like the leader.

Psychological contract is an individual's belief, formed by organizations, regarding the exchange agreements between individuals and their organizations. One function of psychological contracts is to satisfy employees' need for control, implying that a sense of control can be an important psychological resource in understanding how employees react to breach of contract. Employees, individually, build their psychological contract under the influence of internal and external factors. In Islamic perspective, everyone is a leader, as a company leader, employee, housewife, trader, herder or any profession, who will be held accountable for what he leads on the Day of Resurrection. When a person (Muslim) realizes this, he/she will feel an attachment and responsibility towards his/her work then the commitment (especially affective commitment) will be formed in his/her soul. Thus, the assumption is that there is the relationship between Islamic psychological contract and organizational commitment. This is what underlies Proposition 3, there is a positive relationship between the Islamic psychological contract and organizational commitment. When a Muslim worker feels that his Islamic psychological contract is fulfilled, he/her will reciprocate by increasing the commitment to the organization.

This research is design based on the gap between several studies on the psychological contract. The author has not found psychological contract research from an Islamic perspective yet. Although there have been many studies on authentic leadership, the author adds an Islamic psychological contract variable that until now the author has not obtained the literature. The term Islamic psychological contract in this article is to show that this variable has actually been integrated in the life of a Muslim. In short, this study is proposed to provide a more comprehensive view of leadership effectiveness by developing an integrative model that integrates leadership with employee reactions, namely by making Islamic psychological contracts as a mediator for the creation of employee organizational commitment. This will be a novelty in leadership and organizational research. It is hoped that this study can contribute to the existing literature by offering new insights into the impact of authentic leadership on employee organizational commitment mediated by Islamic psychological contracts.

Research of leadership is getting more attention in today's context since organizations are constantly changing rapidly, to survive in a competitive business environment and disruptive technology developments. Employees are becoming increasingly important assets for organizations because of their ability to generate creative and innovative ideas or solutions and work collaboratively with teammates that cannot be imitated by machines (Apoi and Latip 2019). Therefore, paying extra attention to the reactions of employees now can put the organization in a better business position especially in the area of competitiveness in the future. Decision makers and

practitioners are encouraged to show more authentic leadership behaviors in their organizations because it leaves a big impact in growing organizational commitment.

## 5 Limitations and Future Research

1. This is a conceptual paper; the next agenda is doing the research based on propositions that are concluded.
2. This study focusses on psychological contract merely in Islamic perspective, which is playing role as mediating variable on authentic leadership and organizational commitment. We encourage additional research to investigate psychological contract from other beliefs or religions.
3. The Islamic psychological contract is a new term in psychological contract issue. It is needed to accomplish the definition broadly by further study.

## References

- Abdo Alaghbari, L.M., Abdullah Othman, A.H., Mohd. Noor, A.B.: Challenges and difficulties facing Islamic financial inclusion in women's economic empowerment in Yemen: qualitative approach. *Int. J. Bus. Ethics Gov.* **4**(3), 91–114 (2021). <https://doi.org/10.51325/ijbeg.v4i3.80>
- Ahmad, I., Gao, Y., Moiz, S., Assistant, H.: A review of ethical leadership and other ethics-related leadership theories. *Eur. Sci. J.* **13**(29), 10–23 (2017)
- Alavi, S., Gill, C.: Leading change authentically: how authentic leaders influence follower response to complex change. *J. Leadersh. Organ. Stud.* **24**, 1–15 (2016)
- Ali, S., Mehta, A., Sair, S., Bilal, R., Kaleem, M.: A stitch in time saves nine; understanding developmental HRM practice and affective commitment through psychological contracts. *J. Manag. Inf. Decision Sci.* **23**(4), 229–243 (2020)
- Allen, N., Meyer, J.: The measurement and antecedents of affective, continuance and normative commitment to the organization. *J. Occup. Psychol.* **63**, 1–18 (1990)
- Allen, N.J., Meyer, J.P.: *Commitment in the Workplace: Theory, Research, and Application*. SAGE Publications Inc., California (1997)
- Alnajjar, A., Abdullah Othman, A.H.: The impact of capital adequacy ratio (CAR) on Islamic banks' performance in selected MENA countries. *Int. J. Bus. Ethics Gov.* **4**(2), 116–133 (2021). <https://doi.org/10.51325/ijbeg.v4i2.70>
- Apoi, A., Latip, H.: The Impact of transformational leadership on employee reactions towards individual work performance: a conceptual paper. *Int. J. Acad. Res. Bus. Soc. Sci.* **9**(8), 47–60 (2019)
- Arda, O., Aslan, T., Alpkın, L.: Review of practical implications in authentic leadership studies. *Proc.-Soc. Behav. Sci.* **229**, 246–252 (2016)
- Argyris, C.: *Understanding Organizational Behavior*. APA Psyc.Net, Dorsey (1960)
- Arici, H., Arasli, H., Cakmakoglu, A.: The effect of nepotism on tolerance to workplace incivility: mediating role of psychological contract violation and moderating role of authentic leadership. *Leadersh. Organ. Dev. J.* **41**(4), 597–613 (2020)
- Armstrong, M.: *A Handbook of Personnel Management Practice*, 4th edn. Asia Pacific Journal of Human Resources. Wiley Online Library (1991)

- Avolio, B., Gardner, W., Walumbwa, F., Luthans, F., May, D.: Unlocking the mask: a look at the process by which authentic leaders impact follower attitudes and behaviors. *Leadersh. Q.* **15**(6), 801–823 (2004)
- Balli, H., Yanik, A.: The evaluation of organizational commitment in health employees. *IIB Int. Refereed Acad. Soc. Sci. J.* **16**(5), M00-12 (2014)
- Batra, S.: Framework of socialization, authentic leadership and affective commitment for construction professionals. *Constr. Econ. Build.* **20**(1), 77–95 (2020)
- Beekun, R., Badawi, J.: *Leadership: An Islamic Perspective*, 3rd edn. Amana Publications, Maryland (2009)
- Bilal Khan, M., Ahmad Ghafoorzai, S., Patel, I., Mohammed Shehbaz, D.: Waqf based Islamic Fintech model for agriculture sector of Indonesia. *Int. J. Bus. Ethics Gov.* **4**(1), 73–85 (2021). <https://doi.org/10.51325/ijbeg.v4i1.61>
- Blau, P.: *Exchange and Power in Social Life*. Wiley, New York (1964)
- Cerne, M., Dimovski, V., Maric, M., Penger, S., Skerlavaj, M.: Congruence of leader self-perceptions and follower perceptions of authentic leadership: understanding what authentic leadership is and how it enhances employees' job satisfaction. *Austr. J. Manage.* (2013)
- Chang, B.: Authentic leadership and career satisfaction: the meditating role of thriving and conditional effect of psychological contract fulfillment. *Int. J. Contemp. Hosp. Manage.* **32**(6), 2117–2136 (2020)
- Conway, M.: Memory and the self. *J. Mem. Lang.* **53**(4), 594–628 (2005)
- Covelli, B., Mason, I.: Linking theory to practice: authentic leadership. *Acad. Strateg. Manag. J.* **16**(3) (2017)
- Cropanzano, R., Mitchell, M.: Social exchange theory: an interdisciplinary review. *J. Manage.* **31**(6), 874–900 (2005)
- Datta, B.: Assessing the effectiveness of authentic leadership. *Int. J. Leadersh. Stud.* **9**(1), 62–75 (2015)
- Dimovski, V., Ferjan, M., Maric, M., Uhan, M., Javanovic, M., Janezic, M.: Authentic leadership to the future. *Skola Biznisa* **1**, 1–14 (2012)
- Dundon, T.: *The Psychological contract: a critical review* (2017)
- Erkutlu, H., Chafra, J.: Effects of trust and psychological contract violation on authentic leadership and organizational deviance. *Manage. Res. Rev.* **36**(9), 828–848 (2013)
- Gardner, W., Cogliser, C., Davis, K., Dickens, M.: Authentic leadership: a review of the literature and research agenda. *Leadersh. Q.* **22**(806), 1120–1145 (2011)
- Gouldner, A.: The norm of reciprocity: a preliminary statement. *Am. Sociol. Rev.* **25**(2), 161–178 (1960)
- Greenberg, J.: *Behavior in Organizations*, 10th edn. Pearson Education, Essex (2011)
- Griep, Y., Bankins, S., Vander, E., De Witte, H.: How psychological contract breach affects long-term mental and physical health: the longitudinal role of effort–reward imbalance. *Appl. Psychol. Health Well-Being* **13**(2), 263–281 (2021)
- Herrera J., Heras-Rosas, D.: The organizational commitment in the company and its relationship with the psychological contract. *Front. Psychol.* **11**, 609211(2021)
- Khan, S.: Impact of authentic leaders on organization performance. *Int. J. Bus. Manage.* **5**(12), 167–172 (2010)
- Kutaula, S., Gillani, A., Budhwar, P.: An analysis of employment relationships in Asia using psychological contract theory: a review and research agenda. *Hum. Res. Manage. Rev.* **30**, 100707 (2019)
- Leroy, H., Palanski, M., Simons, T.: Authentic leadership and behavioral integrity as drivers of follower commitment and performance. *J. Bus. Ethics* **107**(3), 255–264 (2011)
- Luthans, F.: *Organizational Behavior: An Evidence-Based Approach*, 12th edn. McGraw-Hill/Irwin, New York (2011)
- Lux, A., Grover, S., Teo, S.: Reframing commitment in authentic leadership: untangling relationship–outcome processes. *J. Manage. Organ.*, 1–19 (2019)
- Macneil, I.: Relational contract: what we do and do not know. *Wisconsin Law Rev.*, 483–525 (1985)

- Marinakou, E., Nikolic, B.: Dimensions of authentic leadership in the Middle Eastern context: are these leaders really authentic? In: 2nd Asia Pacific Conference on Advanced Research, Melbourne, Australia, pp 134–143 (2016)
- Moneim, A.: Towards Islamic maqasidi education philosophy for sustainable development: quranic perspective with special attention to Indonesia. *Millah Jurnal Studi Agama* **17**(2), 221–266 (2018)
- Muceldili, B., Turan, H., Erdill, O.: The influence of authentic leadership on creativity and innovativeness. *Proc. Soc. Behav. Sci.* **99**, 673–681 (2013)
- O’Reilly, C.: Corporations, culture, and commitment: motivation and social control in organizations. *Calif. Manage. Rev.* **31**(4), 9–25 (1989)
- O’Reilly, C., Chatman, J.: Organizational commitment and psychological attachment: the effects of compliance, identification, and internalization on prosocial behavior. *J. Appl. Psychol.* **71**(3), 492–499 (1986)
- Peus, C., Wesche, J., Streicher, B., Braun, S., Frey, D.: Authentic leadership: an empirical test of its antecedents, consequences, and mediating mechanisms **107**(3), 331–348 (2012)
- Phuong, T., Takahashi, K.: The impact of authentic leadership on employee creativity in Vietnam: a mediating effect of psychological contract and moderating effects of subcultures. *Asia Pac. Bus. Rev.* **27**, 1–24 (2020)
- Qutub, S.: Sumber-Sumber Ilmu Pengetahuan dalam Al Quran dan Hadits (Sources of Knowledges in The Al Quran and Al Hadith). *Humaniora* **2**(2), 1339–1350 (2011)
- Robinson, S., O’Dea, V.: Authentic leadership – to thine own self be true. *Insights*, 1–4 (2014)
- Rousseau, D.: Psychological and implied contracts in organizations. *Empl. Rights Responsib. J.* **2**, 121–139 (1989)
- Rousseau, D.: New hire perceptions of their own and their employer’s obligations: a study of psychological contracts. *J. Organ. Behav.* **11**, 389–400 (1990)
- Rousseau, D.: *Psychological Contracts in Organizations: Understanding Written and Unwritten Agreements*. SAGE Publications, Inc., Newbury Park (1995)
- Rousseau, D.: Psychological contract inventory technical report. Version 3. Research Gate, Pennsylvania (2000)
- Rousseau, D., Tomprou, M., Montes, S.: Psychological contract theory. In: Kessler, E.H. (ed.) *Encyclopedia of Management Theory*, pp. 635–640. Sage, Thousand Oaks (2013)
- Savarimuthu, A., Racha, J.: Psychological contract-a conceptual framework (2017)
- Seco, V.: [https://www.academia.edu/3339259/The\\_impeccable\\_authentic\\_leadership](https://www.academia.edu/3339259/The_impeccable_authentic_leadership) (2013)
- Shamir, B., Eilam, G.: “What’s your story?”: a life-stories approach to authentic leadership development. *Leadersh. Q.* **16**, 395–417 (2005)
- Shapiro, J., Costa, P., Doden, W., Chang, C.: Psychological contracts: past, present, and future. *Ann. Rev. Organ. Psychol. Organ. Behav.* **6**(1), 1–25 (2018)
- Solberg, E., Lapointe, É., Dysvik, A.: You care about me, but can I count on you? Applying a psychological contract perspective to investigate what makes employees willing to be internally employable. *Int. J. Hum. Resour. Manag.* **31**, 1–23 (2020)
- Suhartini, T.: Implementasi kepemimpinan otentik dan person-organisation fit serta hubungannya dengan kontrak psikologis dan komitmen organisasional Islami (The implementation of authentic leadership and person-organization fit and the relationship between Islamic psychological contract and commitment organizational). *Jurnal Ekonomi Syariah Indonesia* **10**(2), 132–149 (2020)
- Sungu, L., Weng, Q., Kitule, J.: When organizational support yields both performance and satisfaction. The role of performance ability in the lens of social exchange theory. *Pers. Rev.* **48**(6), 1410–1428 (2019)
- Tabak, A.: A research on the consequences of authentic leadership. *Biogazici J.* **27**(2), 63–82 (2013)
- Yukl, G.: *Leadership in Organizations*, 8th edn. Pearson, New Jersey (2013)



# Promoting Women's Economic Empowerment Through Islamic Financial Inclusion in Lower Income Economies: Empirical Evidence from Yemen



Lina Mohammed Abdo Alaghbari, Anwar Hasan Abdullah Othman, and Azman Bin Mohd. Noor

**Abstract** This research aims to examine the true impact of Islamic financial inclusion (IFI) through (access, use, quality) of Islamic financial services on women's economic empowerment (WEE) in Yemen. With the help of primary data collected from 421 respondents through non-probability sampling, the study adopted Structural Equation Modelling (SEM) to analyse the relationship between Islamic financial inclusion and the economic empowerment of women. The study findings indicate that the proposed model in its final draft fits the data very well with satisfactory goodness of fit indices. Furthermore, the findings reveal a significant impact of Islamic financial inclusion, specifically the access and quality of Islamic financial services, on women's economic empowerment in Yemen. However, there is no positive effect of the use of Islamic financial services on women's economic empowerment in Yemen. The study highlights an earnest need for serious efforts to facilitate and ease the use of Islamic financial services among women who promote their economic empowerment. The study argues that as long as accessing Islamic financial services is influential on WEE, then using such services is supposed to contribute towards improving WEE. These results will assist policymakers, organizations concerned with women's affairs in designing and implementing effective development strategies, plans, and policies for women's empowerment and Islamic financial inclusion.

**Keywords** Women · Economic empowerment · Islamic Financial Inclusion · Yemen

---

L. M. A. Alaghbari (✉) · A. H. A. Othman · A. B. Mohd. Noor  
IIUM Institute of Islamic Banking & Finance (IIiBF), Kuala Lumpur, Malaysia  
e-mail: [lina.alaghbari@live.iium.edu.my](mailto:lina.alaghbari@live.iium.edu.my)

A. H. A. Othman  
e-mail: [anwarhasan@iium.edu.my](mailto:anwarhasan@iium.edu.my)

A. B. Mohd. Noor  
e-mail: [azmann@iium.edu.my](mailto:azmann@iium.edu.my)



## 1 Introduction

Women's Economic Empowerment (WEE) reflects the extent of advancements and development in a society (Alshebami and Khandare 2015), as such advancement cannot be fully reached when women are excluded from participating in the development achievement process (Al-Kharouf 2013). The UN Secretary-General's High-Level Panel on Women's Economic Empowerment announced seven determinants that break the chain of excluding women's participation in the development, despite the institutional and cultural differences among countries (UNHLP 2016). Also, women participation in economic activity is part of sustainable development goals (SDGs) (Arab Monetary Fund 2018; Hamdan et al. 2021a, b).

Financial inclusion (FI) is one of the basic requirements for women to undertake activities and participate in economic development (Ramadan 2019). Its importance comes from its role in the economic development in developed and developing countries (Demirguc-Kunt et al. 2018), as it also has been defined by Alliance of Financial Inclusion (AFI) and G20 as the improvement of access financial products and services for all the segments of a society to match their needs (Arab Monetary Fund 2015), which is considered as a necessity to achieve inclusive development (Isaac 2014; George and Thomachan 2018; Lal 2018).

Since the programs of financial inclusion are associated with social change in the life of people with poverty, financial inclusion programs affect the life of women in such environments, this effect is reflected on their awareness level, access to financial tool and their usage to improve the life standards of their families and then their societies, and this along with having the chances of reaching economic opportunities also results in their economic empowerment (Swamy 2014; Singh and Shah 2016). Studies conclude that financial inclusion contributes to the increase of income among women, especially in lower income societies (Siddik 2017). However, such programs are sometimes misused which does not lead to achieving the desired goals expected from financial inclusion in such communities (Khaki and Sangmi 2017), and when this takes place women are more affected than men which implies the importance of the role that financial inclusion can play in promoting the life standards of women in least developed economies (Patil 2020).

Inclusive financial access may lead to increasing the possibility of asset possession, building wealth, and being a motivation to increase economic empowerment among women (Bayero 2015).

Organizing the financial system and reducing the cost of financial services and promoting the competition among financial institutions are supposed to improve the role of financial inclusion in the economic development in developing economies (Baza and Rao 2017), and for this purpose, microfinance institutions play an important role in offering such services to individuals (Subramanian 2014).

Women become more able to make decision and experience autonomy when it comes to the financial aspect and this is achieved by adopting financial inclusion in a society (George and Thomachan 2018), and since Islamic financing leads to achieving added values along with financial inclusion by many tools such as

Musharka Contracts, Risk Sharing which are considered as an alternative for the traditional loans, plus the extra tools in the Islamic financial system such as redistributing wealth like Zakat, Sadaqa (Charity), Waqf (Endowment), Qard Hasan, which goes with sharing risks of other tools and makes huge impacts in the development process in lower income communities (Middle East 2014), therefore Islamic Financial Inclusion (IFI) is supposed to create more empowerment for women and redress the gaps not fulfilled by traditional financial inclusion (TFI) especially in Islamic societies where individuals refrain from dealing with traditional financial systems and their services, as previous research by the International Monetary Fund (IMF) has shown that religious concerns have a role to play in keeping people out of the financial system (I-FIKR 2018).

Regardless of the importance of financial inclusion (IF) in the global perspective, studies in this regard are still growing (Raza et al. 2019).

The available literature has investigated women empowerment in many perspectives such as explaining empowerment as women participation in the job market and generating income, or explaining empowerment as the achievement of financial inclusion where women can access and use financial services and be able to encounter crises and difficulties.

This study aims at investigating the impact of financial inclusion (IF) on women's economic empowerment in Yemen as an underdeveloped economy. This study differs from the previous work by employing the seven determinants announced by UNHLP (2016) to measure the economic empowerment among women in an underdeveloped economy such as Yemen. Furthermore, the study differs by investigating financial inclusion from the Islamic perspective, which also involves summarizing a definition of Islamic Financial Inclusion (IFI) based on reviewing the available literature. Even though studies have investigated Islamic Financial Inclusion (IFI) by measuring the role of banks and microfinance as financial institutions, this study involves other financial institutions such as insurance providers as well.

## **2 Literature Review and Hypothesis Development**

### ***2.1 Empowerment Theory***

The theory of empowerment acts as a mechanism of empowering people, organizations, and societies so that they can control their own affairs, as noted by Julian Rappapor, who is a pioneer in the conceptualization, research, and scientific application of empowerment and related ideas (Riger 1993; Perkins and Zimmerman 1995). Further, Caroline Moser recognizes the importance of the concept of empowerment in increasing women's power, self-reliance and internal strength through their ability to determine and influence their choices and decisions in life by controlling material resources, and it also means striving to empower women through the redistribution of power within societies (Ibrahim and Alkire 2007).

Empowerment and participation of women is a necessary step to be taken to overcome obstacles associated with poverty and development in lower income countries (Attia 2017), and leads to the effective integration of women in all social, political and economic fields, and to the consolidation of their right to open financial accounts and obtain credit without any difficulties and obstacles, either by the family or society.

Empowering women economically is a strategic goal to ensure sustainable development (Al-Aqeel 2019), but it is noteworthy that empowerment has deeper roots that extend beyond it, as empowerment is carried out across two levels; physical empowerment, and moral empowerment. Such empowerment provides the basic foundations for a decent life among society (Zumaruda 2010).

## ***2.2 Women's Economic Empowerment***

Women in some developing societies are able to establish their own enterprises regardless of the challenges and obstacles imposed by the society itself towards the nature of life that women are supposed to experience, and, more particularly, regardless of the managerial, marketing and legal obstacles to achieve economic welfare in the society (Salami and Baba 2013).

A major obstacle that hampers the chances for economic empowerment of women around the globe is that they suffer gender discrimination, which becomes more intense in more populated societies (Hyland et al. 2020), as Bagouri (2019) reported that even though women are able to participate economically, yet they are unable to reach the desired level of productivity and empowerment due to gender discrimination. When trying to access external credit, women experience the difficulty of obtaining the required sources of funds and this increases their reliance on family members on securing such resources which can be reduced when women are able to possess fixed assets such as lands and buildings, even though this does not solve the obstacle of obtaining funds for women (Balasubramanian et al. 2019). The growth in incomes in Western Europe and North America takes place due to the free competition in possessing assets and trading them (Bassiouni 1988). This implies the importance of possessing assets by women who facilitate their access to key services such as loans, and this results in experiencing autonomy and, hence, being economically empowered (Jatfors 2017).

## ***2.3 Islamic Financial Inclusion***

Islamic Sharia comes to achieve the goals of social justice by setting divine standards for a balanced economy (Al-Omar 2003), without concentrating capital among individuals which creates inequality (Al-Nabhan 1984). Islam considers that work, capital, moral values, and natural resources are the basis of economic integration

(Al-Omar 2003). In the Islamic economic rules, Riba is denied even if it is associated with high quality services to fight injustice in the Islamic society as it is based on adding more financial burden to borrowing funds (Al-Saati 2012), therefore avoiding Riba is a necessity for an Islamic society (Al-Omar 2003).

The idea of financial inclusion and empowerment is the application of Islamic guidelines in the economy to empower individuals, particularly marginalized groups (Al-Hamad 2010). Therefore, Financial inclusion is considered one of the subjects that is widely researched in the literature. Many definitions have been proposed for financial inclusion as well. At the beginning of the period in which financial inclusion was coined, it was defined as the process of offering financial services to individuals in low-income communities with a reasonable cost. However, it has evolved to include four main dimensions which are ease of access to funds, healthy institutions applying laws and regulations, financial and organizational sustainability for financial institutions, and competition among financial services providers (Iqbal and Mirakhor 2012).

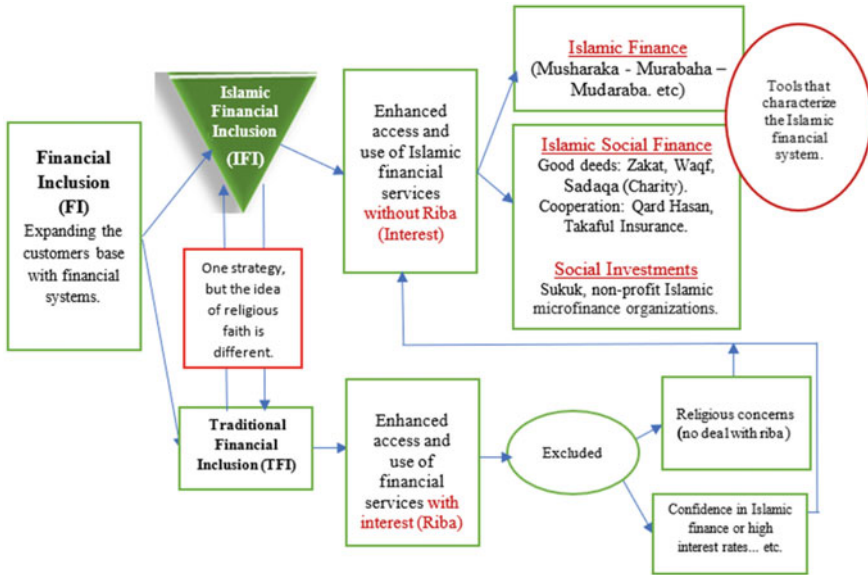
The World Bank defined Financial Inclusion (FI) as the possibility of individuals and organizations to access beneficial financial products and services that serve their needs with a reasonable cost and offered to them in a sustainable and responsible manner (World Bank 2018).

But Alaghbari and Othman (2021) defined the Islamic Financial Inclusion (IFI) as a sustainable encouraging and practise for all the segments of a society, for promoting the access to and use of Islamic financial products and services with an appropriate cost and quality and without Riba, seeking to include the excluded categories of the traditional financial system for religious reasons and other reasons, and improving the access to Islamic social financing services such as Zakat, Microfinance, Sukuk, Waqf and others to contribute towards economic development in a society.

Improving the access to financial services without Riba is the main difference between traditional and Islamic financial inclusion (Fig. 1). The Islamic system and the Usury (Riba) system are opposites that do not meet in a conception, do not agree on a basis or result, as well as each of them is based on a conception of life, goals and objectives that completely contradicts the other (Qutb 1995).

Islamic finance has been witnessed to be one of the effective tools in the aspect of the success of developmental programs that aim for alleviating poverty, this increases the usage of financial services and products which strengthen the financial system to encounter crisis (Mahmoud 2017), as the low usage of financial services i.e. possessing a bank account is relevant to the low level of awareness of their importance and less tendency to opt for Islamic financial tools, hence, wherever accessing Islamic financial service is promoted, the success of poverty alleviation programs are witnessed successful (Beck et al. 2007) as they target lower income communities by providing microfinance that is compatible with the Islamic religious guidelines which enable individuals to access fund with less risky tools in Islamic communities (Alraayi 2014).

Research indicates that employing Islamic financial tools will lead to some migration from traditional into Islamic financial tools among individuals (Jouti 2018). Research also emphasizes on taking the religious aspect into consideration when



**Fig. 1** Islamic financial inclusion and its traditional counterpart. *Source* Alaghbari and Othman (2021)

designing such developmental programs and financial products and services (Sayed and Shusha 2019), as individuals are observed to tend for Islamic financial financing in five countries in the MENA Region (Algeria, Egypt, Morocco, Tunisia and Yemen) (Demirguc-Kunt et al. 2013).

Talking of considering the religious aspect when designing financial tools and products becomes more important after observing that one of the reasons for not opting or using financial products and services is that these products are not compatible with their religion’s guidelines. Naceur et al. (2015) reported in their study that the portion of individuals that refrain from using financial services due to religious reasons is huge in the countries of the Organization of Islamic Cooperation (OIC). This leads to concluding that taking the religious perspective into consideration could increase the access and usage of financial products and services among individuals in the Islamic communities, which in turn leads to achieving financial inclusion in such societies.

The low access and usage of financial services in the Arabic societies can be attributed to the mismatching between the financial products with the needs of individuals, low levels of awareness, lack of specific laws and Acts that organize Islamic finance, and above all the existence of a double finance system which is divided into traditional and Islamic part (Gharbi 2019), further, it is whether lacking the financial products and services or lacking the awareness to sufficiently use such products and services (Ali 2019). This requires promoting the policies that aim to achieve financial inclusion in such societies through developing the Islamic financial industry

(Zulkhibri 2016), as Islamic programs if designed and supervised may exceed traditional financial tools in alleviating poverty and achieving economic development (Hassan 2015).

Research indicates that some experiments have proven that Islamic financial tools contribute towards the growth in women's income, enhancing their financial autonomy, improving their economic and social activities such as spending on their family raising their kids etc. (Hassan and Saleem 2017; Ulfi 2018), this brings the fact that Islamic microfinance institution impact the whole family and not only women themselves (Ahmed 2002).

The Financial Inclusion Data (FID) Working Group presented an initiative in respect to identifying and measuring financial inclusion. This initiative included the possibility of access to financial services and the usage of financial services as two main dimensions to measure financial inclusion. The purpose of such initiative is to present financial inclusion as a tool for achieving development, poverty reduction and realizing sustainable development goals (SDGs). Furthermore, The Global Partnership Financial Inclusion (GPIFI), in the 2012 G20 Los Cabos Summit, recommended three main dimensions for measuring financial inclusion. These dimensions are ease of access to financial services, the usage of financial services by all individuals, and improving the quality of financial services (AFI 2013). The study adopts the dimensions recommended by the Global Partnership Financial Inclusion (GPIFI) to measure Financial Inclusion and identify its impact on the economic empowerment among women in Yemen from an Islamic perspective.

The three dimensions of financial inclusion have an impact on women's economic empowerment and therefore economic development in an economy, as accessing financial resources would make a remarkable difference in the life of communities who live in poverty (Ardic et al. 2011).

### **Access to Islamic Financial Services**

Accessing financial services plays a role in the usage of such services (Sayed and Shusha 2019). Technology has developed to ease the access as well as the usage of financial resources in the financial and banking sectors which also promoted the development of offering these financial services (Camara and Tuesta 2014; United Nations 2014).

Access points in respect to financial resources are considered as a leading way to reach extra financial services that lead to creating economic opportunities for women entrepreneurs (Fareed et al. 2017), as the increase in such services is associated with the increase in economic development (Hamdan and Abu Dayyeh 2018). Further, the increase in access to finance parameters such as number of branches of banks for every hundred thousand individuals, and number of banks accounts for every thousand individuals is also associated with the level of economic development in an economy (Raza et al. 2019).

As technology tools promote not only the process of accessing financial services but also consolidating and mobilizing savings for the purpose of encouraging low-income communities to easily secure financial resources (Ouma et al. 2017).

They also help in reducing the cost to access financial services as well especially for individuals in low-income societies, an example of such tools would be the success of M-PESA in Kenya (Evans 2018).

AFI (2013) described accessing financial services as the ability to use products and services offered by official financial institutions, such access is physically identified through the ability to use banks, ATMs, and other relevant products or services. Such access is also described as traditional access, as the advancements in technology and artificial intelligence contributed towards shifting the way of offering financial services to a new level to include Fintech products and services, which promoted the business sector and transactions carried to achieve determined goals and objectives (Camara and Tuesta 2014).

Accessing financial services plays an important role in lower-income communities and rural areas as it eases the chances of generating income in a difficult environment which contributes towards alleviating poverty in backward areas (United Nations 2014; Luoga 2018).

Facilities that promote access to financial services include branches, sale points, ATMs, banking agents, and microfinance banks. These facilities contribute to developing businesses through acquiring the needed funds and credit (Fareed et al. 2017), which leads to achieving women empowerment in the economic perspective (Mayoux 2005).

Granting an opportunity to acquire funds from microfinance institutions is one way of accessing financial services and is also a form of financial inclusion even when taking the Islamic perspective into consideration, that is, providing Islamic financial services to women (Ali 2019).

Residents in rural areas as well as women face more challenges due to the distance and the cost of accessing financial service, and this hampers the chances of establishing financial inclusion in an economy (Baza and Rao 2017). This requires serious efforts from policy makers to ensure that access to financial services is a possibility for individuals more particularly in lower income communities, which can play a role towards economic development (Kriese et al. 2019; Ruhara et al. 2018) by coordinating with financial institution (AFI 2013), but Hassan (2015) confirmed the failure of traditional financial institutions, especially microfinance, to attract Muslims. That is why there are some opportunities that can improve the economic condition of Muslim communities through the design and delivery of Islamic finance products and services. Hence, access to Islamic financial services has been used as a factor in this study to predict the impact on women's economic empowerment. Also, the study targeted women to collect data in respect to measuring access to Islamic financial services, hence the following hypothesis is generated:

***H1: Access to Islamic financial services has a positive impact on women's economic empowerment.***

### **The Usage of Islamic Financial Services**

The usage of financial services is defined as the extent within which financial services are utilized by individuals, and this is reflected on the frequent utilization of financial services which involves carrying out a transaction with a financial institution which



could be a bank or a microfinance institution or other (Camara and Tuesta 2017; AFI 2013).

When considering the usage of financial services, there is a huge role of the government and policy makers in ensuring the ease and safety to use financial resources among individuals, which leads to their empowerment. Eton et al. (2018) investigated the same and reported that women lose their savings due to the lack or low levels of supervision by the government and other relevant institutions and recommending that the government is supposed to cover the cost of using financial services by women in rural areas which contributes towards better participation in achieving inclusive development.

The usage of financial services by women is crucially important for their economic empowerment. This starts with joining a financial institution by opening accounts at these financial institutions. This importance is intense when observing that the usage of financial services by women is way less than men. Further, the usage is positively associated with the level of education and the income level of the individuals/families (Wale and Makina 2017). This creates an earnest need for paying more heed towards easing the access and usage of financial services among women, especially in lower-income communities.

Obtaining small loans has been proven to be economically and socially effective among women in the aspect of their empowerment and promoting gender equality, ability to make decisions and improve their life standards (Al-Shami et al. 2016). Furthermore, these small loans are found influential in respect to promoting financial inclusion through encouraging them to mobilize savings, generate income and family assets and hence alleviating poverty (Islam 2014; Awojobi 2014). This implies the role of using financial services in realizing developmental goals among individuals in lower-income communities and then achieving inclusive development in the society.

Women in general as well as the youth in rural areas of the least developed economies are the least able to use financial services (Izquierdo and Tuesta 2015). Naceur et al. (2015) opined that using Islamic financial services is an effective tool for financial inclusion. Further, the author emphasized the importance of savings and their investments in promoting women economic empowerment. Furthermore, insurance services contribute towards financial inclusion by giving women a chance to reduce the possible risk they may encounter in their lives (Ali 2019).

Based on such a review, the following hypothesis is developed:

***H2: The use of Islamic financial services has a positive impact on women's economic empowerment.***

### **Quality of Islamic Financial Services**

Accessing and using high quality financial services and products is a key determinant for economic inclusive growth and poverty alleviation. This is more important when taking women in least developed economies into consideration due to the limited chances for women in such economies to thrive and undertake particular activities in the business environment in particular (Holloway et al. 2017).



Governments play a key role in promoting high quality financial services to be accessed and used by individuals, in low-income communities, by setting the appropriate framework and conditions that facilitate organizing and offering financial services to individuals. This can be done by the process of educating individuals especially in backward areas and the unorganized sectors through adopting technology and innovative methods that reduce preventing individuals from accessing and using financial services (United Nations 2014). This helps in spreading the usage of financial services in an economy resulting in better economic growth which is essential for lower-income communities (Kriese et al. 2019).

The quality of financial service is challenging when it comes to being measured (AFI 2013). Therefore, it has been defined and measured differently, where it was defined as performance expected by customers, or the provision of products and services to meet the needs and expectations of customers (Darwish 2016). A few dimensions have been used to measure the quality of financial services in this study from the point of view of individuals. They include affordability of transaction, transparency of information regarding the services, convenience, and fair treatment at financial institutions, and customer protection by allowing them to complain of any dissatisfaction (AFI 2016). Innovative service can be presented for the ease of accessing financial services among individuals in lower-income communities (Hamdan and Abu Dayyeh 2018), which could contribute towards promoting financial inclusion (Kriese et al. 2019).

Research indicates that satisfaction is positively and significantly associated with the quality of banking services offered to individuals. Therefore, providers tend to facilitate and ease such access by providing and justifying the quality of the services provided to individuals by giving many options and choices which increase awareness as well promote financial inclusion (Ragab and Misri 2019; Al-TaHER and Benabdallah 2019). Research also indicates that the quality of Islamic financial services has an impact on the satisfaction of individuals, which also indicates that the more satisfaction realized by individuals, the more chances of achieving financial inclusion in a community (Alfuqaha 2012).

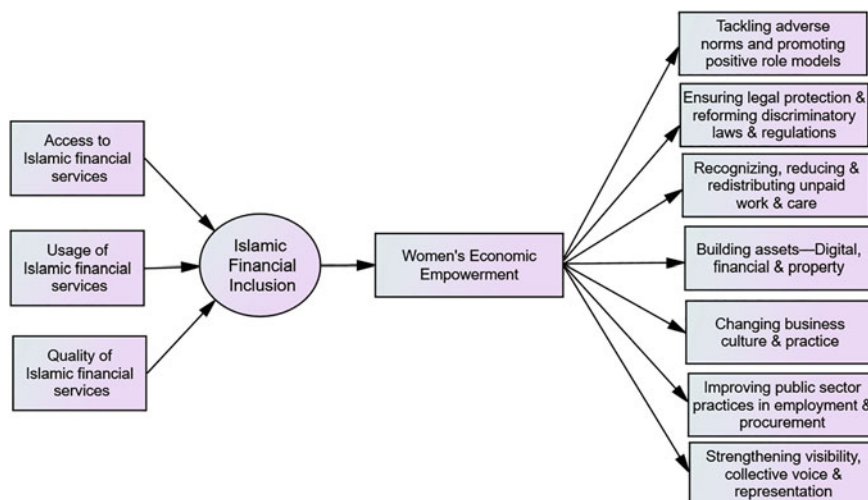
Based on this background, the following hypothesis is developed:

**H3: The quality of Islamic financial services has an impact on women's economic empowerment.**

From this discussion, the following Fig. 2 illustrates the theoretical model which presents the different hypotheses proposed to be investigated in this study based on reviewing the available research to build the model and test its hypotheses in order to present a framework relevant to Women's Economic Empowerment by employing Financial Inclusion variables from an Islamic perspective.

## 2.4 Financial Inclusion in the Yemeni Context

The literature is scant when considering financial inclusion in Yemen. One of the major sources that increase the chances for financial inclusion in Yemen is financial



**Fig. 2** Theoretical framework for research

remittances by Yemeni expatriates abroad, as it increases savings, investments, and therefore, more access and usage for financial products and services (Humaid and Khan 2018).

However, microfinance and its role in achieving economic development in Yemen has been investigated (Al-Shami et al. 2014), even though the role of microfinance is not sufficiently contributing towards economic empowerment due to challenges such as higher interest rate, traditions and customs, financial illiteracy and religious misconceptions (Alshebami and Khandare 2015).

The attention towards empowering women economically in Yemen is higher from international development partners of Yemen, and the rural and backward areas are the most targeted by them (Albana'i 2015).

Financial inclusion is hampered by the obstacles faced by the activities of microfinance in Yemen such as mismanagement, lack of skilled employees, lack of practical skills, and financial illiteracy (Alshebami and Khandare 2014). Other challenges that or event microfinance institution from expanding and contributing towards financial inclusion may include lacking official funds, lacking appropriate infrastructure in rural areas, lack of variety in financial services, political instability in the country and refraining from granting loans to lower-income communities (Alshebami and Rengarajan 2017). However, when discussing the obstacles faced by women in respect to economic empowerment, they include negative traditions and customs, especially in the north and middle regions in Yemen, lacking managerial and marketing skills, lacking training and support, lacking experience and knowledge, and higher interest rates as well as collateral to access funds (Qaied and Basavaraj 2019). Above such challenges, women in Yemen face social challenges that hamper their chances for economic empowerment such as violence and working in secondary jobs, less autonomy in family, work and decision making (Valette 2019).

### 3 Methodology

#### 3.1 Participants

Since the study investigates the influence of Islamic Financial Inclusion on Women’s Economic Empowerment in Yemen, then women in Yemen who are 15 years old and above are considered the participants for this study. Furthermore, due to the difficulty in accessing different geographic areas in Yemen because of the active unstable political situation, coupled with the lack of characteristics of the population, a non-probability sampling technique is employed to collect the data (Onwuegbuzie and Collins 2007). The population of females in Yemen is approximated by ILO (2015) to be 6,570,000. Then applying the formula proposed by Krejcie and Morgan (1970) with an error margin of 0.05 and confidence level of 95%, the suitable sample is 384. However, the process of data collection yielded a number of 426 cases to be included in the study. However, after the data screening process, 421 are found completed to be taken for further analysis and were obtained from all governorates of Yemen, urban and rural, except for the governorate of Socotra Archipelago. The majority of the responses were received from the Sana’a governorate with 90 responses at 21%, and the opposite was from the Al Mahwit governorate with 4 responses at 1%. The response was greater than the city’s residents at 82%, followed by the suburbs and the countryside by 10% and 8%, respectively, Fig. 3.

As observed in the Table 1, the most responsive age groups were (20–29) followed by (30–39) with 44% and 41%, respectively. The social situation was 52% more than the sample of married women, followed by single women 40%, respectively. The

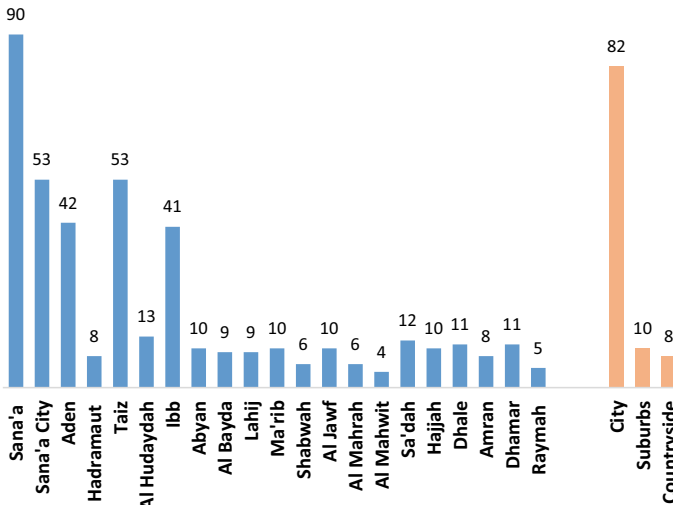


Fig. 3 Responses by governorates and housing status

**Table 1** Demographics of the study sample

Demographic variables	Categories	Frequency	(%)
Age	15–19	16	4
	20–29	184	44
	30–39	174	41
	40–49	44	10
	50–54	3	1
Social status	Single	170	40
	Married	220	52
	Divorced	21	5
	Widow	10	2
Qualification	Read & write	21	5
	Preliminary	5	1
	High school	61	14
	Diploma	74	18
	Bachelor	222	53
	Postgraduate	38	9
Functional status	An employee. Public sector	60	14
	An employee. Private sector	135	32
	Private entrepreneur	25	6
	Unemployed	27	6
	Student	64	15
	Not allowed to work	12	3
	Housewife	72	17
	Retired	1	0.2
Source of income	I don't work	25	6
	Salary from job	188	45
	Pay for work or services	20	5
	Return on investments or real estate	5	1
	External transfers from relatives	24	6
	Pension	2	0.5
	Social assistance	19	5
Owning a project	Other	163	39
		82	20%
Islamic financial inclusion	Have a bank account	167	40%

(continued)

**Table 1** (continued)

Demographic variables	Categories	Frequency	(%)	
	Have a Qard Hasan	40	10%	Sample size = 421
	Have financing	29	7%	
	Have insurance	24	6%	

majority of the participants are university-level and 62% higher. When it comes to employment status, the majority of respondents (32%) are employees in the private sector. When asked to identify their source of income, the majority of respondents (45%) have their income from their working job. Finally, it is noted that Islamic financial inclusion coverage is low in terms of possessing a bank account, obtaining a good loan and financing, or insurance, where the rates are 40%, 10%, 7%, and 6%, respectively, of the total sample members. Further details are presented in the table below.

### 3.2 Measurement and Instrument

A developed questionnaire is used particularly for this study. The development of the questionnaire was carried out mainly based on reviewing the available literature, variables are gathered so as to be used for measuring Islamic financial inclusion as well as women’s economic empowerment, which allows us to measure the impact of Islamic financial inclusion on women’s economic empowerment. These variables have been used to collect data from 50 individuals to validate the instrument and ensure that respondents are able to understand the statements, after the pilot analysis, the modification was conducted on the statements that seemed vague or illusive to respondents, this led to finalizing the questionnaire instrument, where thirty-four statements have been gathered as being relevant to the dependent variable (Women’s Economic Empowerment), fifteen statements relating to the dimension of access to Islamic financial services, fifteen statements relating to the dimension of using Islamic financial services, and seventeen statements relating the quality of Islamic financial services.

All the statements are asked on a five-point Likert scale where the respondent is asked to give their opinion in a range between strongly disagree (1) and strongly disagree (5).

The statements measuring the dependent variable (Women’s Economic Empowerment) are extracted based on the dimension explored by UNHLP (2016), the statement measuring the dimension of accessing Islamic financial services are gathered from (AFI 2013; Camara and Tuesta 2014), the statement measuring the dimension of using Islamic financial services are gathered from (Camara and Tuesta 2017), while the statements measuring the dimension of the quality of Islamic financial services are gathered from (AFI 2016).

### **3.3 Data Analysis**

For the purpose of analyzing the collected data, the process of screening is conducted to ensure no missing values exist. Exploratory Factor Analysis (EFA) is employed to investigate the relationship between variables and ensure their correlation with each other under their concerned latent variables as assumed in the literature. The technique of principal component analysis with varimax as a rotation method is set as parameters to run EFA. Then Confirmatory Factor Analysis (CFA) is applied through Amos 24 to ensure the reliability and validity of the scale proposed to measure the relationships of variables relevant to measuring financial inclusion as well as women's economic empowerment in an underdeveloped economy. Measures such as factor loadings, convergent reliability, discriminant validity, and goodness of fit indices are assessed to ensure that the proposed model fits that and it is reliable to measure the concerned variables. The Structural Equation Modelling (SEM) is employed by assessing the structure model to identify the impact of the independent variables related to financial inclusion on the dependent variables related to economic empowerment of women in an underdeveloped economy, which is also the section of hypothesis testing.

## **4 Results and Discussions**

### **4.1 Descriptive Statistics**

The overall descriptive statistics of variables are found to be (mean = 3.9341, S.D = 0.778, skewness = -0.140, and Kurtosis = -0.511) for Women's Economic Empowerment (WEE), (mean = 3.648, S.D = 0.943, skewness = -0.183, and Kurtosis = -0.737) for the dimension of access to Islamic financial services (IFIA), (mean = 3.623, S.D = 1.032, skewness = -0.284, and Kurtosis = -0.872) for the dimension of using Islamic financial services (IFIU), and (mean = 3.735, S.D = 0.950, skewness = -0.208, and Kurtosis = -0.842) for the dimension of quality of Islamic financial services (IFIQ). This indicates an overall moderate agreement to the statements included in the questionnaire. Furthermore, it indicates the existence of normality in the data since skewness and kurtosis did not exceed  $\pm 1$  (Hair et al. 2019).

### **4.2 Exploratory Factor Analysis**

Exploratory factor analysis (EFA) is applied to ensure that all statements fit into their assumed factors as assumed in the literature (Green et al. 2016), even though it is not a necessity when the constructs are already assumed (Memon et al. 2017).

Due to the conceptual difference, correlation coefficients difference and, the number of statements between the dependent variable and the independent variables, EFA with the technique Principal component analysis and Promax rotation method is applied separately on the dependent variable and the independent variables.

Applying EFA on the variables relating to the independent variable yielded satisfactory results as assessing the sampling adequacy by KMO and Bartlett's Test yielded a satisfactory value of 0.967 with a significance of 0.000 (Hutcheson and Sofroniou 1999), and communalities ranging from 0.509 to 0.838 (Hair et al. 2019) explaining a total variance of 69.38%, and factor loadings ranging between 0.592 and 0.972 (Hair et al. 2014, 2019). The reliability measures such as Cronbach's Alpha for extracted factors are 0.891, 0.958, and, 0.955 for the three dimensions of access, usage and quality of Islamic financial services respectively, while McDonald's Omega for the same is 0.893, 0.960 and, 0.955 respectively Table 2.

The same process is repeated again in respect to the dependent variable, where the result of the sampling adequacy (KMO and Bartlett's Test) is satisfactory (0.946,  $p$ -value = 0.000), communalities ranging from 0.574 to 0.808, factor loadings ranging from 0.597 and 0.932, and total variance explained 69.202% (Hutcheson and Sofroniou 1999; Hair et al. 2014, 2019). The process yielded four latent factors which have been named as legal norms (LN)—which is a higher-order construct containing more than one possible sub-construct which also required running EFA again on its variable to identify their sub-constructs; building assets—Digital, financial and property (BA), tackling adverse norms and promoting positive role models (TANPPRM), and improving public sector practices in employment and procurement (IPSPEP). Cronbach's Alpha for four factors is 0.961, 0.856, 0.853, and, 0.867 respectively, while MacDonald's Omega for the same is 0.963, 0.852, 0.856, and, 0.868 respectively Table 3.

In the second stage of applying EFA on the variables relating to the dependent variables, more than one possible factor was gathered and correlated together. This makes it impossible to name it as one construct; therefore, EFA has applied again on its variables.

In this regard, the result of the sampling adequacy (KMO and Bartlett's Test) is found to be satisfactory (KMO = 0.946,  $P$ -value = 0.00). The factors extracted under this factor are four factors named which are named as Recognizing, reducing, and redistributing unpaid work and care (RRRUWC), Changing business culture and practice (CBCP), Ensuring legal protection and reforming discriminatory laws and regulations (ELPRDLR), and Strengthening visibility, collective voice, and representation (SVCVR). This led to naming the main construct as legal norms (LN) which is a higher order construct containing these four sub-constructs.

The total variance explained is observed to be 68.01%, 6.57%, 5.06%, and 3.68 for the four sub-constructs respectively, which means that the cumulative total variance explained by legal norms (LN) is 83.33%. The communalities of the variables in this factor ranged between 0.742 and 0.917, while factor loadings ranged between 0.46 and 1.06. Further, the reliability measure of Cronbach's Alpha for the four sub-constructs is found to be 0.922, 0.855, 0.842, and 0.871 respectively, and similarly, McDonald's Omega for the same is found to be 0.925, 0.863, 0.883 respectively,

**Table 2** Exploratory factor analysis of the Islamic financial inclusion result

Items	Mean	S.D.	Communalities	Factor's loadings		
				IFIU	IFIQ	IFIA
IFUB20	3.779	1.178	0.759	0.972		
IFUM23	3.47	1.264	0.835	0.938		
IFUM22	3.475	1.255	0.801	0.832		
IFUM24	3.392	1.284	0.82	0.829		
IFUB21	3.815	1.207	0.705	0.827		
IFUI28	3.61	1.244	0.749	0.763		
IFUM26	3.603	1.254	0.773	0.685		
IFUB18	3.473	1.239	0.715	0.654		
IFUB19	3.311	1.375	0.725	0.654		
IFUB17	3.95	1.023	0.509	0.626		
IFQM39	3.758	1.088	0.796		0.929	
IFQM41	3.689	1.104	0.789		0.882	
IFQM37	3.753	1.058	0.8		0.878	
IFQM38	3.679	1.138	0.838		0.875	
IFQI44	3.66	1.13	0.787		0.779	
IFQB31	3.713	1.096	0.725		0.774	
IFQB32	3.741	1.09	0.772		0.696	
IFAB1	3.834	1.042	0.718			0.902
IFAB2	3.76	1.09	0.748			0.878
IFAM7	3.705	1.138	0.745			0.799
IFAI11	3.639	1.168	0.716			0.603
IFAB6	3.867	1.058	0.598			0.592
Cronbach's Alpha	–	–	–	0.958	0.955	0.891
McDonald's Omega	–	–	–	0.96	0.955	0.893

except Ensuring legal protection contained only two items. *Moreover*, information about the outcome of EFA analysis of this factor is presented in Table 4.

### 4.3 Confirmatory Factor Analysis

Based on the output of exploratory factor analysis, in order to ensure the reliability of the proposed model and to investigate the relationship across variables in the model, confirmatory factor analysis is applied. In order to reach the appropriate measure of reliability, validity and, goodness of fit, modifications are followed in this regard where statements are deleted, such as the sub-constructs of (RRRUWC)



**Table 3** Exploratory factor analysis of women’s economic empowerment (First stage)

Items	Mean	S.D.	Communalities	Factor’s loadings			
				First factor	Building assets	Tackling adverse norms	Improving public sector practices
				LN	BA	TANPPRM	IPSPEP
WECBC73	3.458	1.433	0.801	0.932			
WERUW60	3.404	1.516	0.75	0.898			
WERUW59	3.646	1.375	0.714	0.875			
WESV80	3.523	1.343	0.76	0.874			
WESV81	3.736	1.175	0.727	0.873			
WERUW56	3.2	1.624	0.732	0.869			
WECBC72	3.57	1.341	0.689	0.816			
WEP54	3.724	1.263	0.63	0.798			
WECBC69	3.701	1.209	0.702	0.794			
WECBC70	3.736	1.179	0.694	0.789			
WECBC71	3.986	1.021	0.718	0.731			
WEP52	3.777	1.228	0.63	0.717			
WERUW58	4.121	1.036	0.586	0.647			
WESV77	3.993	1.048	0.574	0.597			
WEBA61	4.366	0.933	0.636		0.849		
WEBA63	4.314	0.846	0.66		0.802		
WEBA62	4.304	0.925	0.642		0.797		
WEBA64	4.392	0.784	0.678		0.683		
WEBA65	4.268	0.82	0.646		0.626		
WET51	3.903	1.184	0.808			0.864	
WET48	3.765	1.234	0.74			0.813	
WET50	3.955	1.14	0.598			0.686	
WET49	4.059	1.114	0.621			0.679	
WEIPS74	4.214	0.962	0.739				0.862
WEIPS76	4.183	0.942	0.772				0.807
WEIPS75	4.261	0.866	0.746				0.792
Cronbach’s Alpha	–	–	–	0.961	0.856	0.853	0.867
McDonald’s Omega	–	–	–	0.963	0.852	0.856	0.868

**Table 4** Exploratory factor analysis of the items which correlated under one latent variable (second stage)

Items	Mean	S.D.	Communalities	Loading factors for the first factor from the first stage (Legal norms)			
				Recognizing unpaid work	Changing business culture	Ensuring legal protection	Strengthening visibility
				RRRUWC	CBCP	ELPRDLR	SVCVR
WERUW60	3.404	1.516	0.917	1.016			
WERUW59	3.646	1.375	0.86	0.955			
WERUW56	3.2	1.624	0.837	0.841			
WECBC72	3.57	1.341	0.819		0.945		
WECBC71	3.986	1.021	0.769		0.842		
WECBC69	3.701	1.209	0.742		0.633		
WEP54	3.724	1.263	0.862			0.897	
WEP52	3.777	1.228	0.859			0.871	
WESV77	3.993	1.048	0.911				1.063
WESV81	3.736	1.175	0.808				0.475
WESV80	3.523	1.343	0.783				0.461
Cronbach's Alpha	–	–	–	0.922	0.855	0.842	0.871
McDonald's Omega	–	–	–	0.925	0.863	–	0.883

and (SVCVR), which resulted in naming the construct Business culture & legal protection (BCLP) instead of legal norms (LN).

#### 4.4 Constructs Validity

Convergent reliability and discriminant validity are assessed to ensure that the model is valid and reliable after deleting the problematic statements and sub-constructs. As observed in Table 5, Composite Reliability (CR) is found to be greater than 0.7 and Average Variance Extracted (AVE) for each construct is found to be greater than 0.5. Furthermore, the values of inter-correlation of items are observed to be less than the square root of AVE, which indicates that convergent reliability and discriminant validity are established (Hu and Bentler 1999).

This leads to conclude that the proposed model in its final draft is reliable and valid to measure the relationship across variables relevant to Islamic financial inclusion (IFI) and women's economic empowerment (WEE).

The following Fig. 4, presents the measurement model in its final form after deleting the variable and sub-constructs that were problematic in regards to fitting

**Table 5** Validity and reliability of the final measurement model

	Cronbach's Alpha	McDonald's Omega	CR	AVE	MSV	MaxR(H)	IFIQ	WEE	IFIU	IFIA
IFIQ	0.955	0.955	0.955	0.752	0.724	0.956	<b>0.867</b>			
WEE	0.918	0.919	0.874	0.636	0.623	0.967	0.789	<b>0.797</b>		
IFIU	0.958	0.958	0.957	0.762	0.724	0.982	0.851	0.729	<b>0.873</b>	
IFIA	0.891	0.893	0.891	0.621	0.608	0.984	0.78	0.724	0.77	<b>0.788</b>

Convergent Validity: Composite Reliability (CR) >0.7, Average Variance Extracted (AVE) >0.5. Discriminant Validity: MSV < AVE

the model into the data with regards to the relationship of Islamic financial inclusion with women's economic empowerment in the context of Yemen.

The indices of goodness of fit of the measurement model are reported in the Table 6, where Chi-square ( $\chi^2$ ) = 1461.502, Degrees of freedom (df) = 548, Normed chi-square ( $\chi^2/df$ ) = 2.667, and  $P < 0.000$ , moreover, Comparative fit index (CFI) = 0.929, Goodness-of-fit index (GFI) = 0.832, Adjusted goodness-of-fit index (AGFI) = 0.806, Normed fit index (NFI) = 0.891, Root mean square error of approximation (RMSEA) = 0.063, and Standardized root mean residual (SRMR) = 0.0518, which is considered acceptable and satisfactory results according to the references mentioned in the table below.

This indicates that Islamic financial inclusion and its relationship with women's economic empowerment in the Yemeni context as an underdeveloped economy by using the model proposed in this study.

### 4.5 Structure Model

After ensuring the model is ready to measure the causal relationship between Islamic financial inclusion (IFI) and women economic empowerment (WEE), by using Structural Equation Modelling (SEM), single headed arrows are drawn from the independent variables towards the dependent variable in order to measure the impact on women economic empowerment caused by Islamic financial inclusion variables.

As observed in Fig. 5 below, model fit indices have not changed from the measurement model, indicating that they are acceptable (Hair et al. 2019; Hu and Bentler 1999).

Further, in the process of testing hypotheses generated for this study and as shown in Table 7, there a significant positive impact on women economic empowerment caused by access to Islamic financial services (IFIA) ( $\beta = 0.293$ , P-value = 0.001) and quality of Islamic financial services (IFIQ) ( $\beta = 0.487$ , P-value = 0.001) which supports the first and third hypotheses ( $H_1$  and  $H_3$ ). While no significant impact is observed to be cause by the use of Islamic financial services (IFIU) on women's economic empowerment ( $\beta = 0.108$ , P-value = 0.113) ( $H_2$ ).

Chisquare=1461.502  
 Df=548  
 Normed chisquare=2.667  
 CFI=.929  
 P=.000  
 RMSEA=.063

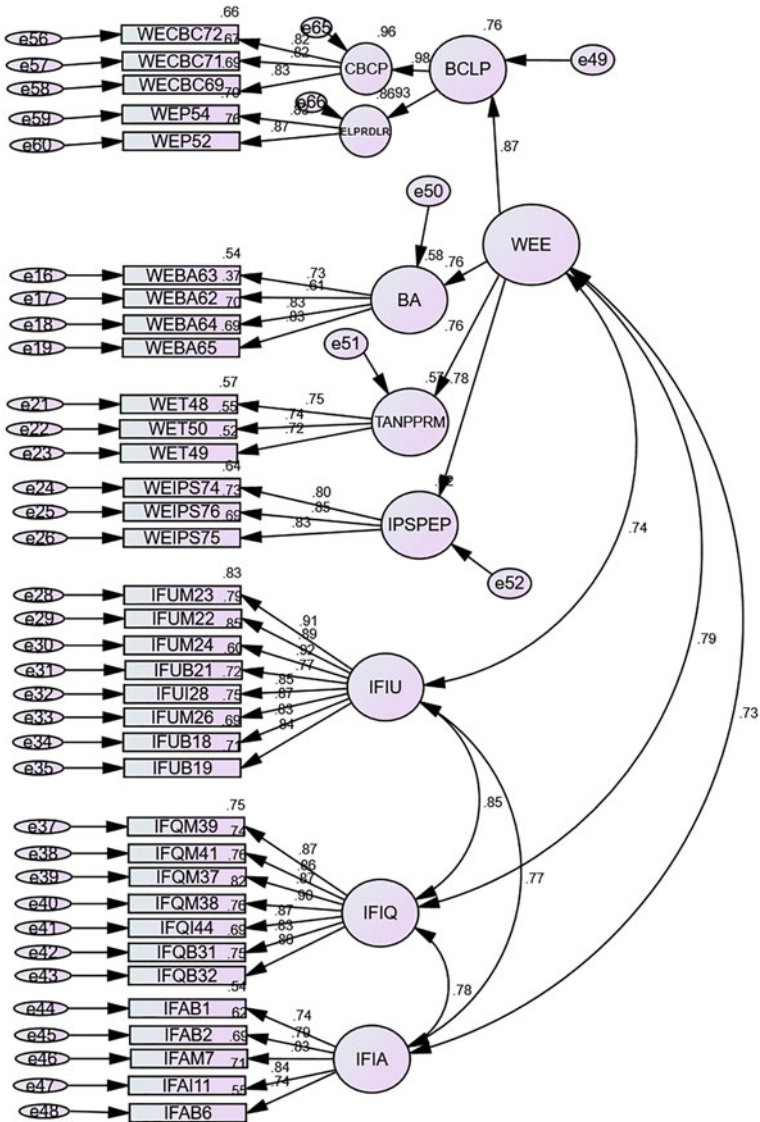
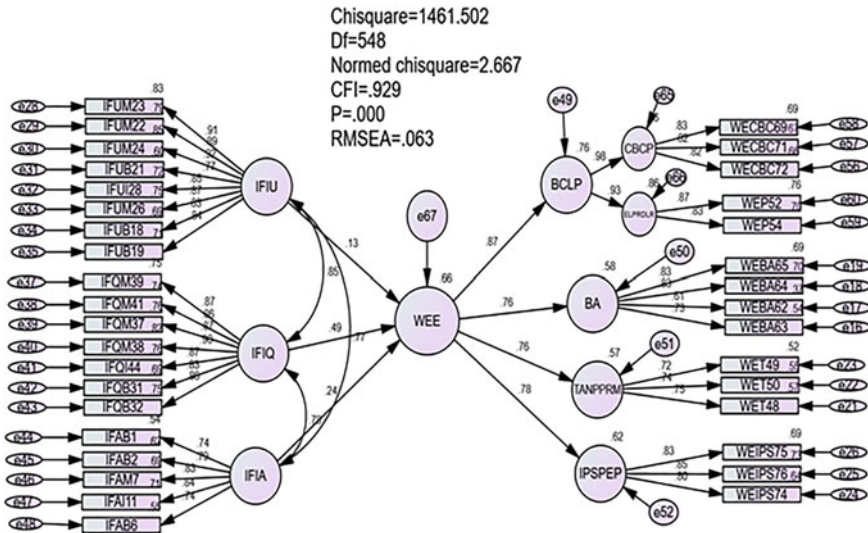


Fig. 4 CFA measurement model with standardized estimates

**Table 6** The influence IFI on WEE CFA goodness-of-fit statistics

Index	Cut off values	References	Model fit indices
$\chi^2$	–	–	1461.502
df	–	–	548
$\chi^2/df$	–	–	2.667
P	>0.5*	Forza and Filippini (1998), Awang (2012)	0.000
GFI	>0.8	Baumgartner and Homburg (1996), Doll et al. (1994), Forza and Filippini (1998), Greenspoon and Saklofske (1998)	0.832
AGFI			0.806
RMSEA	<0.08	Hu and Bentler (1999), Hair et al. (2019)	0.063
SRMR	<0.08	Hair et al. (2010), Awang (2012)	0.0518
NFI	>0.8	Forza and Filippini (1998)	0.891
CFI	>0.9	Hair et al. (2010), Awang (2012)	0.929

\*=the p value is sensitive to sample size where it is rare to find a higher p value with a high sample, therefore, it is considered satisfactory



**Fig. 5** Structural equation model with standardised values

**Table 7** Hypothesis test results

			Estimate	S.E.	C.R.	P	Hypothesis
WEE	<---	IFIA	0.293	0.09	3.251	0.001	Not rejected
WEE	<---	IFIU	0.108	0.07	1.587	0.113	Rejected
WEE	<---	IFIQ	0.487	0.09	5.479	***	Not rejected

## 5 Discussion

Financial inclusion has gained due attention because of the role it plays in economic development, improving the life standards of individuals, and reducing the variance in wealth distribution (Demirguc-Kunt et al. 2018), as women economic empowerment became a possibility through financial inclusion along with poverty alleviation (George and Thomachan 2018) regardless of the challenges that still hinder the chances of empowering women especially in lower-income countries (UNHLP 2016).

Regardless of the crucial importance of financial inclusion for economies, it has not yet contributed towards women's economic empowerment in Yemen. This is due to the Riba that the traditional financial system is based on, which requires higher interest rates and this reduces the chances of empowerment as the majority of individuals prefer not to use financial services that are against the guidelines of Islam, further, as the Yemeni society is a conservative society and follow the Islamic guidelines, a wide variety of individuals tend to find other alternatives than to opt for such services. This makes the Islamic manner of offering financial services widely accepted among conservative individuals.

The study aimed at investigating the role of Islamic financial inclusion in improving women's economic empowerment based on the theories of empowerment (Riger 1993; Perkins and Zimmerman 1995; Ibrahim and Alkire 2007; Attia 2017; Al-Aqeel 2019; Zumaruda 2010). and the previous works that investigated empowerment from the point of view of Islamic financial inclusion (Al-Omar 2003; Al-Nabhan 1984; Al-Saati 2012; Al-Hamad 2010).

The study adopted the three dimensions of (Access, usage, quality) to measure financial inclusion among women in Yemen from an Islamic perspective. During investigating the impact of the three dimensions on women's economic empowerment, and for the purpose of testing the proposed model, some variables relevant to the independent variable were deleted such as RRRUWC, SVCVR. Based on this analysis, the output of confirmatory factor analysis (CFA) yielded goodness of fit indices which reflects that the model after deleting the problematic variables is reliable to measure Islamic financial inclusion (IFI) in an underdeveloped economy such as Yemen as well as the measure its impact on women economic empowerment (WEE).

The impact of accessing Islamic financial service (IFIA) on women economic empowerment (WEE) is found to be positive and statistically significant (Estimate = 0.293, C.R. = 3.251, S.E. = 0.09, P-value = 0.001). This is consistent with previous research (Ali 2019) in respective of the availability of Islamic financial tools and services leads to improving the access of women to such services after removing any obstacles preventing women from accessing such products and services, as the less spread of Islamic financial institutions acts as a challenge that prevents women from accessing such services especially in rural areas in the country. As the majority of responses are from urban areas (82%), reporting the ability to access Islamic financial services while in rural areas such access is found to be rare due to lacking branches of

these institutions in the rural and backward areas. Even if there are some programs and plans in funding individuals in rural areas, then the recent changes in the political and economic conditions that Yemen is witnessing currently have contributed to deteriorating such plans and programs which left individuals in rural areas with extra obstacles to access financial resources. This underscores the importance of investing in the ICT sector in terms of competitiveness, development and employment (Salami et al. 2020), but there is lack of offering financial services in rural area can be attributed to the lack of spread of mobile and internet connection in such areas (Abdel-moneim and Qaaloul 2021), this makes the possibility of accessing financial resources a very challenging possibility due to huge requirement that could be imposed on individuals if planning to obtain loans or funds. It is worth mentioning that the education level of respondents who reported the possibility to access financial services is a bachelor degree or higher, this indicates the education plays a role in creating the need for financial services or encouraging their usage.

The impact of appropriate use of Islamic financial services (IFIU) on women's economic empowerment (WEE) in Yemen is found to be statistically insignificant (Estimate = 0.108, C.R. = 1.587, S.E. = 0.068, and p-value = 0.113).

Due to lack of income among women, coupled with traditions and customs as well as financial literacy, women are found incapable of appropriately using Islamic financial services so as to become partially or fully empowered in society.

This result is consistent with previous research (Demircug-Kunt et al. 2013; Gharbi 2019) which reported a very low portion of individuals in the MENA Region to use Islamic financial services due to experiencing obstacles and challenges that hamper the chances of using such services. Further, the empirical findings indicate a very low rate of using Islamic financial services as 40% of respondents possess a bank account, 10% have Qard Hasan, 7% have funds from an Islamic financial institution, and 6% have insurance in an Islamic financial institution. This indicates the continuance of the suffering of women to lack economic empowerment according to the reports of the world bank (The World Bank 2014).

Since the characteristics of the respondent who reported that they are using Islamic financial services unveil that they have at least a high school education, and they are older than 20 years old. This indicates the building a contributive education system can play a significant role in improving the usage of Islamic financial services by spreading awareness and educating them in the same regard.

The impact of the quality of Islamic financial services (IFIQ) on women's economic empowerment (WEE) in Yemen is found positively influential and statistically significant (Estimate = 0.487, C.R. = 5.479, S.E. = 0.089, p value = 0.000). This is not surprising since the Islamic financial system accounts for 51.5% of the financial system in Yemen. Further, the organizational and control systems in Islamic banks are distinguished from the ones in traditional banks (Demircug-Kunt, et al. 2013).

This is supported by previous research (Beck et al. 2007) reporting that the quality is strongly associated with the spread and coverage of wide areas in respect to branches, ATMs, and financial performance, and further, it is strongly associated with offering services to individuals/customers, from this standpoint, (Al-Qurashi

2020) confirming the impact of quality through reliability, responsiveness, tangibility, empathy, and assurance by Islamic banks to achieve customer satisfaction. Furthermore, the results are consistent with previous research (Abedalla and Al-Suhaiby 2020), in respect of the good quality of service among Yemeni Islamic banks as the parameters of quality are found to be adopted and applied.

The findings of this research indicate that Islamic financial inclusion has a significant impact on women's economic empowerment. However, in the context of Yemen, a lot needs to be done in order to facilitate and ease the access, usage, and quality of Islamic financial services which result in women economic empowerment.

The implication of this research can be summarized by being the first study to investigate Islamic financial inclusion and its impact on women's economic empowerment; being one of few studies that investigated women economic empowerment in an underdeveloped economy; and investigating women's economic empowerment through adopting the determinant suggested by UNHLP (2016). So, the study proposed a model which was evidently fit in its final form to measure the impact of Islamic financial inclusion on women's economic empowerment in an underdeveloped economy.

The study also presented a framework for policy makers and international development partners to obtain an insight into the real situation of financial inclusion in Yemen along with Islamic perspective of the same.

Based on this discussion, the following suggestions are drawn from this study:

Focusing more attention on improving the awareness among women in respect to Islamic financial services, as financial literacy has been reported as one of the major difficulties for women to use financial services (Shanbei and Ben Lakhdar 2018).

Implementing good governance which would employ inclusive discipline in the society which can begin with enforcing education as a mandatory responsibility in the society as the rate of registration for schools is very low among females (Arab Monetary Fund 2020), this would be a way out to reduce illiteracy among individuals and women in particular, hence financial literacy can be easily developed.

Making insurance a compulsory service for small and medium enterprises in all sectors, which prevents business closure and further facilitates their chances of accessing financial resources and particularly for enterprises owned by women, as the rate of participation of women in Yemen is found to be low compared to other societies (Arab Monetary Fund 2020).

Building a specific strategy for Islamic financial inclusion which is not only for Yemen, but to be compatible for application in Islamic countries which can play a significant role in improving the access and usage of Islamic financial services among Yemen and hence increasing women's economic empowerment in such countries.

Encouraging the digital access and advancement in adopting technology in the business and spread the awareness about them among Yemen which would play a role in educating women about the benefits of using technological methods in respect of accessing and using Islamic financial services especially in rural area where such access, if promoted, can act as a key contributor towards facilitating the access and usage of Islamic financial services among Rural women in Yemen.



Finally, the study suggests solving the tribal disputes that impact the security and safety for women to function when it comes to entrepreneurial activities or accessing Islamic financial services which allow them to expand their activities and hence increasing their economic empowerment (Valette 2019). All this depended on the awareness of women and their confidence in participating in the economic development especially in underdeveloped economies (Talbna 2018).

## 6 Conclusion

The study aimed at investigating the impact of Islamic financial inclusion on the economic empowerment of women in Yemen, with the help of data collected from 421 women in Yemen.

By reviewing the available literature, constructs are chosen to measure Islamic financial inclusion as the independent variable through access, usage and quality of Islamic financial services; and women economic empowerment as the dependent variable through tackling adverse norms, ensuring legal protection, recognizing unpaid work and care, building assets—digital, financial and property, changing business culture, improving public sector practices in employment, and strengthening visibility, collective voice. The study adopted factor analysis and structural equation modelling (SEM) to investigate the relationship among variables and measure the impact of Islamic financial inclusion (IFI) on women's economic empowerment (WEE).

The study finding indicates the significant impact of access to Islamic financial service and the quality of Islamic financial service on the economic empowerment of women, while the third dimension which is the usage of Islamic financial services among women is not found significantly influential on women's economic empowerment.

## 7 Research Limitation and Further Research Scope

The limitation of this research is that the study focused on empowering women in the least developed countries. Further, research can be conducted on a wider sample of women, which means including a wider sample from each city, this provides more variety in the sample and also provides the possibility to compare cities with each other.

Further, research may consider sampling rural areas only to provide an insight into the nature of financial inclusion in rural areas of least developed economies such as Yemen.

Furthermore, since our study focused on Islamic financial inclusion, research work may also consider the aspect of measuring and investigating financial inclusion without focusing on the Islamic perspective in order to be in a position to obtain a

general insight into financial inclusion in general as long as less research is involved in financial inclusion in the least developed economies and Yemen in particular. Comparative research about financial inclusion among women between the Islamic and traditional perspectives can be a fruitful research area for further research.

Finally, investigating other factors of economic empowerment among women in the least developed economies can present new perspectives about empowerment other than the aspects discussed in our model.

## References

- Abdel-moneim, H., Qaaloul, S.: A study towards building a composite conference to monitor the development of the digital economy in the Arab countries. Arab Monetary Fund, Abu Dhabi (2021)
- Abedalla, B.M., Al-Suhaiby, E.N.E.: The impact of the quality of banking services on achieving customer satisfaction by building a positive mental image 'A field study on banks operating in Sana'a- Yemen. *J. Econ. Adm. Legal Sci.* **4**(6), 32–61 (2020)
- AFI: Indicators of the Quality Dimension of Financial Inclusion. Alliance for financial inclusion (AFI), Malaysia (2016)
- AFI: measuring financial inclusion; core set of financial inclusion indicators. Alliance for financial inclusion (AFI), Malaysia (2013)
- Ahmed, H.: Financing microenterprises: an analytical study of Islamic microfinance institutions. *Islam. Econ. Stud.* **9**(2), 27–64 (2002)
- Alaghbari, L.M.A., Othman, A.H.A.: Islamic Financial Inclusion and relieving the COVID-19 impact through Zakat and Waqf. *Int. J. Herit. Islam. Wealth Finance* **2**(2), 1–25 (2021). Special Issue
- Al-Aqeel, M.: Empowering women economically is a strategic goal to ensure sustainable development. *Politics newspaper* (2019). <https://bit.ly/3ybZDXR>
- Albana'i, A.Q.A.A.: The reality of economic projects directed at women in the Republic of Yemen. Arab Women Organization (2015)
- Alfuqaha, S.A.Q.: Factors affecting customer satisfaction with Islamic banking services in Palestine. *Jordan. J. Bus. Adm.* **8**(2), 236–263 (2012)
- Al-Hamad, A.Q.S.: Women's rights in Islam, 1st edn. Riyadh (2010)
- Ali, A.E.: Empowering women through financial inclusion: some evidence from Comoros. *Int. J. Asian Soc. Sci.* **9**(2), 256–270 (2019)
- Al-Kharouf, A.M.A.: Women's economic empowerment between quantity and gender. Indicators of women's economic empowerment in Jordan. Jordanian Hashemite Fund for Human Development (JOHUD), Jordan (2013)
- Al-Nabhan, M.F.: The impact of the application of the Islamic economic system on society. From the research presented to the Islamic Fiqh Conference. Imam Muhammad Bin Saud Islamic University, Riyadh (1984)
- Al-Omar, F.A.: Introduction to the history and development of Islamic economics. Islamic Development Bank. Islamic Research and Training Institute. Research No. 62. 1st edn., Jaddah (2003)
- Al-Qurashi, Z.R.: The effect of the quality of banking services on the customer satisfaction of Islamic banks in Jordan. *Int. J. Islam. Market.* **6**(3), 81–94 (2020)
- Alraayi: Islamic finance provides added value to financial inclusion (2014). <https://bit.ly/2Tc9cqz>
- Al-Saati, A.R.A.H.: The economic reason for the prohibition of usury Al-Nassih and Alfadl. *J. Abdul King Abdulaziz Univ. Islam. Econ.* **25**(2), 33–75 (2012)

- Al-Shami, S.S.A., Majid, I.B.A., Rashid, N.A., Hamid, M.S.R.B.A.: Conceptual framework: the role of microfinance on the wellbeing of poor people cases studies from Malaysia and Yemen. *Asian Soc. Sci.* **10**(1), 230–242 (2014)
- Al-Shami, S.S.A., Razali, M.M., Majid, I., Rozelan, A., Rashid, N.: The effect of microfinance on women's empowerment: evidence from Malaysia. *Asian J. Women's Stud.* **22**(3), 318–337 (2016)
- Alshebami, A.S., Khandare, D.M.: Microfinance in Yemen challenges and opportunities. *Int. J. Manage. Soc. Sci.* **2**(12), 400–413 (2014)
- Alshebami, A.S., Khandare, D.M.: The role of microfinance for empowerment of poor women in Yemen. *Int. J. Soc. Work* **2**(1), 36–44 (2015)
- Alshebami, A.S., Rengarajan, V.: Microfinance institutions in Yemen "hurdles and remedies." *Int. J. Soc. Work* **4**(1), 10–21 (2017)
- Al-TaHER, O.A.B., Benabdallah, N.: The impact of the quality of banking services on customer satisfaction: a field study: commercial banks in Al-Darb Governorate, Kingdom Saudi Arabia. *Arab J. Sci. Publ.* (14), 74–98 (2019)
- Arab Monetary Fund: Requirements for adopting a national strategy to enhance financial inclusion in the Arab countries. Worksheet. The Regional Task Force for Promoting Financial Inclusion in the Arab Countries, Abu Dhabi (2015)
- Arab Monetary Fund: The role of the Arab Monetary Fund in empowering Arab women, Abu Dhabi (2018)
- Arab Monetary Fund: The role of the Arab Monetary Fund in empowering Arab women, Abu Dhabi (2020)
- Ardic, O.P., Heimann, M., Mylenko, N.: Access to financial services and the financial inclusion agenda around the world: a cross-country analysis with a new data set. The World Bank. Policy Research Working Paper. WPS5537 (2011)
- Attia, H.: Economic empowerment of women is one of the pillars of comprehensive development in the Kingdom. *Al-Destur Mag.* (2017). <https://bit.ly/3gZ2y0b>
- Awang, Z.: Structural equation modelling using AMOS graphic. Penerbit Universiti Teknologi MARA (2012)
- Awojobi, O.N.: Empowering women through micro-finance: evidence from Nigeria. *Austr. J. Bus. Manage. Res.* **4**(1), 17–26 (2014)
- Bagouri, S.: Empowering women to achieve sustainable development in Africa. Arab Democratic Centre. *J. Afr. Nile Basin Stud.* **2**(5), 119–130 (2019).
- Balasubramanian, S.A., Kuppusamy, T., Natarajan, T.: Financial inclusion and land ownership status of women. *Int. J. Dev.* **18**(1), 51–69 (2019)
- Bassiouni, S.A.F.M.: Economic freedom in Islam and its impact on development. first edition. Dar Al-Wafaa for printing, publishing and distribution, Mansoura, Egypt (1988)
- Baumgartner, H., Homburg, C.: Applications of structural equation modelling in marketing and consumer research: a review. *Int. J. Res. Mark.* **13**(2), 139–161 (1996)
- Bayero, M.A.: Exploring the link between financial inclusion and women entrepreneurship. *Lapai J. Manage. Sci.* **6**(3), 247–259 (2015)
- Baza, A.U., Rao, K.S.: Financial inclusion in Ethiopia. *Int. J. Econ. Finance* **9**(4), 191–201 (2017)
- Beck, T., Demirgüç-Kunt, A., Honohan, P.: Access to financial services: measurement, impact, and policies. *World Bank Res. Observer.* **24**(1), 119–145 (2009)
- Beck, T., Demirguc-Kunt, A., Martinez Peria, M.S.: Reaching out: access to and use of banking services across countries. *J. Financ. Econ.* **85**(1), 234–266 (2007)
- Camara, N., Tuesta, D.: Measuring financial inclusion: a multidimensional index. BBVA Research Paper 14/26 (2014)
- Camara, N., Tuesta, D.: Measuring financial inclusion: a multidimensional index 1. Bank of Morocco – CEMLA – IFC Satellite Seminar at the ISI World Statistics Congress on "Financial Inclusion" (2017)
- Darwish, M.J.: Analysis of the quality of Islamic banking services, an applied study on Islamic banks in Palestine. *Ramah J. Res. Stud.* **17**, 39–54 (2016)

- Demirguc-Kunt, A., Klapper, L., Randall, D.: Islamic finance and financial inclusion: measuring use of and demand for formal financial services among Muslim adults. Policy Research Working Paper 6642 (2013)
- Demirguc-Kunt, A., Klapper, L., Singer, D., Ansar, S., Hess, J.: The Global Findex Database 2017: Measuring financial inclusion and the fintech revolution. The World Bank. World Bank, Washington, DC (2018). <https://doi.org/10.1596/978-1-4648-1259-0>. License: Creative Commons Attribution CC BY 3.0 IGO
- Doll, W.J., Xia, W., Torkzadeh, G.: A confirmatory factor analysis of the end-user computing satisfaction instrument. *MIS Q.*, 453–461 (1994)
- Eton, M., Fabian, M., Benard, P.O., Edaku, C., Dennis, O.: Financial inclusion and women empowerment in Uganda a case of Lango Sub Region, Northern Uganda. *Econ. Commerce Trade Manage. Int. J.* **2**(1), 1–11 (2018)
- Evans, O.: Connecting the poor: the internet, mobile phones and financial inclusion in Africa. *Digital Policy, Regulation and Governance* (2018)
- Fareed, F., Gabriel, M., Lenain, P., Reynaud, J.: Financial inclusion and women entrepreneurship: Evidence from Mexico (2017). <http://dx.doi.org/10.1787/2fbd0f35-en>
- Forza, C., Filippini, R.: TQM impact on quality conformance and customer satisfaction: a causal model. *Int. J. Prod. Econ.* **55**(1), 1–20 (1998)
- George, B., Thomachan, K.T.: Financial inclusion and women empowerment: a gender perspective. *Int. J. Res. Granthaalayah* **6**(5), 229–237 (2018)
- Gharbi, A.H.A.: The financial inclusion and banking gap in Arab economies with special reference to the Arab Islamic banking sector. *Bait Al-Mashura Mag.* (10) (2019)
- Green, J.P., Tonidandel, S., Cortina, J.M.: Getting through the gate: statistical and methodological issues raised in the reviewing process. *Organ. Res. Methods* **19**(3), 402–432 (2016)
- Greenspoon, P.J., Saklofske, D.H.: Confirmatory factor analysis of the multidimensional students' life satisfaction scale. *Personality Individ. Differ.* **25**(5), 965–971 (1998)
- Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E.: *Multivariate Data Analysis: Pearson New International Edition*. Pearson Education Limited, Essex (2014)
- Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E.: *Multivariate Data Analysis*, 8th edn. Cengage, Hampshire (2019)
- Hair, J.F., Black, W.C., Babin, B.J.: *Multivariate Data Analysis A Global Perspective*, Pearson (2010)
- Hamdan, B.S., Abu Dayyeh, M.: The impact of financial inclusion on economic development in Palestine. *J. Econ. Finance* **4**(2), 177–188 (2018)
- Hamdan, R., Hamdan, A., Alareeni, B., Atayah, O.F., Alhalwachi, L.F.: Women on boards of directors: the moderation role of female labour force participation. *Competitiveness Rev. Int. Bus. J.* (2021a)
- Hamdan, R., Nasrallah, N., El Khoury, R., Hamdan, A., Alareeni, B.: Presence of women on boards in industrial firms: evidence from GCC countries financial markets. *Int. J. Manag. Sci. Eng. Manage.*, 1–12 (2021b)
- Hassan, A., Saleem, S.: An Islamic microfinance business model in Bangladesh: its role in alleviation of poverty and socio-economic well-being of women'. *Humanomics* **33**(1), 15–37 (2017)
- Hassan, A.: Financial inclusion of the poor: from microcredit to Islamic micro financial services. *Humanomics* **31**(3), 354–371 (2015)
- Holloway, K., Niazi, Z., Rouse, R.: Women's economic empowerment through financial inclusion: a review of existing evidence and remaining knowledge gaps. *Innovations for Poverty Action*, New Haven, CT (2017)
- Hu, L.T., Bentler, P.M.: Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives. *Struct. Equ. Model. Multidisc. J.* **6**(1), 1–55 (1999)
- Humaid, M.A., Khan, M.R.: Migrants' remittances and financial inclusion opportunities for Republic of Yemen. *Int. J. Manage. Stud.* **2**(1), 1–9 (2018)
- Hutcheson, G.D., Sofroniou, N.: *The Multivariate Social Scientist: Introductory Statistics Using Generalized Linear Models*. Sage (1999)

- Hyland, M., Djankov, S., Goldberg, P.K.: Gendered laws and women in the workforce. *Am. Econ. Rev. Insights* **2**(4), 475–490 (2020)
- Ibrahim, S., Alkire, S.: Agency and empowerment: a proposal for internationally comparable indicators. *Oxf. Dev. Stud.* **35**(4), 379–403 (2007)
- I-FIKR: Islamic finance body IFSB to develop financial inclusion guidance (2018). <https://bit.ly/3dm5JwK>
- International Labour Organization (ILO): Labor Force Survey in the Republic of Yemen 2013–2014. Regional Office for Arab States, Beirut (2015)
- Iqbal, Z., Mirakhor, A.: Financial inclusion: Islamic finance perspective. *J. Islam. Bus. Manage.* **2**(1), 35–64 (2012)
- Isaac, J.: Expanding Women’s Access to Financial Services, 26 February 2014. The world bank (2014). <https://bit.ly/3hf8r9H>
- Islam, M.S.: Microcredit, financial inclusion and women empowerment Nexus in Bangladesh. *Stud.* **3**(2), 6–15 (2014)
- Izquierdo, N.C., Tuesta, D.: Factors that matter for financial inclusion: evidence from Peru. *Aestimatio IEB Int. J. Finance* (10), 10–31 (2015)
- Jatfors, A.K.: Violence Against Women and Women’S Economic Empowerment. UN Women Regional Office for Asia and The Pacific, Bangkok (2017)
- Johnson, R.B., Onwuegbuzie, A.J., Turner, L.A.: Toward a definition of mixed methods research. *J. Mix. Methods Res.* **1**(2), 112–133 (2007)
- Jouti, A.T.: Islamic finance: financial inclusion or migration? *ISRA Int. J. Islam. Finance* **10**(2), 277–288 (2018)
- Khaki, A.R., Sangmi, M.U.D.: Does access to finance alleviate poverty? A case study of SGSY beneficiaries in Kashmir Valley. *Int. J. Soc. Econ.* **44**(8), 1032–1045 (2017)
- Krejcie, R.V., Morgan, D.W.: Determining sample size for research activities. *Educ. Psychol. Measur.* **30**, 607–610 (1970)
- Kriese, M., Abor, J.Y., Agbloyor, E.: Financial access and economic development: the moderating role of financial consumer protection. *Int. J. Manag. Finance* **15**(4), 406–424 (2019)
- Lal, T.: Impact of financial inclusion on poverty alleviation through cooperative banks. *Int. J. Soc. Econ.* **45**(5), 807–827 (2018)
- Luoga, F.D.A.M.: Making access to financial services a citizenry right. AFI (2018). <https://bit.ly/365BxSA>
- Mahmoud, I.M.: The role of Islamic finance in achieving economic development goals. Islam Online website (2017). <https://bit.ly/2Ubs35v>
- Mayoux, L.: Women’s Empowerment through Sustainable Microfinance: Rethinking “Best Practice”. *Eldis Gender Guide*, pp. 47–62 (2005)
- Memon, M.A., Ting, H., Ramayah, T., Chuah, F., Cheah, J.H.: A review of the methodological misconceptions and guidelines related to the application of structural equation modeling: a Malaysian scenario. *J. Appl. Struct. Equ. Model.* **1**(1), 1–13 (2017)
- Middle East: Islamic banking seizes the opportunity of spreading the concept of financial inclusion to expand internationally (2014). <https://bit.ly/3h9ObVE>
- Naceur, S.B., Barajas, A., Massara, A.: Can Islamic banking increase financial inclusion? In: *Handbook of Empirical Research on Islam and Economic Life*. Edward Elgar Publishing (2015)
- National Information Center: An introduction to Yemen. Presidency (2019). <http://www.yemen-nic.info/yemen/>
- Onwuegbuzie, A.J., Collins, K.M.: A typology of mixed methods sampling designs in social science research. *Qual. Rep.* **12**(2), 281–316 (2007)
- Ouma, S.A., Odongo, T.M., Were, M.: Mobile financial services and financial inclusion: Is it a boon for savings mobilization? *Rev. Dev. Finance* **7**(1), 29–35 (2017)
- Patil, H.S.: Financial inclusion as the mode for women empowerment. *Stud. Indian Place Names* **40**(38), 311–317 (2020)

- Perkins, D.D., Zimmerman, M.A.: Empowerment theory, research, and application. *Am. J. Community Psychol.* **23**(5), 569–579 (1995)
- Qaied, M.M.M., Basavaraj, K.: The Role of microfinance for empowerment of poor women in light of the current crisis in Yemen. *Int. Acad. J. Account. Financial Manage.* **6**(1), 23–31 (2019)
- Qutb, S.: Interpretation of the verses of usury. Dar Alshuruq, Cairo (1995)
- Ragab, J.A.M., Misri, M.B.A.: The role of customer empowerment in developing the value of the company through mediating the quality of the relationship: an empirical study on the customers of cellular communications companies in Syria. *Arab J. Manage.* **39**(1), 165–190 (2019)
- Ramadan, A.E.M.: Sustainable development and financial inclusion: visions, effects, and repercussions. In: *The Third Scientific Conference of the Faculty of Commerce*. Tanta University (2019)
- Raza, M.S., Tang, J., Rubab, S., Wen, X.: Determining the nexus between financial inclusion and economic development in Pakistan. *J. Money Laund. Control* **22**(2), 195–209 (2019)
- Riger, S.: What's wrong with empowerment. *Am. J. Community Psychol.* **21**(3), 279–292 (1993)
- Ruhara, C.M., Umurungi, P., Kazarwa, S., Kayitana, C., Dukunde, A., Ndikubwimana, J.B.: Impact of access to financial services on business development in Rwanda. *UoK Sci. J.* (2018). ISSN 2522
- Salami, A., Salami, A., Salami, A.: The reality of technological infrastructure in Algeria. An international aggregator of input on the outstanding performance of organizations and governments. Fifth Edition: The performance of institutions in light of the digital economy held at the University of Ouargla. *Algeria on February 4 and 5* (2020)
- Salami, M., Baba, I.: Small and medium enterprises as a tool for the economic empowerment of women in Algeria. *Algerian Enterprise Managem. J.* (3), 73–49 (2013)
- Sayed, M.N., Shusha, A.: Determinants of financial inclusion in Egypt. *Asian Econ. Financ. Rev.* **9**(12), 1383–1404 (2019)
- Shanbei, S., Ben Lakhdar, A.: The importance of financial inclusion in achieving development: enhancing financial inclusion in the Arab Republic of Egypt. *J. Res. Finance Account.* **3**(2), 104–129 (2018)
- Siddik, M.N.A.: Does financial inclusion promote women empowerment? Evidence from Bangladesh. *Appl. Econ. Finan.* **4**(4), 169–177 (2017)
- Singh, S., Shah, M.S.: Does financial inclusion lead to sustainable women empowerment? Few grass root experiences from India. *Asia Pac. J. Res.* **1**(XXXIX), 210–217 (2016)
- Subramanian, R.: Financial inclusion-micro finance a sustainable model. *Int. J. Res.* **1**(6), 566–574 (2014)
- Swamy, V.: Financial inclusion, gender dimension, and economic impact on poor households. *World Dev.* **56**, 1–15 (2014)
- Talbna, M.: The path to empowering women in the Islamic world. Where to? *Middle East Newspaper*. Issue: 14612 (2018). <https://bit.ly/3wZaUKE>
- The World Bank: Financial inclusion is a key enabler to reducing poverty and boosting prosperity (2018). <https://www.worldbank.org/en/topic/financialinclusion/overview>
- The World Bank: The Status of Yemeni Women: From Ambition to Realizing Opportunities. World Bank Group, Washington (2014)
- Ulfi, I.: Empowering women through Islamic microfinance: experience of BMT Beringharjo. *JEBI (jurnal Ekonomi Dan Bisnis Islam)* **3**(1), 89–101 (2018)
- UNHLP: Leave no one behind: a call to action for gender equality and women's economic empowerment. Report of the UN-secretary-general's high-level panel on women's economic empowerment (2016). <https://www.unscn.org/uploads/web/news/UNSG-HLP-WEE-2nd-Report-.pdf>
- United Nations: "World Population Prospects 2019: Data Booklet" United Nations, Department of Economic and Social Affairs (2019)
- United Nations: Impact of access to financial services, including by highlighting remittances on development: economic empowerment of women and youth'. In: *United Nations Conference on Trade and Development, United Nations, Geneva* (2014)

- Valette, D.: Protection, Participation and Potential Women and Girls in Yemen's War. International Rescue Committee (2019)
- Wale, L.E., Makina, D.: Account ownership and use of financial services among individuals: evidence from selected Sub-Saharan African economies. *Afr. J. Econ. Manage. Stud.* **8**(1), 19–35 (2017)
- Zulhibri, M.: Financial inclusion, financial inclusion policy and Islamic finance. *Macroecon. Finance Emerg. Mark. Econ.* **9**(3), 303–320 (2016)
- Zumaruda, F.: The concept of empowerment in the Holy Quran. Engorged site (2010). <https://www.maghress.com/almithaq/3000>

# Employee Engagement on Employee Performance: Islamic Perspective



Noor Arifin , Heru Kurnianto Tjahjono , Arif Hartono ,  
and Muafi Muafi 

**Abstract** This study aims to explore the concept of employee engagement in Islamic perspective and its consequences on human resource performance. It is based from the Qur'an, hadith of the Prophet Muhammad, the opinions of the theologian, and several studies regarding the essence of Islamic employee engagement, which has stated that vigor means *mujahadah*, dedication means *itqon*, and absorption means *quwwatul azmi*, and become a proof that a construct has been formed. However, for further theoretical development, a comprehensive study regarding the essence of Islamic employee engagement is still necessary. This becomes crucial for the revolution of knowledge and practice, especially in a region or a country with a majority Muslim population.

**Keywords** Vigor (*mujahadah*) · Dedication (*itqon*) · Absorption (*quwwatul azmi*) · Individual performance

## 1 Introduction

This study attempts to explore the consequence of a concept called employee engagement, which has become an interesting topic to be studied and reviewed in the academic arena in recent years. This concept is still relatively new in the field of human resource management (HRM), which emerged since the last two decades (Rafferty et al. 2005). Employee engagement is critical for organizations, especially in building their human resources to have the enthusiasm and dedication to be willing to be engaged to their work (Bakker et al. 2004). Aside from that, through employee engagement, employees are also expected to have higher performance, have proactive attitude, and show initiatives in doing their job (Sonnentag et al. 2002). Engaged

---

N. Arifin · A. Hartono · M. Muafi (✉)

Department of Management, Business and Economics Faculty, Universitas Islam Indonesia (UII),  
Yogyakarta, Indonesia  
e-mail: [muafi@uui.ac.id](mailto:muafi@uui.ac.id)

H. K. Tjahjono

Department of Management, Economics and Business Faculty, Universitas Muhammadiyah  
Yogyakarta (UMY), Yogyakarta, Indonesia



employees will be motivated to give their best effort (Marciano 2010). (Robinson et al. 2004) stated that employees who are strongly engaged with their company will increase their performance for the benefit of the company (Luthans et al. 2010). It is also stated by Siddhanta and Roy (2010) that employee engagement can bring success for the company, one of which is through the increase of employee performance. Employee engagement can drive employees to maximize their ability in achieving the company goal, increasing performance, and minimizing their desire to leave their job and responsibility in the company.

There are several gaps that drive a number of scholars to develop the essence of employee engagement concept in Islamic perspective. First, the initial idea of forming the concept of employee engagement predominantly adheres to western principles, which are closely influenced by secular thought (separating thoughts from religion). Second, there is an assumption that the conventional employee engagement does not have an important relationship with religion (Zohar and Marshall 2000). Third, the conventional employee engagement concept is less relevant in explaining the phenomenon of degrading individual behavior which is mostly influenced by global modernization, especially in regions or countries with a majority Muslim population. One of the cases is that when the engagement of a Muslim employee towards his organization does not have any religious spirit.

In this study, the researchers believe that discussing about individual attitude (employee) will directly correlate with the values they have in behavior. The sharpness of the values will be further honed when it is influenced by religious values, in line with the value in the Qur'an and Hadith, as well as the understanding of the theologian (source of Islamic law), which teach the obligation to carry out orders and stay away from the prohibition of God (Allah). This obligation has a great influence to strengthen the spiritual values of an individual. The concept of engagement refers to the terms of involvement, commitment, passion, enthusiasm, absorption, focused effort, dedication, and energy (Schaufeli et al. 2006). (McLeod and Clarke 2009) explained that employee engagement is defined as a sense of emotional engagement to work and the organization, in which employees are motivated and able to give their best ability to help to bring success and real benefits to the organization and its goals. Employee engagement arises not only because they have to do it to get compensation or promotion, but because they care about the organization (Kruse 2012).

Studies on Islamic employee engagement have not been much elaborated by researchers in the field of HRM in explaining the phenomenon of the gap between individual attitudes and performance in various organizational settings. This is because there is still very limited literature that comprehensively examines the topic regarding Islamic employee engagement and its relationship with individual performance.

Employee engagement is defined by Schaufeli et al. (2003) as "a positive, fulfilling, work-related state of mind that is characterized by vigor (excited/very energetic), dedication (deeply involved in work), and absorption (deeply concentrated in work). Employee engagement consists of three components. First, vigor (spirit of work, being very energetic), which is called mujahadah in Islam, is a sincerity in carrying out work. A Muslim is required to show a work ethic that must be different

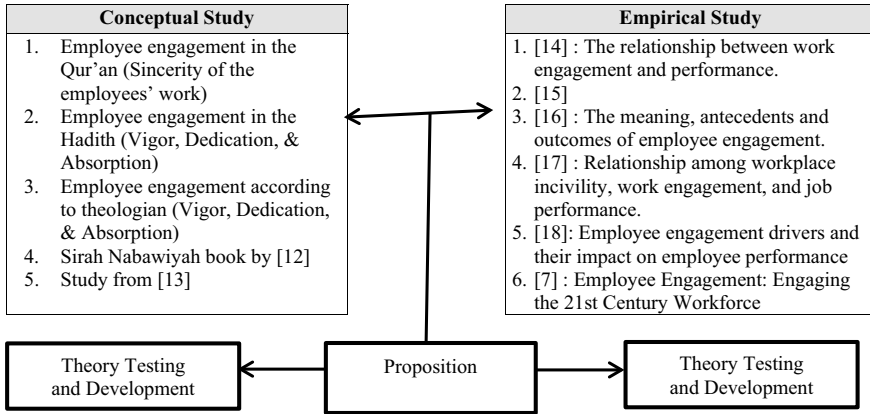


Fig. 1 Propositional framework

from other people's work attitudes. This is because of the Islamic teachings in the Qur'an and Sunnah that require individual to not only be diligent and persistent at work to get the maximum results, but also to remember values that must be achieved until the afterlife comes. It differs from the work ethic of the capitalists, which the philosophy and orientation is merely to pursue success in the world.

Second, dedication, which in the Qur'an is known as itqon. Itqon means work smart, hard, and thoroughly, the point is to work professionally and be highly dedicated. Islam teaches that work must be accompanied with expertise to get maximum efforts from every deed. Third, absorption, which in Islam is known as quwwatul azmi (strong integrity). It means as someone who has an honest personality and has a strong, consistent, as well as always stand for the right. The firm stance in holding the mandate is indicated by showing the totality of work only for seeking the pleasure of Allah (ikhlas/sincere) (Al-Husein 1918; Muafi 2021) (Fig. 1).

Kim et al. (2012) stated that there is a consequence and implication of employee engagement toward performance and HRM for organizational development. (Bailey et al. 2017) conducted a systematic review of 214 studies on the antecedents and consequences of engagement (there are 42 studies which examined its relation with performance results). They distinguished five groups of determinants of engagement, namely leadership, job design, team and organizational factors, organizational intervention, and psychological state. (Gorgievski and Moriano 2014) found that engagement is positively related to four work-related aspects: individual morale, individual task performance, organizational performance, and extra-role performance. Employee engagement plays an important role in the organization, so that it can improve individual performance and ultimately can provide job satisfaction (Garg et al. 2018). Various other aspects such as individual character as social capital shown in work determine the level of individual engagement in the organization (Wang and Chen 2019; Palupi and Tjahjono 2016; Tjahjono et al. 2019). This shows that there is still a wide area of research that requires further exploration of the

relationship between employee engagement and employee performance (Ghuman 2016), especially in the Islamic employee engagement.

Studies on Islamic employee engagement have not been explored comprehensively, and the studies are still at the level of concept and measurement development, especially regarding the influence of Islamic employee engagement on individual and organizational performance. Furthermore, in this study, the development of the concept of Islamic employee engagement will be carried out based on the Qur'an, Hadith of the Prophet Muhammad, history of Islam and the companion of the Prophet, and the opinions from theologian. This is done so that the terminology of Islamic employee engagement has a strong rationale in accordance with the Islamic teachings and can be used as a scientific concept. This study aims to analyze the components of employee engagement in Islamic perspective and its relationship with organizational performance.

## 2 Proposition

Employees who are highly engaged will be motivated to give their best efforts for the organization. On the other hand, employees with low engagement will have more desire to move from the organization, have lower job satisfaction, and have higher absenteeism (Markos and Sridevi 2010). With the influence of employee engagement on employee performance, companies will be able to increase their employee performance through efforts to increase employee engagement (Marciano 2010). (Robinson et al. 2004) stated that employees who are strongly engaged to the organization will increase their performance in their work for the benefit of the company. In this study, the influence of employee engagement on performance will be discussed.

### 2.1 *Mujahadah (Vigor) and Employee Performance*

In Islam, vigor is called as 'Mujahadah an-Nafs'; mujahadah means sincerity in doing things, while an-nafs means personal self. Therefore, 'Mujahadah an-Nafs' is sincerity in carrying out one's work through an attitude of self-control. Self-control is an attitude taught in Islam, which encourages a person to be someone who always prioritize mind and heart instead of lust (emotions), especially in working to fulfill ma'isyah (needs). It is written in the Qur'an, "And those who strive for Us, We will surely guide them along Our ways. And indeed, Allah is with the doers of good." (QS. Al-'Ankabut: 69). It is also stated that, "Indeed, Allah will not change the condition of a people until they change what is in themselves" (QS. Ar-Ra'd: 11). This verse emphasizes that every Muslim must try to change their fate if they want to get happiness in this world and the afterlife. The Prophet Muhammad stated: "An intelligent person is one who is able to control himself and do good deeds for life

after death (the afterlife)” (HR. Tirmidhi: 2383). A Muslim is required to show a work ethic that is not only diligent, persistent, loyal, and physically and mentally able to complete the job well as well as improve their performance. It differs from the work ethics of the capitalists, which all lead to a merely worldly philosophy and orientation.

P1: There is a positive influence of mujahadah (vigor) on employee performance.

## ***2.2 Itqon (Dedication) and Employee Performance***

Dedication (deeply involved in work), in the Qur'an is known as 'itqon' which means work in sincere, smart, hard, and complete. The point of itqon is to work professionally, perfectly, and highly dedicated. Islam teaches to work by expertise so that an individual can do his task totally (giving maximum efforts for every deed). Employees who show itqon in their organization will be able to work optimally and totally, thus they have better performance than other employees. Prophet Muhammad also stated: "Allah truly loves if one of you works with itqon (professionally)." (HR. Baihaqi).

P2: There is a positive influence of itqon (dedication) on employee performance.

## ***2.3 Quwwatul Azmi (Absorption) and Employee Performance***

In Islam, absorption is known as 'quwwatul azmi' (strong integrity). It means as people with integrity, namely someone who has an honest personality and a strong, consistent character, as well as a firm attitude to maintain principles. This becomes a basis that is inherent to their self as moral values. This attitude in holding the mandate is carried out by showing the totality of work which is only aimed to seek the pleasure of Allah (sincere/ikhlas) (Al-Husein 1918). When the Quraysh asked Abu Talib (the uncle of the Prophet) to stop his preaching of Islam, the Prophet Muhammad stated: "O, Uncle, by Allah, even if the sun is placed in my right hand and the moon in my left hand, so that I leave this matter (deliver the message of Islam), so that Allah wins it or I perish, I surely will not leave this matter" Sirah Nabawiyah by Al-Mubarakfuri (2011). Employees with the character of quwwatul azmi will be able to work in focus and concentrate to complete their task, so that their performance will increase.

P3: There is a positive influence of quwwatul azmi (absorption) on employee performance.

## ***2.4 Employee Engagement and Employee Performance***

Employees must have an engagement to the company in order to work optimally (Gallup 2004). Employee engagement has been perceived as a precursor to business success in a competitive marketplace, and it has become one of the determining factors for organizational success (Lockwood 2007; Muafi 2021). According to Bakker et al. (2004), engaged employees will work hard with positive thoughts, so that they can get more things done faster at work. This will improve their performance to be in line with the goals pursued by the company. Previous studies has also shown the relationship between the component of employee engagement such as vigor (enthusiasm), dedication, and absorption (highly concentrated in work) with positive work outcomes, which resulting in low levels of conflict, high performance, and positive business outcomes (Hallberg and Schaufeli 2006; Saks 2006; Schaufeli and Bakker 2004).

P4: There is a positive influence of employee engagement on employee performance.

## **3 Methodology and Approach**

Research on the influence of Islamic employee engagement on both individual and organizational factors can be carried out through quantitative approach in order to prove the propositions or hypotheses that have previously been developed. The topic of Islamic employee engagement is very relevant to be carried out within the scope of Islamic organizations which essentially operate based on Islamic law and stand for the benefit of the people. It can be aimed to understand the level of Islamic employee engagement of the organizational members, as well as to examine whether Islamic employee engagement is able to significantly influence individual and organizational activities. Furthermore, studies on the context of Islamic employee engagement will be more appropriate if it is carried out through survey method, namely by conducting direct interviews with members of the organization in order to obtain accurate and credible data in proving the research propositions or hypotheses.

## **4 Discussion and Conclusion**

This study proves that the context of employee engagement is closely related to religion. Islamic employee engagement refers to Islamic teachings whose essence of work is as an obligation of a servant by mobilizing the internal strength (heart and soul) and skills given by God to achieve life expectancy. The understanding of work in Islam must be accompanied by work ethics which are based on the following attitudes:

### 1) Sincere Work

The work ethic in working or doing deeds is based on a sincere foundation. An individual who sincerely work is based on the intention to worship Allah and not only because of humanity and worldly aspects. An individual who is sincere are well aware that his work is a manifestation of righteous deeds (good deeds), which he will reap in the afterlife. In every sincere deed of a servant (individual), he will always be moved to give the best results (performance). Although he does not get the praise from others, he would still do it consistently (*istimrar*). He does this because he realized that Allah will always watch him (*muqorobah*) at all times, and in the afterlife, all of the deeds will be held accountable by Allah.

### 2) Smart Work

Smart work is work that is based on knowledge and mature calculation. It will contribute to creativity, accurate breakthroughs, a clear management map, as well as mature and measurable concepts in every job. Allah has taught the Prophet David to work intelligently and full of professionalism. It is written in the Qur'an, "Make full coats of mail and calculate [precisely] the links, and work [all of you] righteousness. Indeed I, of what you do, am Seeing." (QS. Saba: 11). In order for employee performance to be good, it needs to be done perfectly with intelligence and prudence.

### 3) Hard Work

Hard work is work full of vitality (spirit). Hard work can also be interpreted as not easily get sluggish and discouraged while doing work, and patiently endures fatigue until the goal is achieved. There is no perfect job other than the one taken with hard work, difficulties, and often through many failures. However, no matter how many times we failed, we should keep trying, keep getting up, and not complaining. This will result in success with great performance.

### 4) Complete Work

Complete work is a total work. A complete work will become one of the benchmarks for perfect work by showing the perfection of performance. The story of the Prophet Noah who was ordered to build a ship showed that he started working from designing to bringing in the raw materials, and even taking part directly in the mega project. At that time, with all the traditional equipment, creating a large ship that is capable to sail in the middle of a storm was surely not an easy and light job. However, the Prophet Noah was able to complete a mighty ship that can face a great ark, the greatest flood of the God's punishment because he did a complete work. Allah will provide help for those who obey.

Employees who have these four dimensions will be able to create the best works for mankind. This is the work ethic in the extraordinary teachings of Islam. Therefore, it needs to be cultivated by maximizing and optimizing the work. The perfection of work with the soul is the maximum and optimal effort that becomes the principle and target of every deed that is carried out, while the perfection of the soul's deed is the maximum effort in everything that is carried out. The maximum efforts include:

(a) maximum focus; (b) maximum knowledge; (c) maximum skills; (d) maximum time; and (e) maximum consistency.

Islamic employee engagement is identical with the ability to create a more optimal and meaningful life. Various efforts can be made for a more meaningful life, such as by being serious at doing every work. This reflects a step in Islamic teachings that leads to performance achievement. The more optimal a person's efforts are, the more satisfying the results will be. The relationship between Islamic employee engagement and performance has been explained in a number of relevant studies. It is found that Islamic employee engagement has an influence on increasing individual performance. Islamic employee engagement teaches someone to always give an effort (ikhtiar), surrender (tawakkal), be sincere (ikhlas), patient, and grateful for every problem that befalls him. Islamic employee engagement makes a person mentally and emotionally strong. A number of relevant studies have been conducted to prove this relationship. However, comprehensive studies that specifically discuss about Islamic employee engagement has not been found. Studies on this topic can be said to be still relatively limited and have never been tested comprehensively to explain various phenomena in the context of individuals and organizations. Therefore, it is very important to develop the theory of Islamic employee engagement so that it can be applied in regions or countries with a majority Muslim population.

## References

- Rafferty, A.M., Maben, J., West, E., Robinson, D.: What makes a good employer? Issue Paper 3 International Council of Nurses Geneva (2005)
- Bakker, A.B., Demerouti, E., Verbeke, W.: Using the job demand-resources model to predict burnout and performance. *J. Hum. Resour. Manag.* **43**(1), 83–104 (2004)
- Sonnentag, S., Frese, M.: Performance concepts and performance theory. In: Sonnentag, S. (ed.) *Psychological Management of Individual Performance*, pp. 3–26. Wiley, Chichester (2002)
- Marciano, P.L.: *Carrots and Sticks Don't Work: Build a Culture of Employee Engagement with the Principles of Respect*. McGraw Hill, Manhattan (2010)
- Robinson, D., Perryman, S., Hayday, S.: The drivers of employee engagement (2004). [www.employment-studies.co.uk/summary/summary.php?id](http://www.employment-studies.co.uk/summary/summary.php?id). Accessed 14 Jan 2015
- Luthans, F., Avey, J.B., Avolio, B.J., Peterson, S.J.: The development and resulting performance impact of positive psychological capital. *Hum. Resour. Dev. Q.* **21**(1), 41–67 (2010)
- Siddhanta, A., Roy, D.: Employee engagement, engaging the 21st century workforce. *Asian J. Manag. Res.* (2010)
- Zohar, D., Marshall, I.: SQ - spiritual intelligence, the ultimate intelligence. In: Morgan, A. (ed.) *Book Review*. Bloomsbury (2000). <https://www.alisonmorgan.co.uk/Books/Zohar2000.pdf>
- Schaufeli, W.B., Bakker, A.B., Salanova, M.: The measurement of work engagement with a short questionnaire: a cross-national study. *Educ. Psychol. Measur.* **66**, 701–716 (2006). <https://doi.org/10.1177/0013164405282471>
- McLeod, D., Clarke, N.: *Engaging for success: enhancing performance through employee engagement* (2009)
- Kruse, K.: *Employee engagement 2.0 from Amazon.com* (2012)
- Al-Mubarakfuri, Shafurrahman, S.: *Sirah Nabawiyah*. Umul Qura, Jakarta (2011)
- Schaufeli, W.B., Demerouti, E., Bakker, A.B., De Boer, E.: Job demands and job resources as predictors of absence duration and frequency. *J. Vocat. Behav.* **62**, 341–356 (2003)

- Kim, W., Kolb, J.A., Kim, A.: The relationship between work engagement and performance: a review of empirical literature and a proposed research agenda. *Hum. Resour. Dev. Rev.* **12**(3), 248–276 (2012)
- Gorgievski, M.J., Moriano, J.A.: Relating work engagement and workaholism to entrepreneurial performance. *J. Manag. Psychol.* **29**(2), 106–121 (2014)
- Bailey, C., Madden, A., Alfes, K., Fletcher, L.: The meaning, antecedents and outcomes of employee engagement: a narrative synthesis. *Int. J. Manag. Rev.* **19**(1), 31–53 (2017)
- Wang, C., Chen, H.: Relationship among workplace incivility, work engagement, and job performance. *J. Hosp. Touri.* (2019). <https://doi.org/10.1108/JHTI-09-2019-0105>
- Ghuman, K.: A prognostic examination of functional and emotional employee engagement drivers and their impact on employee performance. *Bus. Rev.* **5**(2), 78–87 (2016)
- Al-Husein, A.: *Shahih Muslim*. Kairo, Dar al-Kutub (1918)
- Garg, K., Dar, I.A., Mishra, M.: Job satisfaction and work engagement: a study using private sector bank managers. *Adv. Dev. Hum. Resour.* **20**(1), 58–71 (2018). <https://doi.org/10.1177/152342317742987>
- Palupi, M., Tjahjono, H.K.: A model of religiosity and organizational justice the impact on commitment and dysfunctional behavior. In: *IBIMA Proceedings, Milan, Italy*, pp. 1781–1790 (2016)
- Tjahjono, H.K., Fachrunnisa, O., Palupi, M.: Configuration of organizational justice and social capital their impact on satisfaction and commitment. *Int. J. Bus. Excell.* **17**(3), 336–360 (2019)
- Markos, S., Sridevi, M.S.: Employee engagement: the key to improving performances. *Int. J. Bus. Manag.* **5**(12), 89–96 (2010)
- Gallup: Employee engagement index survey. *Gallup Manag. J.* (2004)
- Lockwood, N.R.: *Leveraging Employee Engagement for competitive advantage; HR's Strategic Role Society for Human Resource Management (SHRM Research Quarterly Report)*. Society for Human Resource Management, Alexandria (2007)
- Hallberg, U.E., Schaufeli, W.B.: “Same same” but different? Can work engagement be discriminated from job involvement and organizational commitment? *Eur. Psychol.* **11**(2), 119–127 (2006)
- Saks, A.M.: Antecedents and consequences of employee engagement. *J. Manag. Psychol.* (2006)
- Schaufeli, W.B., Bakker, A.B.: Job demands, job resources and their relationship with burnout and engagement: a multi-sample study. *J. Organ. Behav.* **25**, 293–315 (2004)
- Muafi, M.: Investigating the dimensionality of work life balance in Islamic (Wlbp): an Insight from Indonesia. *J. Islam. Bus. Manag.* **11**(01), 198–216 (2021)



# Political Marketing of Muslim Minority Candidates in the Bali Legislative Election



Nur Sofyan, Naili Farida, Rina Martini, and Dewi Erowati

**Abstract** The political marketing of Muslim minority candidates in the 2019 Bali legislative election presents a slick political contestation. The 2019 legislative election is the last in Indonesia before another legislative election in 2024. Bali with the title “Bali Dwipa Jaya” which means Long live the island of Bali. The Bali motto reflects the Hindu community. Religion has not prevented the presence of Muslim minorities in the 2019 Bali legislative election. Minority Muslim candidates represent Balinese Muslims who can fight for and promote a sense of togetherness. This indicator is the basis for the assessment with a qualitative study approach through the case study method. The purpose of this study is to dig deeper into the political marketing of Muslim minority candidates in the 2019 Bali legislative election. The reputation of Muslim minority candidates makes the community a communication partner. Society has a form of moral hazard which is carried out politically. In essence, the candidates for the Balinese Muslim minority formed a political escalation that was conducive to avoiding a political plutocracy and encouraging political assimilation. This action calls for the coffers of the Balinese people’s trust in the Muslim minority. The belief in the Balinese Muslim minority is not only based on Muslims but also throughout society in Bali.

**Keywords** Muslim minority candidates · Legislative election · Bali

## 1 Background

At the 2019 Legislative Election in Bali, the political marketing of Muslim minority candidates received a positive response. The 2019 legislative election is Indonesia’s last before the legislative elections are held again in 2024. The use of political marketing for Muslim minority candidates in Bali is a step toward building image

---

N. Sofyan (✉) · R. Martini · D. Erowati  
Department of Politic and Government, Universitas Diponegoro, Semarang, Indonesia  
e-mail: [nursofyan@students.undip.ac.id](mailto:nursofyan@students.undip.ac.id)

N. Farida  
Department of Business Administration, Universitas Diponegoro, Semarang, Indonesia

and popularity (Aziz 2008). Personal political marketing is defined as soliciting political ideas, political issues, political initiatives, political ideologies, and future work programs (Kango 2014). Because politics cannot be separated from religion, the political marketing of these Muslim minority candidates is constructively covered in an understanding of Islam. It is undeniable that Islam's radical, extreme, and terrorist perception affects the success of Muslim politics in Bali. The Bali Bombing incident in 2002 continues to be a source of concern for Muslim minority candidates, resulting in the emergence of a terrorism mindset and a travel warning for Balinese Muslims (Dhurorudin Mashad 2014).

This stereotype harms the image of Muslim minority candidates in Bali, making it difficult to win. According to Dewi Erowati, Muslims have not been able to stand firm in building a political image throughout the historical experience (Erowati 2016). This shows the strength of Bali's Hindu majority against the minority (Helmiati 2016). Examining the unpredictability of Bali's political dynamics makes it difficult to place minorities in political seats (Andrei 2018). Seeing how the majority of Hindus always won during the Pilleg in Bali. I Wayan Sudiarta stipulates based on the General Elections Commission Number: 44/SK/KPU/2004 concerning the General Election Results for Members of the People's Representative Council, Regional Representative Council, and Regional People's Representative Council in 2004 with 245,343 valid votes, Nyoman Rudana came in second with 157,475 valid votes, Drs. Ida Bagus Gede Agastia came in third with 131,780 valid votes and Drs. Ida Ayu Agung Mas came in fourth with 123,961 valid votes (Detiknews 2004).

This is intended to demonstrate how dynamic the Hindu majority's political power is in Bali. The Hindu majority in Bali wields considerable political power. The circle of political power represents a more significant portion of political win through culture. In the 2009 Pilleg, the majority of voters prevailed. As stated in the General Election Commission's (KPU) Decision Number: 255/Kpts/KPU/2009 concerning the Determination and Announcement of General Election Results for Members of the House of Representatives, Regional Representatives Council, Provincial Regional People's Representative Council, and National Regency/City Regional People's Representative Council In the 2009 General Election, I GN Kesuma Kelakaran was ranked first with 218,100 valid votes, I Wayan Sudirta was ranked second with 132,320 valid votes, I Kadek Arimbawa was ranked third with 129,740 valid votes, and I Nengah Wiratha was ranked fourth with 125,980 valid votes (General Election Commission 2009).

The manifestation of the Balinese Hindu majority's victory is increasingly progressive compared to the Muslim minority's bleak political representation. The Hindu majority's victory is based on friendship, culture, and trust between each political candidate (Segel et al. 2017). The reflection of the Hindu majority community's success cannot be separated from Bali's thick social life, making the position of others the smallest coloring part (Arifuddin Ismail 2010). The Hindu majority won the Bali Legislative Election in 2014, as evidenced by the Decree of the Indonesian General Elections Commission (KPU) Number: 417/kpts/KPU/2014 concerning the Determination of the Elected Candidates for Members of the Regional Representatives

Council in the 2014 General Election, which stipulates AA NGR Oka Rahmadani with 150,288 votes (General Election Commission 2014).

Moreover, the Muslim minorities have not been precluded from being represented in Bali's political arena. Based on a sense of unity, Muslim minorities can compete competitively with Hindu majority candidates. During the 2019 Legislative Elections, the beginning of a representative that Balinese Muslims had hoped for and bringing a new political history contributed to providing new treasures for the political dynamics in the Province of Bali. It is established in the Decree of the General Elections Commission (KPU) of the Republic of Indonesia Number: 1319/PL.01.9-Kpt/06/KPU/VIII/2019 concerning the determination of the elected candidates for members of the Regional Representatives Council in the 2019 General Election, which states that Dr. Shri IG N Arya Wedakarna MWS, SE (M.TRU)., M.Si, which ranked first with 742,781 valid votes, Drs. Made Mangku Pastika, M.M. with 269,270 valid votes, placed second, Anak Agung Gde Agung, S.H. with 229,675 valid votes, was in third place, and H. Bambang Santoso with 126,100 valid votes was in fourth place. (General Election Commission 2019).

The presence of Muslim minority candidates in the Bali Legislative Election exemplifies the people's unity in Bali. This paper aims to examine and investigate the personal political marketing of Muslim minority candidates to win the Legislative Election in Bali in 2019. The study begins with analyzing Balinese Muslim minority candidates' political marketing as a form of genuine trust-building. The following study focuses on the political marketing of Muslim minority candidates who can strengthen the identity of Islamic values in the face of intense political competition for most Balinese Hindus.

The rest of this article is structured as follows. Section 2 explains the analytical framework, including the theoretical approaches such as political marketing and political candidates from Muslim minorities. Research methods and measurements are described in Sect. 3. Section 4 presents findings and discusses the empirical results, while Sect. 5 concludes.

## **2 Theoretical Approaches**

### ***2.1 Political Marketing***

Political marketing can be defined as a marketing concept and technique (Harmes 2016). Without realizing it, Political Marketing began to be noticed and adopted by all audiences involved in the political world (Darren and Jennifer 2005). The origins of political marketing can be traced back to business marketing to re-establish public support in a political campaign (Darren and Jennifer 2005). Maarek's perspective on Political Marketing is a global approach to designing and delivering political messages (Mensah 2007). Political Marketing is a process of exchanging, forming,

maintaining, and improving relationships between political actors (political candidates, political parties, interest groups, and political institutions) and voters (Simons 2020a,b). According to Oliver et al., the practice of Political Marketing seeks to establish, maintain, and strengthen long-term voter relationships that benefit political candidates, thereby achieving the parties' objectives (Freestone and McGoldrick 2007).

The relationship implies the worth of political messages exchanged between political candidates and voters in tangible and intangible forms (Simons 2020a,b). Ormrod also offers a perspective on the concept of political marketing, stating that political marketing is a viewpoint that facilitates the exchange of political values in the election market. None other than a political communication framework to attract, persuade, and influence the targeted population. Political marketing aims to identify the need for political leadership that supports political candidates in their delivery of political messages. Attempts to establish and maintain political relations with the target necessitate focus and careful planning. The plan from political marketing can take the form of political advertising, gathering with leaders, and organizing special events based on the local community's culture.

The academic literature builds a strong case for the importance of marketing to business perspectives (Kharima 2014). This viewpoint argues that actors should have a management strategy that focuses on gaining a competitive advantage through greater customer value delivery (Darren and Jennifer 2005). Especially in a political marketing tool facilitates image creation, problem identification, voter targeting, and timing. Some of these elements are critical to the political marketing process. In order to launch election wins, political marketing relies on rationality to adjust supply and improve performance (Bendle and Cotte 2016). Reflecting the rationality of political messages shaped by political marketing, the candidate's political ideology structure should embrace the logic and new perspectives of society (Butler and Harris 2009). Political marketing like this must be shown and shown to the public to defend and justify all activities of political candidates, resulting in a positive image (Butler and Harris 2009). A good democracy is built on good marketing (Butler and Harris 2009). This has become a tool for increasing public trust in political candidates (Andrei 2018). In a business-to-business context, marketing and performances, and consequences arising from use that facilitate (or block) achieving the interest's goals and business relationships among political candidates (Butler and Harris 2009).

When dealing with the democratic process, the factors and principles of political candidate tendencies must be considered for the success of political marketing (Andrei 2016). Curiosity should be heightened in developing political candidates' strategic roles through political market orientation. Political marketing implies offering to voters, so the components are interconnected and cannot be offered separately (Bruce 1999). Many such deals are distinguished by the product, promotion, price, and placement (Kharima 2014). First, in this marketing, the product is positioned on political candidates based on ideas prepared by identity, ideology, work programs, and political promises to produce positive political performance through promotional schemes. Second, to achieve the desired ideas, this promotion must convey ideas through supporting media. Third, in political marketing, such a price is

intended to tend to psychological creation so that voters have a positive image and a sense of comfort with the ideas submitted by political candidates. Fourth, placement is a method for political candidates to be present in society as marketing communication for ideas that have been prepared to achieve maximum win results (Kharima 2014). According to Firmanzah's perspective in his book "Political Marketing Between Understanding and Reality," Political Marketing helps political candidates package political messages in the form of advertisements by paying attention to market orientation, competitors, and voters (Firmanzah 2008). Political marketing aims to convey messages and position voters as subjects, formulate voter problems in developing work programs, and maintain voter relationships with political candidates (Aziz 2008).

The use of political marketing places voters as a way to win political candidates and a community engagement tool (Aziz 2008). Firmanzah reiterated that the function and application are divided into two (two) aspects: first, it serves as a distribution medium and facilitates public participation in obtaining information about the political world (Firmanzah 2008). Second, it serves as a method of community political education. The Political Marketing Cycle enhances consistent political parties and candidates. Political marketing partisanship involves several steps such as determining the market, product design and adjustment, implementation, communication, campaigning, election, and delivery to support the win of political parties and candidates in political contestation (Darren and Jennifer 2005).

Political marketing aims not to increase political participation but to win elections (Davidson 2013). Not only that, but political marketing must pay attention to advancements in the communication process, one of which is supporting media as the flow of political messages changes significantly. It has been observed that media developments are becoming more fragmented. When voters pay attention to the public affairs of political candidates, political marketing is successful (Lynda and Christina 2008). Achieving the big win of political candidates takes time and requires necessary steps so that marketing can be essential and relevant to the creation, maintenance, and understanding of political exchange (Darren and Jennifer 2005).

## ***2.2 Political Candidates from Muslim Minorities***

Minorities, according to Indriana Kartini, are a group of people who are separated from community groups due to differences in physical characteristics, culture, beliefs, and thoughts (Kartini 2000). Minorities mainly focused on Muslim minority political candidates who advance in a political contest. A political candidate competes in a political contest to gain voter support to gain a seat in parliament (Pedrazzani and Pinto 2016). Not only that, and yet political candidates must also cultivate a personal reputation. A political candidate's reputation is determined by his or her characteristics and behavior when interacting with voters (Pedrazzani and Pinto 2016). His pleasant personality and closeness to the community make him an easy-to-win political candidate.

According to Tavits, political candidates who prioritize political specialization tend to be more independent and easily persuade voters to vote for them Pedrazzani and Pinto (2016). Political candidates must be aware of the trend of political personalization (Pedrazzani and Pinto 2016). Every political candidate must present the most recent efforts to open dialogues between the minority and the majority to reduce the existing gaps. None other than this is intended for Muslim minority political candidates seeking moral, physical, and financial support from the community. To integrate with the community, Muslim minority political candidates strive for and prioritize Islamic values.

### 3 Research Methodology

This study employed a multi-method approach. According to Gun-Gun Heriyanto and Shulhan Rumuru, the approach combines qualitative and quantitative approaches (Sofyan 2016). When compared to using only one approach, the combination of approaches encourages reliable new findings (Gun and Shulhan 2013). According to Jane Ritchie and Jane Lewis in their book “Qualitative Research Practice A Guide for Social Science Students and Researchers,” these two approaches, qualitative and quantitative, have different characteristics, but when used together, they can produce solid research results (Jane and Jane 2003). This approach emphasizes the qualitative approach first, leading to a case study of the success of Muslim minority candidates in the 2019 Legislative Election in Bali, while the quantitative approach is used as a supplement to strengthen the study’s results. Post-positivism is a paradigm used in research that emphasizes problems in reality that are holistic, dynamic, complex, mutually influencing, meaningful, and valuation.

According to Burhan Bungin, post-positivism is the strategic view of scientists in determining the value of science (Burhan Bungin 2007). According to Norman K. Denzine and Yvonna S. Lincoln, the paradigm is post-positivism, a collection of fundamental beliefs dealing with peak principles (Norman and Yvonna 2009). The flow of knowledge used to fight for and develop knowledge is closely related to the paradigm. The data analysis technique used in this study is pattern matchmaking analysis. According to Robert K Yin, the pattern matchmaking analysis technique is a pattern that compares empirical events with existing patterns (Robert 2013). This study employs a single descriptive case study of a Balinese Muslim minority candidate figure interested in unique value. The analysis performed can be relevant to the pattern of specific variables determined before data collection (Robert 2013).

## 4 Findings and Discussion

### 4.1 *Political Marketing of Bali Muslim Minority Candidates as a Strategy of Building Trust*

In Bali, Muslim minority candidates are built through political marketing that focuses on religious plurality rather than gender issues. The presence of a Balinese Muslim minority candidate has also contributed to enriching the discourse on Islam and Hinduism in Bali. Balinese Muslim minority candidates weave political marketing together by emphasizing a sense of trust. Bali represents Hinduism's attachment to the Balinese community system. Religion, customs, and culture shape the dimensions of Balinese society (Putra 2011). Each district in Bali embodies the motto that drives the vast Hindu majority religion. According to data from the Bali Province Central Statistics Agency, the population of Bali is 4,317,404 people (Bali Province Central Statistics Agency 2021). Especially given the fact that there are 520,244 Muslims in Bali, spread across the districts of Jember, Tabanan, Badung, Gianyar, Klungkung, Bangli, Karangasem, Buleleng, and Denpasar (BPS Province of Bali 2018). The spread of Balinese Muslims demonstrates that Muslims are beginning to emerge in various parts of Bali. The number of Balinese Muslim minorities leads to a cultural candidate for the Balinese Muslim minority that coexists with the Hindu majority's culture. Balinese Muslim minority candidates appear to be capable of limiting Hindus' political win in Bali. The segmentation of Balinese Muslim minority candidates improves the Balinese people's situation, which is based on a spirit of togetherness (Suacana 2011). The impact of the birth of togetherness among people in Bali is wrapped in a service based on the notion of trust in the Balinese Muslim minority candidates. In Bali, social interactions demonstrate togetherness (Ismail 2017). Togetherness in forming essential trust in a legislative election (Pileg) ensures that Bali Muslim minority candidates are elected to parliament, allowing them to attract a diversity of people through dialogue spaces to solve problems between people in Bali (Regional Office of the Ministry of Religion of Bali Province 2018).

The emergence of a cooperative orientation results in forming a harmonious, peaceful, and intelligent society founded on faith and piety in the pursuit of harmony. This is consistent with Naya Sujana's research findings, which found that the Balinese people are religious, compact, open, moderate, friendly, and flexible (Suacana 2011). The diversity of Balinese society offers a moderate and sustainable personal political marketing strategy. The political reality of the increasingly progressive Muslim minority candidates in Bali suggests that Muslims are overcoming deep trauma caused by the Bali bombing and other issues that hit the identity of Muslims, such as terrorists, racists, extremes, and radicals. Since the candidate for the Balinese Muslim minority has been crawling back to mingle and interact with all of Bali's people, this demonstrates that the candidate figure of the Balinese Muslim minority is developing political goals within the scope of the family, community, and the general public in the province of Bali (Made et al. 2018). A series of political marketing interactions for Balinese Muslim minority candidates occur at religious,



social, and cultural events prevalent in Bali. The proliferation of religious activities in the public space shows candidates from the Muslim minority in Bali becoming more confident with the expression of religious organized in attempting to fill the role of bargaining political event Legislative Elections (Pileg) 2019 (Made et al. 2018).

The political contestation elevates the Balinese Muslim minority's ability to harmonize and balance politics in Bali. Bali Muslim minority candidates did not miss out on the opportunity to pursue in the election due to the support of the Bali Province MUI (Indonesian Ulema Council). The Muslim minority candidates appeared to be given a political platform right away to unite Bali's people. Balinese Muslim minority candidates' political marketing to the Balinese people is intended to cultivate genuine trust in Muslim candidates. This is inextricably linked to the concept of political marketing, which is summarized in several aspects, including First, the product in this marketing is positioned on Muslim minority candidates on ideas that are prepared for identity, ideology, work programs, and political promises to produce positive political performance through schemes of promotion.

The Muslim minority candidate has never been in a party and is purely a community worker. They have come forward as a Muslim minority candidate based on the Bali Provincial MUI Regional Meeting; they embrace and are accepted by all groups. They have experience in 13 community organizations, according to the four facts about the Muslim minority candidate (Towards Bali Satu 2019a). Not only that, but Muslim minority candidates present a political image in which the candidate is the only Muslim figure in the Bali constituency who has advanced in political contestation due to the high participation and aspirations of Muslims, wants to fight for and maintain the harmony that has existed for hundreds of years, does not represent the group, but represents the Balinese people (Towards Bali Satu 2019a). Second, to achieve the desired ideas, this promotion must convey ideas through supporting media. This promotion is carried out through YouTube, Facebook, and direct contact with all people in Bali.

Minority candidates have visited Balinese people using the door-to-door concept, which various political candidates with the elderly frequently use as their target group. Furthermore, Muslim minority candidates launch through digital media, the majority of which are actively used by teenagers and adults, making it easy to win a Muslim minority candidate. Third, in political marketing, this price is intended to create a positive image and a sense of comfort among voters about the ideas presented by Muslim minority candidates. As Muslim minority candidates must issue this price in Bali, both in the form of advertisements and assistance to the community in order to attract the community's attention, and the community is comfortable, helped, and open to the presence of a Muslim minority candidate who is advancing in the election 2019. This activity involves an active Muslim minority candidate creating posters and videos as a venue for political candidates to advertise. Responding to issues in society is frequently done by Muslim minority candidates so that the advertisements carried out can be supported by the community's views as intellectuals who pay attention to the Balinese people's concerns. Fourth, placement is a method for political candidates to be present in society to deliver ideas that have been prepared to achieve maximum win results (Kharima 2014). As stated in the third aspect of political marketing, As



a result, Muslim minority candidates in Bali are attempting to reduce the differences between the minority and majority so that they can freely approach and plan the votes of voters on Bali during the 2019 Legislative Elections.

#### ***4.2 Personal Political Candidate Marketing of Muslim minorities to Strengthens Political Competition***

Muslim minority candidates present themselves as *khodimul ummah*. This interpretation positions Muslim minority candidates as mediators and unifies all people in Bali. Based on the track record of Balinese Muslim minority candidates who are actively involved in addressing problems in Bali. Muslim minority candidates want all people in Bali to grow and coexist. This is also intertwined and can indirectly heed Islamic values in strengthening the identity of Balinese Muslim minority candidates for investment in the 2019 Legislative Election (Pileg). Social capital is also a stage that aids in the delivery of the candidate's desired political message. Balinese Muslim minority toward all people in Bali, namely, first and foremost, Muslim minority candidates carve a track record in Balinese society for all behaviors and actions, both in the form of achievements and occurrences. Muslim minority candidates are using none other than this to advance in the political arena.

Muslim minority candidates exemplify the Balinese spirit of hard work, quality, thoroughness, and sincerity. This thought serves as a rallying cry for all minorities in Bali to have representatives in the government. In Bali, Islamic values are transformed by a rich culture. The candidate for the Muslim minority in Bali shows that the Muslim minority has a positive place in the Hindu majority's win. Muslims in Bali are capable of effectively responding to the demands of a changing political situation. Muslims can integrate Islamic values in the Hindu majority, allowing people to give and receive from one another (Pageh 2018). Balinese Muslims make Islamic values unique by winning elections in political contests and promoting Islamic values in the community. Most votes might come to Muslim candidates in Bali's legislative election campaign (Sofianto 2020). For the 2019 Bali Legislative Elections, Muslim minority candidates can use this win as a benchmark.

In political marketing communication studies, the phenomenon of Muslim minorities excelling in political contestation with the Hindu majority is a one-of-a-kind phenomenon to observe and study. The novelty of political marketing demonstrated by Muslim minority candidates in Bali dressing up Islam has become an instrumental exploration in building trust among most Hindus. According to Muhammad Quraish Shihab, Islam does not conflict with politics, and politics can be found in Islamic teachings (Najwa Shihab 2017). Bali Muslim minority candidates compose politics to benefit the people of Bali as a whole (Najwa Shihab 2017).

During the intense competition between Hindu majority candidates advancing in the Legislative Election (Pileg) in Bali, Muslim minority candidates appear to

form several methods to establish and strengthen Islamic values' identity. The political marketing of the Muslim minority candidate is more focused on the Balinese Muslim minority candidate. Including the involvement of the Chair of the Indonesian Mosque Council (DMI) of Bali Province for two terms, Chairman of the Bali Province MUI, Muhammadiyah Regional Manager of Bali Province, Takmir of Baitul Makmur Monang-Maning Mosque, Trustees of Fajr Friends of Bali, BLK Martyrs Mosque, Masjid Al-Hikmah, Chairman of the Trustees of the Al-Ijabah Mosque, Al-Ikhwa Mosque Al-Mutahabbun, Al-Ghony/Aisyah Mosque, and Chairman of the Trustees of the Hasanuddin Mosque (Menuju Bali Satu 2019b). This is done to create the impression that the Muslim minority candidate can be trusted as a representative of Balinese Muslims, which will lead to a broader political offer as a representative of all people in Bali. Second, the Balinese Muslim minority candidate leads efforts to unite the people by sacrificing outwardly to achieve Bali's unity.

This also contributes to the formation of the Balinese Muslim minority candidate's image in the view of the Balinese people, for example, as a Bali peace delegation, media, delegates of goodwill preachers and pioneers of the moderate Islamic movement, communication provider, mediator of issues in Bali, and people's representatives working in collaboration with state officials ( Menuju Bali Satu 2019b). The social capitals amassed by Muslim minority candidates also serve as a solid foundation for delivering Muslim minority candidates to the gates of the Legislative Elections (Pileg), where they can be added value in voter referrals to ensure that Muslim minority candidates are worthy of representing and embracing all people in Indonesia. Not only focused on Muslims but also Muslim minority candidates, as a service to the people for all people in Bali to maintain the dignity of togetherness.

Muslim minority candidates construct on the development of a true Islamic identity. This identity's social construction is always inextricably linked to the context of the political contestation in Bali. The formation of Islamic identity in Bali is an effort to identify the Muslim minority candidate to address the stigma that separates the minority community from the majority community in Bali. The proof of the political marketing concept used by Balinese Muslim minority candidates can lead to success over hoping for three (three) periods of the Legislative Elections (Pileg), which political candidates from the Hindu majority always win. By incorporating Islamic values into all activities carried out by Muslim minority candidates in the 2019 Legislative Election (Pileg), the various social capitals provided by Muslim minority candidates in the 2019 Legislative Election (Pileg) can achieve political goals. According to reports, it is found that the Muslim minority candidate can embrace the entire community in Bali as a unit in maintaining true togetherness.

## 5 Conclusion

Political marketing of Muslim minority candidates in the 2019 Bali Legislative Election reveals new treasures for political contestation. Intense political competition with the Hindu majority community necessitates mature political bargaining positions for

Muslim minority candidates. The proliferation of religious activities in public spaces shows that the Muslim minority candidate Bali is becoming more confident in its religious expression of bargaining in political contestation 2019. These four facts about Muslim minority candidates, namely never being in a party and solely serving or working for the community, advancing as a Muslim minority candidate on the decision of the Bali Provincial MUI Regional Meeting, and embracing and being an activist for the community, help to alleviate deep trauma caused by bombings in Bali. Muslim minority candidates have consistently stated that candidates from minority communities deserve to represent and embrace all people in Bali. Not only for Muslims but also for Muslim minority candidates, they place it as a service for the people of all Balinese people in order to maintain the dignity of togetherness.

Like other research, this study is also not without its limitations, such as the identification of political candidates' study was completely based on using only one approach in a specific actor group. For further research, multiple descriptive case studies of Balinese Muslim minority candidates are actually powerful, can obtain a few assessments that broad interpretation of political marketing theory. Here, this contributes to the existing literature on the political marketing of Muslim minorities.

## References

- Andrei, C.: Romania's total war: how political marketing strategies work in a democratization process. *J. Polit. Mark.* **15**(2–3), 240–258 (2016)
- Andrei, C.: The political marketing of broken trust. *J. Polit. Mark.* **17**(2), 176–192 (2018)
- Arifuddin, I.: Refleksi Pola Kerukunan Umat Beragama (Fenomena Keagamaan di Jawa Tengah, Bali, dan Kalimantan Barat). *Analisa* **17**(2), 175–186 (2010)
- Aziz, N.L.L.: Peran Marketing dalam Dunia Politik. *Mark. Politik* **5**(1), 127–137 (2008)
- Bendle, N., Cotte, J.: Assumptions of rationality in political marketing: the case of the republican autopsy. *J. Nonprofit Public Sect. Mark.* **28**(1), 66–83 (2016)
- BPS Provinsi Bali (2021). <https://bali.bps.go.id/statictable/2021/04/12/173/beberapa-karakteristik-penduduk-provinsi-bali-menurut-kabupaten-kota-hasil-sensus-penduduk-2020.html>. Accessed 21 Aug 2021
- BPS Provinsi Bali (2018). <https://bali.bps.go.id/statictable/2018/02/15/33/penduduk-provinsi-bali-menurut-agamayang-dianut-hasil-sensus-penduduk-.html>. Accessed 21 Aug 2021
- Bruce, I.N (ed.): *Handbook Political Marketing*. Sage Publication, Thousand Oaks (1999)
- Burhan, B.: *Metodologi Penelitian Kualitatif: Komunikasi, Ekonomi, dan Kebijakan Publik Serta Ilmu Sosial Lainnya* (Kencana (Ed.); kedua). Kencana, Jakarta (2007)
- Butler, P., Harris, P.: Considerations on the evolution of political marketing theory. *Mark. Theory* **9**(2), 149–164 (2009)
- Darren G., Jennifer L.M.: *Political Marketing a Comparative Perspective* (M.U. Press (ed.) Handbook). Manchester University Press (2005)
- Detiknews (2004). <https://news.detik.com/berita/d-155507/inilah-nama-nama-dpd-yang-masuk-ke-senayan>. Accessed 20 Aug 2021
- Dhurorudin, M.: *Muslim Bali: Mencari Kembali Harmoni Yang Hilang* (Al-Kautsar (ed.) Cetakan I). Pusataka Al-Kautsar, Jakarta (2014)
- Erowati, D.: Islam Liberal Di Indonesia (Pemikiran Dan Pengaruhnya Dalam Pemikiran Politik Islam Di Indonesia). *Jurnal Ilmiah Ilmu Pemerintahan* **2**(2), 18–32 (2016)

- Firmanzah, M.P.: *Marketing Politik Antara Pemahaman dan Realitas* (Yayasan Obor Indonesia (ed.) Edisi Rev). Yayasan Obor Indonesia (2008)
- Freestone, O.M., McGoldrick, P.J.: Ethical positioning and political marketing: the ethical awareness and concerns of UK voters. *J. Mark. Manag.* **23**(7–8), 651–673 (2007)
- Gun, G.H., Shulhan, R.: *Komunikasi Politik Sebuah Pengantar* (Ghalia Indonesia (ed.) Pertama). Ghalia Indonesia (2013)
- Harmes, A.: Political marketing in post-conflict elections: the case of Iraq. *J. Polit. Mark.* **19**(3), 201–232 (2016)
- Helmiati, M.A.: Pergulatan Minoritas Muslim Thailand Menelisk Peran Akademisi, Tokoh Agama LSM dalam Upaya Mencari Solusi Konflik Berkepanjangan **1**(4), 1–50 (2016)
- Ismail, F.A.N.: Minoritas dan Politik Perukunan (FKUB, Ideologi Toleransi dan Relasi Muslim-Kristen Aceh Tamiang). *Substantia* **19**(1), 53–74 (2017)
- Jane, R., Jane, L. (eds.): *Qualitative Research Practice a Guide for Social Science Students and Researchers* (Cetakan I). Sage Publications, Thousand Oaks (2003)
- General Election Commission (2019). Keputusan Komisi Pemilihan Umum RI Nomor: 1319/PL.01.9-Kpt/06/KPU/VIII/2019 Tentang Penetapan Calon Terpilih Anggota Dewan Perwakilan Daerah dalam Pemilihan Umum tahun 2019. [https://jdih.kpu.go.id/data/data\\_kepkpu/KPT1319THN2019.pdf](https://jdih.kpu.go.id/data/data_kepkpu/KPT1319THN2019.pdf). Accessed 20 Aug 2021
- General Election Commission (2014). Keputusan Komisi Pemilihan Umum RI Nomor: 417/kpts/KPU/Tahun 2014 Tentang Penetapan Calon Terpilih Anggota Dewan Perwakilan Daerah dalam Pemilihan Umum tahun 2014. [https://jdih.kpu.go.id/data/data\\_kepkpu/SK\\_KPU\\_417\\_Penetapan\\_calon\\_terpilih\\_DPD\\_1452014.pdf](https://jdih.kpu.go.id/data/data_kepkpu/SK_KPU_417_Penetapan_calon_terpilih_DPD_1452014.pdf). Accessed 20 Aug 2021
- Kango, A.: *Marketing Politik dalam Komunikasi Politik*. *Marketing Politik Dalam Komunikasi Politik* **11**(1), 52–65 (2014)
- Kartini, I.: *Dinamika Minoritas Muslim di Amerika Serikat*. *Jurnal Penelitian Politik* **20**(1), 97 (2000)
- Kharima, A.G.: *Strategi Pemasaran Politik (Political Marketing) Dpc Partai Gerindra Kota Semarang Dalam Pemilu Legislatif Tahun 2014*. Departemen Politik dan Pemerintahan (2014)
- General Election Commission (2009). Keputusan Komisi Pemilihan Umum Nomor: 255/Kpts/KPU/Tahun 2009 Tentang Penetapan dan Pengumuman Hasil Pemilihan Umum Anggota Dewan Perwakilan Rakyat, Dewan Perwakilan Daerah, Dewan Perwakilan Rakyat Daerah Provinsi, dan Dewan Perwakilan Rakyat Daerah Kabupaten/Kota. <https://www.kpu.go.id/dmdocuments/DPD.pdf>. Accessed 20 Aug 2021
- Lynda, L.K., Christina, H.B.: *Political marketing*. In: *Political Communication* (hal. 858). Sage Publications (2008)
- Made, I.G., Suta, A., Dewi, K.S.: *Dinamika Politik Identitas Masyarakat Muslim Bali Pada Pilgub Bali Tahun 2018*. *Jurnal Pemikiran Dan Penelitian Sosiologi* **3**(1), 40–57 (2018)
- Mensah, K.: Kwame Nkrumah and political marketing: locating campaign strategy in modern political campaigning. *J. Pan Afr. Stud.* **1**(8), 93 (2007)
- Norman K.D., Yvonna S.L.: *Handook of Qualitative Research: Sebuah Terjemahan (Pustaka Pelajar (ed.) Terjemahan)*. Pustaka Pelajar, Yogyakarta (2009)
- Pageh, I.M.: *Kearifan Sistem Religi Lokal dalam Mengintegrasikan Umat Hindu-Islam di Bali*. *Jurnal Sejarah Citra Lekha* **3**(2), 88 (2018)
- Pedrazzani, A., Pinto, L.: *The Study of Political Candidates*, June 2016. <https://www.researchgate.net/publication/302027207>
- Kantor Wilayah Kementerian Agama Provinsi Bali: *RENSTRA Kantor Wilayah Kementerian Agama Provinsi Bali Tahun 2015–2019*. In *Kantor Wilayah Kementerian Agama Provinsi Bali* (2008)
- Putra, I.N.D.: *Politik Identitas dalam Teks Sastrawan Bali*. *Jurnal Kajian Bali* **1**(1), 124–151 (2011)
- Robert, K.Y.: *Studi Kasus Desain dan Metode* (Raja Grafindo (ed.)). Raja Grafindo, Jakarta (2013)
- Segel, I.K.E., Azhar, M.A., Noak, P.A.: *Mobilisasi Massa Melalui Tajen Dalam Pemilihan Umum Legislatif Tahun 2014 Di Kabupaten Tabanan*. *E-Jurnal Politika* **1**(1), 1–13 (2017)
- Simons, G.: *Consistency and change in political marketing*. *J. Polit. Mark.* **19**(4), 1–4 (2020a)

- Simons, G.: Policy and political marketing: promoting conflict as policy. *J. Polit. Mark.* **19**(1), 1–28 (2020b)
- Sofianto, A.: Peran Agama Terhadap Perilaku Pemilih Dalam Pemilu Legislatif 2014 Di Jawa Tengah, pp. 161–172 (2020)
- Sofyan, N.: Studi Kasus Strategi Komunikasi Politik KPUD Kabupaten Temanggung Dalam Pilkada Jateng 2013. In Universitas Diponegoro. Universitas Diponegoro (2016)
- Suacana, W.: Budaya Demokrasi dalam Kehidupan Masyarakat Desa di Bali. *Jurnal Kajian Bali*, **1**(1), 88–151 (2011)
- Najwa Shihab (2017). Bagaimana Jika Politik Dicampur Agama? Youtube. <https://www.youtube.com/watch?v=Ji2jC7LBG0w>. Accessed 18 Aug 2021
- Menuju Bali Satu. (2019a). Satu-Satunya Tokoh Muslim! Profil H. Bambang Santoso Calon DPD RI No 24. Youtube. <https://www.youtube.com/watch?v=IQNeMv7eC70>. Accessed 18 Aug 2021
- Menuju Bali Satu. (2019b). Satu-Satunya Tokoh Muslim! Profil H. Bambang Santoso Calon DPD RI No 24. Menuju Bali Satu. Youtube. <https://www.youtube.com/watch?v=IQNeMv7eC70>. Accessed 18 Aug 2021
- Davidson, S. (2013). Campaign Communication and Political Marketing. *European J. Commun.* **28**(1), 80–82. <https://doi.org/10.1177/0267323112468747a>

# Shariah and Accounting Principles for Calculating the Actual Cost of Lending Services Among Islamic Banks: Case of Malaysia



Abdulmajid Obaid Hasan Saleh, Fahd Al-Shaghdari,  
and Tahani Ali Hakami

**Abstract** Shariah associations and bodies have permitted Islamic Banks to take the actual cost of lending, that's was due to the permissibility of differentiating between the loan and the services accompanying its amortization, restriction and follow-up, as these proceedings are not included in the principal of the loan. The Islamic banks differed in applying the concept of actual cost based on a lump sum and a percentage. The academics also differed in the methods of taking this cost, because the fee-based services provided by Islamic banks may bring some legitimate issues related to the imposition of fees or the actual cost. The research adopted the descriptive and analytical approach and the quantitative method by studying the case of Malaysian Islamic banks in accordance to the accounting principles and the related rules. The research concluded that the total cost should be calculated by the application of the following equation: Total cost (TC) = Penalty (P) + Compensation (C). In addition, the total cost imposed for late payment must meet the following two conditions: First, the total cost should not exceed the cost that the client bears in the traditional bank, with the condition that the total cost of the penalty is not doubled on the late installments or the due principal amount. Secondly, after calculating the total cost imposed on the client for the late payment, the Islamic bank must submits a written request to the Central Bank, explaining the justifications for imposing late payment fees, the circumstances that led to the imposition of late payment fees, and attaching working a plan after its approval by the Shariah Committee of the Islamic bank.

**Keywords** Actual cost · Lending services · Islamic banks · Compensation

---

A. O. H. Saleh (✉)

International Islamic University Malaysia, Selangor, Malaysia  
e-mail: [alamri@iiu.edu.my](mailto:alamri@iiu.edu.my)

F. Al-Shaghdari

Al-Madinah International University, Kuala Lumpur, Malaysia  
e-mail: [al.shaghdari@mediu.edu.my](mailto:al.shaghdari@mediu.edu.my)

T. Ali Hakami

Jazan University, Jazan, Saudi Arabia  
e-mail: [iiicons@usim.edu.my](mailto:iiicons@usim.edu.my)

## 1 Introduction

The condition of the loan from the Islamic perspective is to return the principle of the loan with equal in quality and amount. Therefore, the scholars have agreed that it is forbidden to stipulate an increase in the loan allowance to the lender, and this increases considered as usury, (Al-Mughni 4/240) and whether the increase is in the attribute, for example (such as requiring the borrower to return better than what he took), or in kind, (for example if he borrows money, he is required to return it with a gift (or a benefit) that he borrows money and he is required to return it with the condition that the borrower must work with the lender for a certain period). Loan interest, which is classified as one of the interest of ignorance, (Al-Omrani: the benefit in the loan). The consent among the huge majority of the jurists was the prohibition of increasing the loan allowance as it's considered as usury. The verses in prohibiting usury are many, including:

( الَّذِينَ يَأْكُلُونَ الرِّبَا لَا يَقُومُونَ إِلَّا كَمَا يَقُومُ الَّذِي يَتَخَبَّطُهُ الشَّيْطَانُ مِنَ الْمَمْنِ ذَلِكَ بِأَنَّهُمْ قَالُوا إِنَّمَا الْبَيْعُ مِثْلَ الرِّبَا وَأَحَلَّ اللَّهُ الْبَيْعَ وَحَرَّمَ الرِّبَا فَمَنْ جَاءَهُ مَوْعِظَةٌ مِنْ رَبِّهِ فَانْتَهَى فَلَهُ مَا سَلَفَ وَأَمْرُهُ إِلَى اللَّهِ وَمَنْ عَادَ فَأُولَئِكَ أَصْحَابُ النَّارِ هُمْ فِيهَا خَالِدُونَ سورة البقرة (275)،

(In Al-Mughni (6/436), Ibn Al-Mundhir said: (Jurists are unanimously agreed that if the lender stipulates that the borrower must pay an extra amount or a gift, and he lends a loan on that, the taking of the additional amount or gifts on is usury), and in Al-Kafi, for Ibn Abd al-Barr (p. 359). Every increase in a loan or a benefit that the lender benefits from is usury, even if it is a handful of fodder, and that is forbidden if it is stipulated, and that is why in Majallat al-Ahkam al-Shari'a according to Ahmad's school of thought (p. 271) that it is not permissible to stipulate a decrease or increase in fulfillment of the loan, whether it is in the amount or in the characteristics. For instance, if lender lent borrower poor dirhams and stipulated that the borrower must return it in better, or he stipulated that borrower must pay it back in a good kind of dirham better than what he took, or that he should pay more for what he took or vice versa, that is not proper practices from Islamic perspective. (Article 741) Also, it is not permissible for the lender to stipulate on the borrower any work that leads to a benefit to the lender, such as for the borrower to live in the lender house or lend him *Dabatah* (his camel or horse), or to work for the lender such-and-such or to benefit from his mortgage and so on. (M 742).

## 2 Literature Review

The issue of the cost of lending was discussed by the Islamic jurists concerning about the sale of trusts, and there are jurisprudential texts on that, but the issue of cost of lending in Islamic banks is still recent, and few wrote about it including:

The decision of the Islamic *Fiqh* Council in Jeddah: Regarding the Council's Resolution No. (13: 3–1/3) in the inquiries of the Islamic Development Bank, regarding

loan services, as it contained valuable discussions that highlighted something related to the actual cost provisions concerning lending services, which was discussed from a jurisprudential approach. In fact, it needs application models which will be covered in the current study. In addition, As stated in the book named as “Benefit in the Loan - An Applied Fundamental Study” by Dr. Abdullah bin Muhammad Al-Omrani, and the book is one of the publications of the Shariah Group of Al-Rajhi Bank, the Dar Kounouz Ishbilia Bulletin in Riyadh, second edition 1431 AH, 2010 AD, which discussed the actual cost, however, the book lacks the practical side, and the researcher benefited from it in the theoretical side of the study. Cost Jurisprudence by Dr. Samer Mazhar Qantaji, which is a brief research within the series of Jurisprudence of Transactions issued by the Resalah Foundation in the year 1428 AH in which the researcher highlighted the jurisprudential aspect and some contemporary applications. The researcher concluded that it is not permissible to take the actual cost of lending services. However, the researcher did not provide in details the approval with evidence and the practices of Islamic banks in this regard.

### **3 Restricted Compensation to Actual Cost in Islamic Banks—Method and Regulations**

A scientific research paper by the researcher Muhammad Walid in the Republic of Sudan, submitted for a master’s degree. The researcher focused in his study on accounting methods in determining the actual cost, through mathematical equations. The research was successful in highlighting the main Problems related to the application of actual cost. However, the research failed to address the experience and practices of Islamic banks, and the mechanism for calculating the actual cost of lending, which will be covered by this study.

From the above mentioned previous studies, it is clear that the huge majority of the previous studies highlighted the jurisprudential aspect, and only few studies highlighted the practical aspect. Therefore, this study comes to highlight both aspects and identifying new applied model related to the Malaysian case, which is considered a pioneer in Islamic banking.

### **4 The Legal Framework for Lending Expenditures in Islamic Jurisprudence**

It is commonly known among the jurists that the expenses of writing the contract are paid by the borrower due to the Almighty saying. "فَإِنْ كَانَ الَّذِي عَلَيْهِ الْحَقُّ سَفِيهًا أَوْ ضَعِيفًا أَوْ لَا يَسْتَتِيعُ أَنْ يُمِلَّ هُوَ فَلْيُمْلِلْ وَلِيُّهُ بِالْعَدْلِ" (282)

Likewise, the costs of delivery and fulfillment of the loan contract shall be on the borrower, because the loan is attached to contracts for which it is not permissible to



take compensation for it. Therefore, the loan expenses that are borne by the borrower, for example: the amount of the loan's money, or its weight, are known and calculated costs that are not controlled by the lender, rather they are well known in the dealing market, and the borrower may pay them directly to the balance or the carrier without interfering of the lender. The lending institution is permissible to take commission on loan services that equivalent to its actual direct expenditures, and it is not permissible for it to take an increase on it, and any increase in the actual expenditures is prohibited. It says in the great explanation book: "Whoever borrows Ardeba - for instance - then his agent will pay him to the borrower, and if he returns it, then his agent's fee is against him without quarrel." Al-Dardeer in "Al-Sharh Al-Kabeer" (3/145), the philanthropist should not receive any harm in the way of his charity, (And whether the reward for charity is only kindness.

## **5 General Shariah Regulations in Actual Cost**

The rule is that the actual cost is intended based on the causes for it. The reason for the actual cost due to lending differs from the actual cost due to speculation. Summarized below are the kinds of the actual cost as follows:

### ***5.1 Actual Cost Time-Bound***

The actual exchange in the liability requires including the real exchange rate on the day the exchange is executed. Ibn Omar said: Give it at the market price. And because this is the course of the judiciary, it is restricted in the same way, as if it was return it by sex and the similarity is here in terms of value, because it is impossible to match in terms of the shape. The dinar and the like? So he said: If it is something that the people are excited about, then it is acceptable to do so, as long as it is not a trick, and nothing is added to it" (Ibn Qudamah).

### ***5.2 Actual Cost Customs-Bound***

The actual cost referred to custom in cases where the parties to the contract spend and consume, such as mudarabah and musharakah contracts, and the cost bound by custom should be at a fair price, in accordance with the custom that the people of specialization and experience have with similar work, and custom is a legally considered evidence, and the rule "known by custom as a condition is a condition." And "the habit is tight", and all this is due to the practical custom,; (The entourage of Al-Durr Al-Mukhtar by Ibn Abdin), it is the accustomed people to some of the ordinary acts or actions that create obligations, such as the habit of people of taking

holiday some days of every week from work, and their accustomed when selling heavy objects that the cargo expenses to the buyer's house should be paid by the seller and their habit of paying the real estate wages in installments. The annual of several known installments, and acquaintance with them such as the marriage, expediting some of the dowry and postponing part of the dowry to the death or divorce cases, and actually the people accustomed to the availability of the amount, weight, pricing, or may not be exists at all. (Yaqoub bin Abdul Wahhab Al-Bahsin 2002).

### ***5.3 The Actual Cost of Restricted Work Done on a Contract Basis***

The actual cost if it is caused by a loan or a Murabahah contract, then it is stipulated that it be in accordance with what the exerted work has done, and the borrower may bear the actual fees for the loan services such as office matters and the wages of certain employees to follow up on the fulfillment of the loan, and so on, provided that the amount paid is equal to the real wage for loan services without the slightest profit increase. Because any increase is usury, according to the saying of the Hanafi jurists who have stipulated that the borrower should be charged the fee for writing the debt, and this was permissible issued by the Jordanian Fatwa Council Decision No. (72) On the condition that the deducted amount is not a common percentage, but rather a lump sum amount.

In this regard, the Islamic *Fiqh* Council Decision No. 13 (1/3) was also issued, in which it stated:

First: It is permissible to take fees for loan services, provided that this is within the limits of actual expenditures.

Second: Every increase in actual services is forbidden. Because it is from usury, which is forbidden according to Shariah.

As for investment loans, these are called "*murabahah* sales to the one who ordered the purchase," and they are permissible sales if their adhered to the *Shariah* terms, and a percentage (3%) should not be added in lieu of expenses. This sale requires the use of employees and the expense of costs and effort, and the association may take a profit rate of more than (4%), noting that calling it a loan is something misrepresented to the public, and it is better to call it the sale of *Murabahah* to the one who ordered the purchase (Table 1).

## **6 Measurement and Accounting Evaluation of These Costs**

It was stated in the standard of the loan to the AAOIFI (AAOIFI: No. 19): The principle is that each loan is charged at its own cost, unless it becomes difficult to do so, as

**Table 1** Interpretation of the actual cost Fatwa/Resolution

No	Fatwa/Resolution	Interpretation of the actual cost
1	It does not lead to an increase that will generate benefits	The detailed method must be approved by the <i>Shariah</i> Supervisory Board in coordination with the accounting authority
2	The <i>Shariah</i> Board of the Accounting and Auditing Organization for Islamic Financial Institutions	
3	Direct financial expenses paid to others	
4	What the bank actually paid at the fair price of what it paid was due to the benefit and the considerable interest of the client without what is due to the interest and benefit of the bank, or is a source of profit for him or a protection for his money in any way	The <i>Shariah</i> Board of Al-Rajhi Bank
5	Actual costs: calculate the actual cost of the Card Center	The <i>Shariah</i> Board of Bank Albilad
6	The commission is calculated on the basis of an estimate of the effort expended and the cost borne by the bank	The unified <i>Shariah</i> Board of Dallah Al Baraka Group
7	It does not increase in the case of an overdraft	Al-Baraka symposium (12) of Islamic economics
8	It is not related to the amount of the debt or the term of its fulfillment	Al-Baraka symposium (12) of Islamic economics
9	Direct and indirect expenses, such as indirect expenses: girls' general expenses	The Fatwa and <i>Shariah</i> Supervisory Board of Dubai Islamic Bank
10	The amount of the commission is not related to the time element	
11	The amounts of the costs to be issued in a list declared to the clients; To achieve mutual consent between the contracting parties	

its in the case with joint lending vessels, so there is no objection of charging the total direct costs on all the loans total amounts. The detailed determination method must be approved by the *Shariah* Supervisory Board, in coordination with the accounting authority by distributing the expenditures on the total loans and each loan bearing its percentage, provided that these cases are presented to the Authority attached with appropriate documents. The actual expenditures on loan services do not include indirect expenses, such as employee salaries, rentals, furniture, means of transportation, and the same with the general and administrative expenses of the institution. The Resolution of the International Islamic *Fiqh* Academy, No. 13 (1/3), stated that it is permissible for the lender to take what is equivalent to the actual cost only, and it is not permissible for him to take an additional amount to it because it will be in lieu of the loan at that time which will become usury.

## 7 Principles and Basis of Calculating the Penalty (Cost) of Late Payment, the Case of Malaysia

As for the common practices among Malaysian Islamic banks, the determination of late payment costs must take into account the compensation and penalty elements for all financing products. The late payment penalty is applied based on the following principles.

### 7.1 First Principle: The Total Cost of Late Payment

The total cost is calculated according to the following equation: Total cost (k) = Penalty (P) + Compensation (C). The total cost charged for late payment must meet the following conditions:

- That the total cost should not exceed the cost borne by the customer in the traditional bank
- The total cost of the penalty should not double on the late instalments or the due principal amount.
- After calculating the total cost imposed on the client for the late payment as in Figure 1 and 2 below, the Islamic bank should submit a written request to the Central Bank which includes, explanation of the justifications and reasons for imposing late payment fees, the circumstances that led to the imposition of late payment fees, and attaching a proposed plan after it has been approved by Islamic banks Shariah Committee.

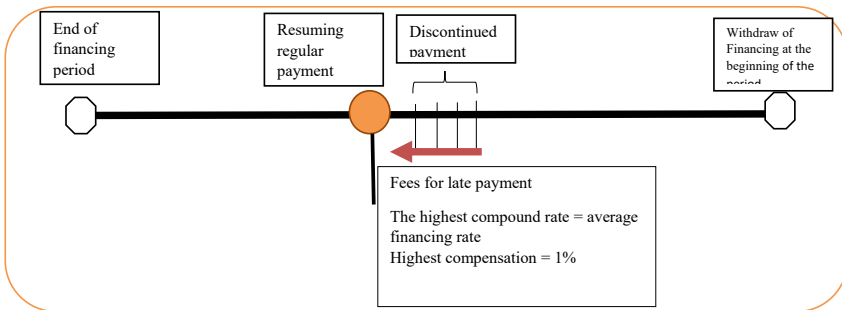
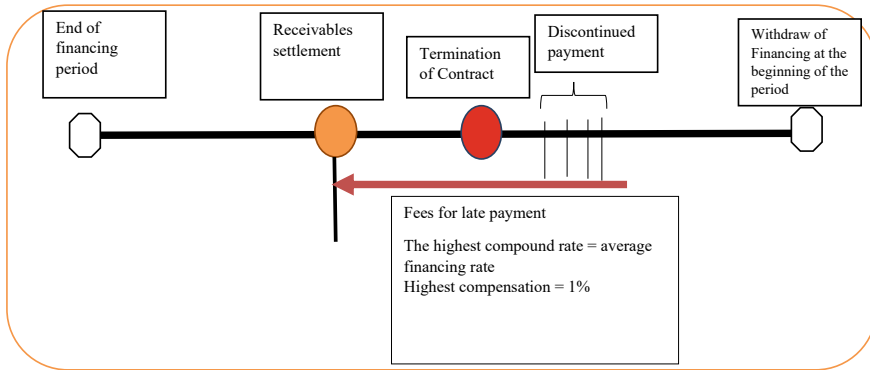


Fig. 1 Discontinuation of payment and then resumption of regular payment



**Fig. 2** Discontinued of payment, termination of contract and settlement of payments

## 7.2 The Second Principle: The Compensation

The Islamic bank has the right to take compensation for the amount of the actual loss incurred as a result of the direct damage that occurred due to the delay or default by the client. The Central Bank has put in place a set of rules that determine the amount of compensation for the bank, which are as follow:

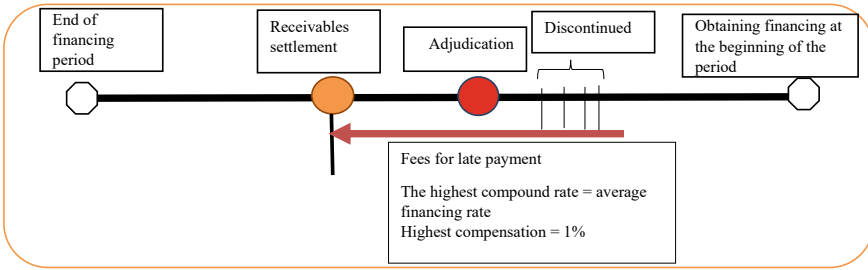
The Actual loss imposed by the Islamic bank, from the date of

1. The payment imposed by the Islamic Bank should not exceed 1% annually from the payment day till the maturity date
  - a. On the late instalments of the financial product in the event of default in payment according to what is scheduled
  - b. On the due balance of the financial product that occurred as a result of costs incurred to recover the due amount, which may also include the costs related to legal actions in the courts.

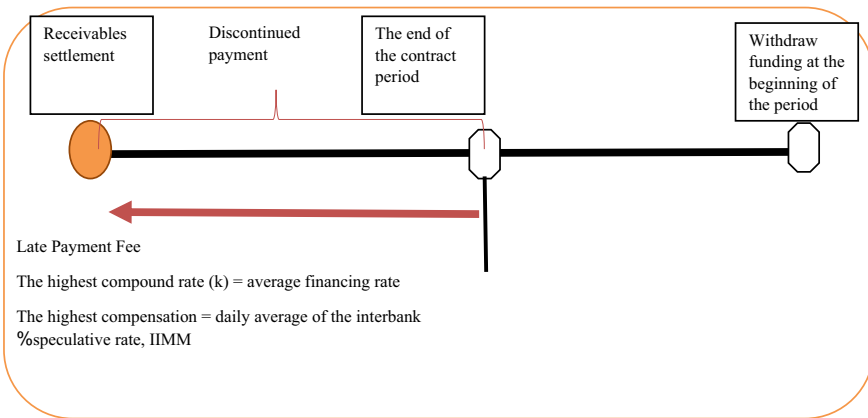
The following figures explain default scenarios and the cost-charging mechanism (Figs. 3, 4, 5, and 6)

The actual loss that must be compensated should not exceed the daily overnight Islamic interbank rate (overnight Islamic interbank rate) on the outstanding balance.

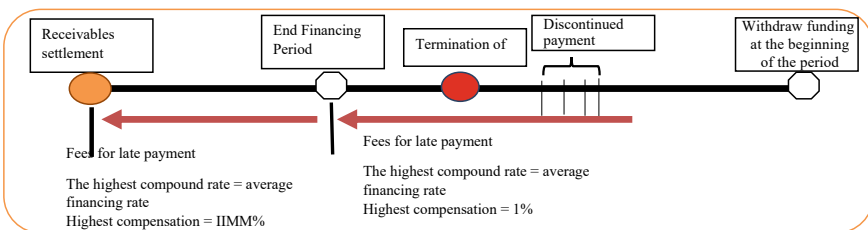
2. The actual loss that to be compensated should not exceed the daily overnight Islamic interbank rate (overnight Islamic interbank rate) on the outstanding balance.
3. The price for the actual loss is determined based on the point of default, and it is calculated on a monthly basis from the date the payment is due.
4. The amount of compensation must be included in the account of distributable profit with investment depositors.



**Fig. 3** Explains the compensation through the average interbank speculative rate in the interbank money market (IIMM) after the end of the contract period



**Fig. 4** Explains the compensation through the average interbank speculative rate in the interbank money market (IIMM) after the end of the contract period



**Fig. 5** Defaults before the maturity date and settlement after the maturity date

### 7.3 Third Principle: The Penalty

According to the Central Bank guideline, the penalty should be directed to charitable societies and institutions approved by the Shariah Committee of the Islamic Bank.

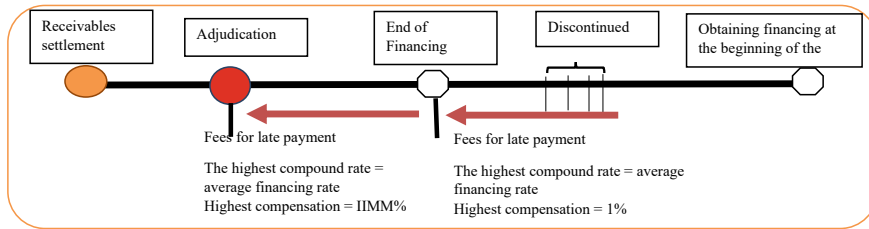


Fig. 6 Failure to pay will lead to a court ruling after the due date

The Malaysian Central Bank justifies the imposition of a penalty for late payment on the grounds that it acts as a deterrent to defaulters. According to these instructions issued by the Central Bank, an Islamic bank must do the following:

- a. To separate the penalty account from the compensation account in order to facilitate the process of proper governance of the accounts. This procedure can facilitate the process of monitoring and identifying the sources of calculating the penalty and distributing them to charitable organizations.
- b. Disclosure in its financial statements, as well as in financing contracts for clients, about the use of the penalty for charitable purposes.
- c. The bank’s Shariah Board should perform its supervisory function to ensure the appropriate management, allocation and distribution of the penalty amount to the recognized charitable organizations.
- d. The Islamic bank submits a report to the Banking and Takaful Department in the Central Bank on the process of allocating the penalty amount on an annual basis in conjunction with the submission of the annual financial report.
- e. The Islamic bank is expected to be rational in the process of managing the penalty, and it should not be seen or implied that it benefits from its management or distribution (for example imposing fees on the management of the penalty account), or it promotes itself through the distribution process for it, which may lead to direct or indirect benefit to the bank.

## 8 Illustrative Examples of Calculating the Cost of Late Payment

First: An illustrative example of how to calculate the cost of late payment in case of default before the end of the financing period (Table 2).

Therefore, the late payment cost is calculated according to the following equation

$$\text{Overdue Instalment} \times \text{Compound Rate} \times (\text{Days Overdue}) / 365$$

If we assume that the customer is late in paying the April instalment, the late payment cost will be as follows

**Table 2** Cost of late payment in case of default before the end of the financing period

Product name	BBA (Mortgage – Retail)
Product cost	Rm 1000,000
Bank Sale Price	Rm 158, 520
Monthly Instalments'	Rm 1,321
The due date of each instalment	4 of each month
Financing profit rate	10%
Fine for Late Payment	Average Financing rate
Compensation	1% in case of default before the end of the financing period
The penalty	The penalty = penalty for Late Payment-Compensation

**Table 3** Cost of late payment in the event of default after the end of the financing period

Product name	Murabaha documentary credit
Total financing amount	Rm 1000,000
Bank Sale Price	Rm 101, 000
Due date of financing	4 April 2011
Financing profit rate	10% yearly
Fine for Late Payment	Average Financing rate
Compensation	IIMM% (as the defaults occurred after the loan maturity period expired )
The penalty	The penalty = Fine for Late Payment-Compensation

$$9.5\% \times \left( \frac{30}{365} \right) = \text{RM } 10.31$$

As for the amount of compensation (p), it is calculated as follows:

$$1, 321 \times 1\% \times \left( \frac{30}{365} \right) = \text{RM } 1.09$$

As for the fine, it is calculated as follows

$$\text{The penalty} = \text{Total Late Payment Cost} - \text{Compensation}$$

$$\text{The Penalty} = 10.31 - 1.09 = \text{RM } 9.22$$

Second: An illustrative example of how to calculate the cost of late payment in the event of default after the end of the financing period (Table 3)



Thus, the one-month late payment cost is calculated as follows:  
 Total financing amount × the average bank’s funding rate × (30 ÷ 365)

$$100,000 \times 9.5\% \times \left(\frac{30}{365}\right) = \text{Rm } 780.82$$

As for the compensation, it is calculated as follows:

$$\begin{aligned} &\text{Total financing amount} \times \text{IIMM}\% \left(\frac{30}{365}\right) \\ &100,000 \times 2.68 \times \left(\frac{30}{365}\right) \text{ RM } 220.27 \end{aligned}$$

As for the penalty, it is calculated as follows:

$$\text{The Penalty} = \text{the Penalty for late payment} - \text{Compensation}$$

$$\text{The penalty} = 780.82 - 220.27 = \text{RM } 560.55$$

Finally, it’s recommended for all financial institutions that are based on lending or credit to beware of complacency regarding costs imposed on loans; because every unreal increase is usury. God Almighty said

(وَاعْلَمُوا أَنَّ اللَّهَ يَعْلَمُ مَا فِي أَنْفُسِكُمْ فَاحْذَرُوهُ).

## 9 Research Results

The basic of the loan from Islamic perspective is to return the principal equal in term of quality and amount. Hence the scholars are unanimously agreed that it is forbidden to stipulate an increase in the loan allowance to the lender, and any increase imposed is usury. In addition, Loan service expenses: It is permissible for the lending institution to charge on loan services what is equivalent to its actual direct expenditures, and it is not permissible to take an extra amount on it, and any extra amount included in the actual expenses is prohibited. Moreover, the total cost is calculated by to the following equation: Total cost (k) = penalty (P) + Compensation (C). Furthermore, the total cost charged for late payment must meet the following two conditions: First; the total cost does not exceed the cost borne by the client in the traditional bank. Second, the total cost of the penalty should not be doubled on the late installments or on the due principal amount. After calculating the total cost imposed on the client with the late payment as in Figs. 1 and 2, the Islamic bank should submits a written

request to the Central Bank, explaining the justifications and reasons for imposing the late payment fees, the circumstances that led to the imposition of the late payment fees, and attaching plan after it has been approved by Shariah Committee of the Islamic Bank.

## References

- Abu al-Barakat Ahmad bin Muhammad al-Adawi, famous for al-Dardir: Kitab al-Sharh al-Kabir (3/145), <http://www.shamela.ws>
- Abu al-Hassan al-Taswali: Kitab al-Bahja fi Sharh al-Tuhafa (Explanation of Tuhfat al-Ahkam), (2/288), Dar al-Kutub al-Ilmiyya, Lebanon - Beirut, Edition No. 1 (2010)
- Al-Islam Abu Taymiyyah, S.: Book of Majmoo 'Al-Fataawa 30/24, The Choices 201, who died in 728 AH
- Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI). <http://aaoifi.com/?lang=en>
- Ahmad Bin Hanbal, I.: J. Islam. Rul. p. 271
- Al-Amrani: Benefit in Loan, An Empirical Study. J. Interest Hunti. [www.saaaid.net/bahoth/69.htm](http://www.saaaid.net/bahoth/69.htm). Accessed 9 Sep 2021
- Al-Bahooti Al-Hanbali: Kashshaaf Al-Qana'a (3/419), who died in 1051 A.H.
- Al-Harith bin Abi Usama: In order to find the appendices of Musnad HadithNo.437.J:1/Page:500
- Al-Maliki, I.S.F.: The Rulings Note on the Fundamentals of the Districts and Approaches to Rulings (1/371) (2003)
- Jordanian Fatwa Council Resolution: No. (72) (2003). <https://www.aliftaa.jo/Decision.aspx?DecisionId=73#.YCLYIC0RpMA>
- Dawood, A.: Sunan Abi Dawood, the publisher: Dar Al-Risalah Al-Alamiah, Edition No. 1, (3596) (3/332) (2009)
- Hashish, K.A.A.: Cost accounting, measurement and analysis, p. 34, Dar Wael Magazine for Printing and Publishing Distribution (2013)
- Wahhab Al-Bahsin, Y.b.A.: The Custom Is a Court: a Study of the Original and Applied Theory, 1st edn. Al-Rashed Library for Publishing and Distribution, Riyadh (2002)
- Ibn Hajar Al-Haytami: Tuhfat Al-Muhtaj, Explaining Al-Minhaj, (10/134), died in the year 974 AH.
- Ibn Hazm Al-Andalusi: Kitab Al-Mahalla in Al-Athar (2-360), Dar Al-Fikr, Year of Publication: - Without the edition number:T:d
- Ibn Abd al-Barr: The Book of Al-Kafi Fi Fiqh of the People of Madinah, p. 359, The Site of the Comprehensive Encyclopedia
- Farhoun al-Maliki, I.: The Book of Al-Brocade Al-Madhab in Knowing the Scholars of Notables of the Sect, Noor Library (2011)
- Ibn Qudamah al-Dimashqi: Kitab al-Mughni from the warehouses of Hanbali jurisprudence, (4/436), the site of the comprehensive encyclopedia. <http://islampoint.com/w/fqh/Web/2377/669.htm>
- Imam al-Qurtubi may God have mercy on him: which includes all the rulings of the Qur'an, the interpretation of al-Qurtubi (3/241) (2006).
- bin Yunis Al-Bahouti, M.: The book Explaining Muntaha Al-Iradat, the investigator Abdullah bin Abdul-Mohsen Al-Turki, (2/225) (2008)
- Abdeen, M.A.B.O.: Al-Mukhtar's Response to Al-Durr Al-Mukhtar (Attachment of Ibn Abdin), (6-92) (2003)
- Bank Negara Malaysia: Guidelines on Late Payment Charges for Islamic Banking Institutions (2014)
- Journal of the International Islamic Fiqh Academy, Organization, Session 3, 1407 AH 1986 CE, Issue III, 1/77)

# The Shariah Framework for Smart Contracts, an Original Analytical Study



Abdulmajid Obaid Hasan Saleh, Alaa Saleh Halawani,  
and Mohammad Abdelhamid Salem Qatawneh

**Abstract** A smart contract is a contract that brings together two or more parties that can be programmed electronically and then execute its terms automatically, once certain events or specific conditions are met and it depends on blockchain technology. This paper intends to elucidate this contract at the practical level, and then explains the legal frameworks from Islamic Perspective, by mentioning examples of legal contracts named in Islamic jurisprudence and shows similarities along with an analysis of the jurisprudential problems. The research concluded that there are jurisprudential contracts that are consistent with smart contracts, even in some parts through which the framework of the contract can be constructed from the jurisprudential point of view. The research used the descriptive and analytical method. The researchers concluded that a smart contract can be used in Islamic business framework as long as it meets the requisite legal elements as required under the Shariah principles.

**Keywords** Smart contracts · Blockchain · Islamic jurisprudence · Shariah framework

## 1 Introduction

In recent times, Smart Contracts as well as Blockchain Technology has been an unmissable trend for both academy and industry. The blockchain technology has shown promising implementation prospects since its inception. Blockchain has been used in a variety of areas, from the first coin to the new smart contract. A blockchain is a distributed software framework that enables transactions to be processed without the involvement of a third party. As a result, company operations can be done at a low

---

A. O. H. Saleh (✉) · A. S. Halawani  
International Islamic University, Kuala Lumpur, Malaysia  
e-mail: [alamri@iiu.edu.my](mailto:alamri@iiu.edu.my)

M. A. S. Qatawneh  
University of Malaysia, Kuala Lumpur, Malaysia  
e-mail: [qatawneh@um.edu.my](mailto:qatawneh@um.edu.my)

cost and in a short amount of time. Furthermore, the immutability of blockchains ensures distributed trust since all transactions stored in blockchains are virtually impossible to tamper with, and all past transactions are auditable and traceable (Jani 2020).

Since the sweep of the smart digital revolution with its three components: Revolution Smart Digital. In addition to “Big Data” Internet of Things” and “Artificial Intelligence”, they invade various aspects of human life. Those working in the legislative field found themselves facing the challenges posed by these revolutions, through terms and concepts that had not existed before. Among these new concepts (smart contracts) that extend to the development of blockchain technology: Called smart contracts, called self-contracts They are unique protocols, coded Through software that can send contracts from one person’s account to another person’s account by registering on (blockchain) platforms without the interference of a third party as a notary, broker or central authority (Alam and Noor 2020).

Smart contracts allow transactions and implementation of obligations with the use of digital currencies through the programmed computer recent times, Smart Contracts as well as Blockchain Technology has been an unmissable trend for both academy and industry. Since its commencement, the blockchain technology has shown that it has a wide range of applications. Blockchain has been used in a variety of areas, mostly in the corporate and financial industries, from the first cryptocurrency to the new smart contract. A blockchain is a distributed software framework that enables transactions to be processed without the involvement of a third party. (Zheng et al. 2020). As a result, business processes can be completed at a low cost and in a short time. Furthermore, since all transactions stored in blockchains are practically impossible to tamper with, and all previous transactions are auditable and traceable, the immutability of blockchains guarantees distributed trust (Jani 2020). The purpose of this paper is to conduct a systematic overview of the applications of smart contracts from Islamic Perspectives. Additionally, to elucidate this types of contracts at the practical level, and then explains the legal frameworks from Islamic Perspective, by mentioning examples of legal contracts named in Islamic jurisprudence and shows similarities along with an analysis of the jurisprudential problems. This study hopes to explore new platform for smart contract application in line with the Islamic Shariah principles which will assist Muslims eradicate their uncertainty concerning the use of smart contract. The importance of this paper is that, it will provides an synopsis of the legal view of smart contracts according to the requirements and fundamentals of Islamic principles.

## 2 Literature Review

There exists no specific definition of a smart contract. In general, Industry and company processes are being reshaped by smart contract technology. Smart contracts, which are rooted in blockchains, allow the contractual terms of an agreement to be implemented automatically with no involvement of a trusted third party (Zheng et al.

2020). In addition, a smart contract is a self-enforcing agreement in which the terms of the agreement between buyers and sellers are written directly into code lines (Allam 2018). The code lines and the agreement contained inside are distributed through a decentralised blockchain network. The codes manage the execution, and the business transactions are tractable and irreparable. A smart contract is a computer procedure contract that differs from conventional contracts in terms of its creativity (Zou et al. 2019). However, in order for smart contracts to be recognised as an innovation of Islamic contracts, Shariah compliant transactions require a contract that meets all of the pillars of Islamic contracts.

A blockchain platform allows smart contracts to be written in programming languages like Solidity and Java (Hu et al. 2021). The aim of converting transactions into computer codes is to make data stored in a block simpler and faster before chaining it to another block (Clack et al. 2016). A smart contract is a digital version of a paper contract that is then translated into machine code, and runs on the blockchain network (Mohanta et al. 2018). Smart contracts will keep track of a variety of transactions and store them in Ethereum, a distributed network-based platform (Yoo 2017).

On the other hand, From the Islamic point of view, A contract is an arrangement between contracting parties to make an offer and accept it based on Shariah-compliant terms and conditions (Rahim et al. 2019). There is an interchangeable item or subject between the parties in the agreement. Aqd is the Arabic word for contract in modern law. It refers to a pledge or a tie. Aqds is a term that refers to a mixture of bid and acceptance (Lahsasna 2012). Islamic scholars usually use 'aqdas, a basic term of a contract, to convey an offer and acceptance, Al-Zuhayli (2007). The 'aqd must follow Shariah guidelines before accepting to participate in the offer and acceptance. The agreement of bilateral parties, according to Nasution et al. (2016). According to Suhendi (2008), an Islamic contract is an arrangement between two parties to accept an offer from the other. Meanwhile, according to Siti Salwani (2010), any aspect of a contract is an agreement from a legal standpoint. Consequently, a contract entails the concerned parties' acceptance of a commitment, rights, and responsibilities.

### 3 The Emergence of Smart Contracts

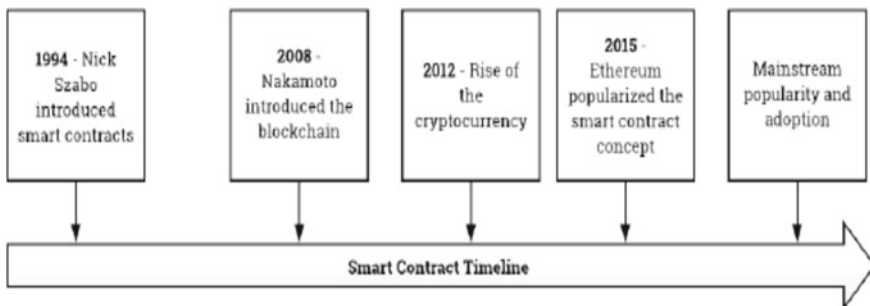
The advent of advanced technology has intensified market rivalry as each attempts to use the latter to improve employee productivity and the firm's overall efficiency (Chen et al. 2012). As a result, technology has developed into a crucial component of corporate operations as well as a primary force of creativity and competitiveness. In the 1990s, a smart contract was proposed as a computerised transaction protocol that applies the contractual terms of a contract. Smart contracts were also invented in 1994 by Nick Szabo, an American computer scientist who "invented the virtual currency Bitcoin in 1998, ten years before the inception of Bitcoin" (Allam 2018). In his paper titled 'Smart Contracts: Building Blocks for Digital Markets,' Nick Szabo (1996) proposed the first smart contract. Szabo was motivated to work on smart contracts

by his readings of Ayn Rand and his understanding of contract laws and computer technology (Razak 2016). The aim of a smart contract is to make certain changes to conventional contract terms including payment terms. Unfortunately, people did not understand smart contracts until Buterin launched Ethereum in 2015, 19 years after they were first introduced. According to Poon and Buterin (2016), a smart contract is similar to a vending machine that dispenses a product with exact values based on the price paid. After you've put the right sum of money in the money slot. As a result, if they do not inject the correct amount of money, it is possible that they will not obtain their desired products. Since then, proof-of-concept experiments, production implementations, and high-level distributed applications have proliferated, and smart contracts have evolved into what we know them as today. The history of smart contracts timeline is depicted in Fig. 1 below.

#### 4 Areas of Use of Smart Contracts

At the present time, the Blockchain and smart contracts are extensively applied in a variety of segments and contexts, incorporating:

- **Government:** to keep track of citizens' votes or politicians' programmes in a transparent manner (so that promises made can be verified), or to allow independent governance systems.
- **Intellectual Possessions:** to officially state the confirmation of existence and ownership of documents.
- **Internet:** to diminish censorships, by developing the immutability of information accumulated in the blockchain technology.
- **Financial Sector:** to send money between two parties without relying on intermediaries such as banks.
- **Educational Sector:** to store data on qualifications attained by students and learners, to minimise career application frauds; in this context, manifold parties



**Fig. 1** History of the smart contracts. *Source* Mokdad and Hewahi (2020)

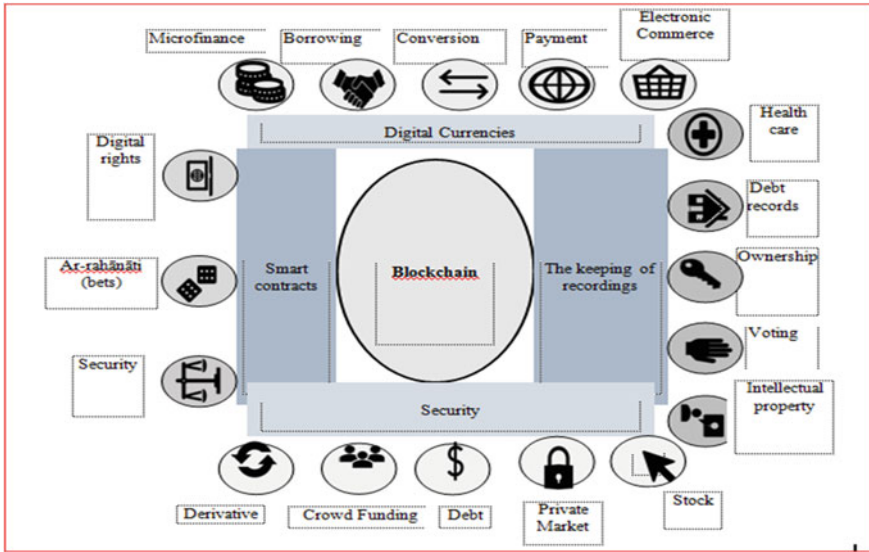


Fig. 2 Uses of blockchain. Source Szewczyk (2018)

such as (Higher education Institutions and training centers, etc.) could write qualifications attained by an individual on the blockchain; human resources experts could then without difficulty access information about when and where a given competency was achieved.

- **Business Sector:** to keep track of the characteristics of products as well as who owns them, particularly for luxury products, in order to reduce the demand for counterfeit/stolen items (Fig. 2).

## 5 Characteristics of Smart Contracts

Smart contracts have several features that distinguish them from ordinary contracts:

### 5.1 The Independence of the Contracting Parties

One of the unique characteristics of smart contract, there is no central authority needed, once the contract comes into force, algorithms evaluate and implement the terms of the contract.

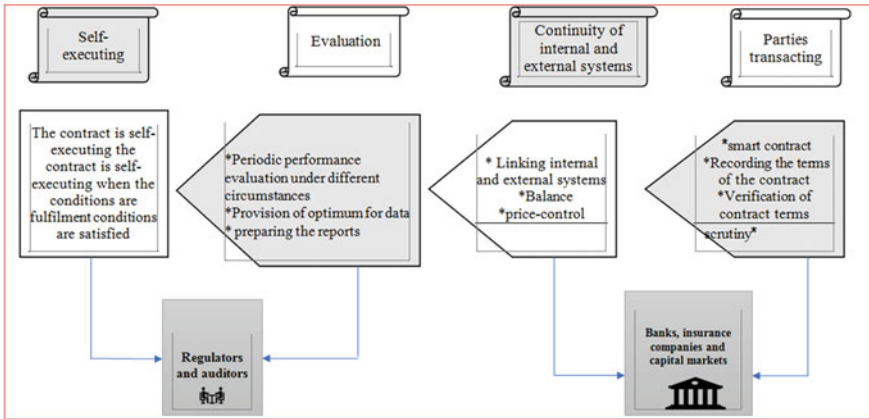


Fig. 3 The life cycle of a smart contract

### 5.2 High Level of Security and Protection

This is because it relies on blockchain technology, which prevents any irregularities or fraud operations, operating data input on the blockchain is deemed secure owing to the stacking of the blocks.

### 5.3 Absolute Transparency in Contract Implementation

As any party can see the terms and conditions of the contract and trace them in every stage throughout the process which limiting the disputes that are often after contract expiration.

### 5.4 Reducing Transaction and Administration Costs

The costs of the transaction are reduced by removing the mediation by several parties such as; lawyers, banks and intermediary companies. In addition, Smart Contract can minimise administrative costs and save money on programmes, increase the quality of business procedure, and lower risks.



### 5.5 Speed and Real-Time Updates

Smart contracts can speed up a wide range of business processes because they use software code to automate activities that would otherwise be completed manually (Fig. 3).

## 6 Research Methodology

This paper is a qualitative study that examines several relevant topics using the content analysis approach. The characteristics and patterns of smart contracts were analysed using a qualitative descriptive method in this research. Following that, using a semantic and deductive method, tracing what is similar to or equivalent to certain contracts in the Islamic inheritance.

## 7 Smart Contracts and the Contract in Islamic Jurisprudence

Scholars realized early on the need for renewal and development of jurisprudence, They stated that the texts of Shariah are endless and the incidents are continuous, which necessitated envisioning the possibilities for the future, And the development of doctrinal rules that address, The most critical important issues that need legal rooting (Fig. 4):

Some problems at the technical level:

Smart contracts suffer from some technical problems that make the Shariah framework not steady.

1. Many banks and companies have yet to adopt it, Because of its centralization and openness to all currencies.
2. It depends on complex algorithms that require special knowledge Khalifa (2018).

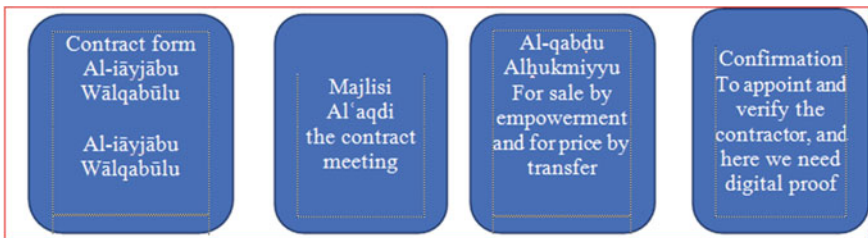


Fig. 4 Contract in Islamic jurisprudence. Source Al Balushi (2019)

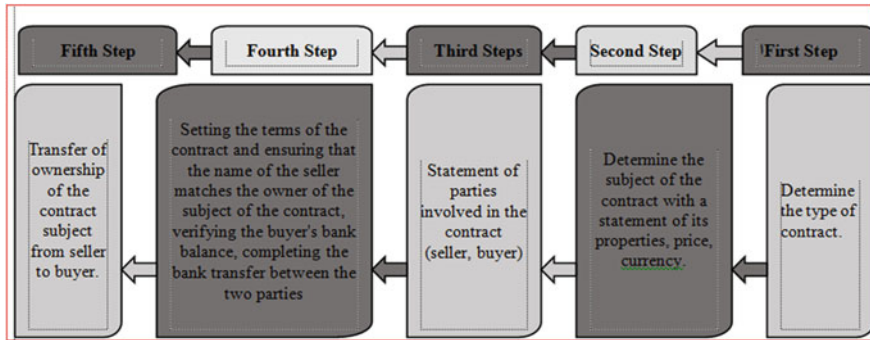


Fig. 5 Stages of implementing the smart contract. *Source* Al Balushi (2019)

## 8 The Stages of Implementing the Smart Contract

See Fig. 5.

## 9 Similar Models for Smart Contracts in Islamic Jurisprudence

Some jurisprudential models share some features with smart contracts, as follows:

### 9.1 *Contracts of Adhesion (Uqūdu al'ith'ā)*

They are the types of contracts that are used in public facilities, There are formulas that contain terms and conditions, it only needed acceptance, And because these contracts are presented to the public, they are considered a public offer the legal ruling according to the fatwas of the Islamic Fiqh Academy, the ruling is permissible if the price is fair, It does not include any prejudice to the compliant party (Academyl 2009).

It is a contract in which one of the parties accepts any of the contract's terms and conditions without being able to amend or add to them, and he is not subject to the will of the other party. It is one of the decades that coincided with the evolution of life as well as the rise of manufacturing and technology. Including contracts for travel by plane or rail, the traveller has no right to change the terms and clause affixed to the travel ticket, and he submits to the airline's or train company's wishes, surrendering all conditions (Saleh 1993).

## ***9.2 Similarities Between Adhesion Contracts and Smart Contracts***

Compliance contracts are standard, prepared in advance, in which the contract details, stages and terms are made from one party. While smart contracts are typical and prepared in advance and contain accurate information of the contract and its procedures, all of this is based on agreement of the two parties.

## **10 Governing Rules in this Section**

### ***10.1 Constituency Satisfaction***

يَا أَيُّهَا الَّذِينَ آمَنُوا لَا تَأْكُلُوا أَمْوَالَكُمْ بَيْنَكُمْ بِالْبَاطِلِ إِلَّا أَنْ تَكُونَ تِجَارَةً عَنْ تَرَاضٍ مِنْكُمْ وَلَا تَقْتُلُوا أَنْفُسَكُمْ إِنَّ اللَّهَ كَانَ بِكُمْ رَحِيمًا (٢٩)

(O ye who believe! Eat not up your property among yourselves in vanities: But let there be amongst you Traffic and trade by mutual good-will) Surah Al- Nisa 29 (QS 4: 29).

Satisfaction is a legitimate legal entity in accepting the conditions and contract procedures as a single block.

The factor of consent is a key pillar in Shariah, and in practise, the two parties should not use smart contracts unless they have given their full consent, as the means of exchange is dependent on secrecy, whether in place or time.

### ***10.2 Knowledge Under the Contract***

This ignorance is either in the sale or the price, so ignorance in what is sold may be lack of knowledge of the seller itself, or lack of understanding of its characteristics, or the inability of the seller to deliver it, Ignorance about the price may be unaware of it, or its hesitation, or lack of knowledge of the time.

### ***10.3 Contracts of Almueata***

It is for the contracting parties to agree on a price and goods and give them without an offer or acceptance. For example: if the buyer takes the sale and pays the seller the price, or the seller pays the sold price, and the other pays him without speaking or signaling, whether the sold is insignificant or valuable (Zuhaili 2006).

Since God permitted selling but did not specify how it would be done, it was appropriate to return to tradition, as the texts suggested in stone and planting, and because the Muslims in their markets rely on custom, and because the sale was present among them and was known to them, but Shariah added provisions to it and held it as it is, based on damage, usury, and deceit, It wasn't taken from the Messenger, either. May God bless him and grant him peace-and none of his companions, despite their widespread practise, use offer and acceptance, so the sale between the Companions was recognised and verified by tradition, and for this reason the Fiqh Heritage books stipulated that it is permissible.

#### ***10.4 Similarities Between Almueatat Sales and a Smart Contract***

Almueatati contracts and smart contracts agreed on the absence of verbal offer and acceptance. And adequacy of tangible exchange in Almueatati contract and electronic signature in smart contracts. Islamic jurisprudence accepts the principle of acting in the reciprocal process without verbal response and acceptance; it is based on the following:

**Commercial Custom:** The legal jurists set two pillars for the convention: physical and moral so that people become accustomed to following certain rules, known as the material corner And that feeling of the necessity to follow, and not deviate from the rule they followed, is what is known as the moral convention, and this is the case in smart contracts (Hanna 2009).

#### ***10.5 Similarities Between Bay'u Aliāstijrāri and Smart Contracts***

**Bay'u Aliāstijrāri:** An idiomatically taking the goods from the seller little by little, and paying their price after that (Affairs 1424) (Kuwaiti Fiqh Encyclopedia 9:43). It is not in the contract offer and acceptance this helps us to authenticate electronic contracts that do not have a direct offer and acceptance. The electronic signature is like the process of receipt and delivery in the Ijarah contract.

## 10.6 *Similarities Between Smart Contracts, with Subordinate Rule*

Imam Al-Ghazali used the term with regard to leasing (al-<sup>3</sup>ijārati), the lease contract for a thing binds all of that thing's belongings, This matter is included in the rule of Shariah (The affiliate should follow its origin) This helps us in smart contracts as follows:

What is considered in Shariah is the concept of the contract and what it contains, so we do not need to repeat contracts, or detail in contracts, and if we need it, it is a matter of clarification (Al-Sharif 1375).

## 11 Special Shariah Rules for Building Smart Contracts

### 11.1 لا ينسب إلى ساكت قول ولكن السكوت في معرض الحجة بيان

No statement shall be attributed to a person who remains silent this is a rule approved in the Shafi'i school; It is the basis for the permissibility of exchanges and sales in the virtual world. Because the rule states that judgments and rights are attached to a person, not necessarily through speech, the custom determines the mechanism of the statement, this rule is at the root of adopting smart contracts. The electronic signature is sufficient to prove them right and legality of the exchange (Suyuti 2006). Due to the shyness of single woman, the Shariah considers the virgin's silence to be consent in marriage, and the tradition considers this aspect, smart contracts may be considered from this because the contemporary custom needs new contemporary matters. It can be expressed orally or in writing.

### Chapter 19 Marv سورة مريم - Marvam: Verse 29

"فَأَشَارَتْ إِلَيْهِ ۗ قَالُوا كَيْفَ نُكَلِّمُ مَنْ كَانَ فِي الْمَهْدِ صَبِيًّا"

"But she pointed to the babe. They said: "How can we talk to one who is a child in the cradle?"

### 11.2 مجلس العقد هو الوحدة الزمنية للعقد بغض النظر عن المكان

A contract board is the unit of time of a contract regardless of location. The Shariah standard (31) mentioned the principle of contracting by voice or video conversation- via the Internet- and the same is digital communication- and that it takes the provisions of the present contractors, so the provisions of the contract council union shall apply to it. The Shariah standard (31) regarding financial transactions on the Internet stated

in paragraph 2/2”: It is permissible to conclude financial contracts via the Internet, and the contracts you enter into with are subject to its customers via the Internet for the general rules for financial transactions in Islamic law, such as opening accounts, making transfers, commercial contracts, etc. This confirms a lengthy decision of the Islamic Fiqh Council No. 32 (14/2).

The essence of contracting by electronic means is two absentee contracts in a time and place identical to contracting by email or over the phone, with the main difference being the form of process used, which is electronic. In both cases, we are contracting between the two absentees, analogous to a contract in writing, messenger, telephone, or the like (Ahmed 2011). If a contract is concluded between two absentees, they are not joined by one spot, neither of them sees the other as an examination, nor does he hear his words, and the means of contact between them was writing,” the Council of the Islamic Fiqh Council agreed in its sixth session in Jeddah in March 1990. Or the letter, which includes telegraph, telex, fax, and computer screens, in which case the contract is established upon receipt of the bid and acceptance by the addressee (Ghashghaci and Ravanan 2017).

## 12 Research Findings and Recommendations

The study was successful in meeting the objective of this study which was to elucidate these types of contracts at the practical level, and then explains the legal frameworks from Islamic Perspective, by mentioning examples of legal contracts named in Islamic jurisprudence and shows similarities along with an analysis of the jurisprudential problems. The researchers concluded that a smart contract can be used in Islamic business framework as long as it meets the requisite legal elements as required under the Shariah principles. Second, the method of exchanging products and sales has evolved as a result of the industrial and electronic revolutions. As long as the mechanism of human exchange works to prevent and remove damage, ease, speed, professionalism, and accuracy, Shariah interacts with the exigencies and requirements of the human being.

The current study provides useful information insights, especially for Shariah auditors and researchers in several domains of science, both theoretically and practically. Shariah auditors must track and supervise the use of smart contracts to ensure that they will become the potential innovation of Islamic smart contracts. Furthermore, further research into this platform is needed before it can be used as a standard in the Islamic Finance industries. This study aims to stimulate further research into how to improve smart contract applications from an Islamic perspective, so that they comply with Islamic contract principles. It is also to assist the Islamic Finance industry in keeping up with technical advancements.

## 13 Conclusion

Smart contracts offer the Islamic economy, especially the financial services sector, an exciting and transformative opportunity. The Internet of Transactions (the other IoT) is already possible in several respects because legal agreements can be codified using patented and transparent methods today. Latest advancement within the field of blockchains, cryptocurrencies, smart contracts and intelligent agents have pulled in the consideration of experts and advocate of Islamic finance as well as Shariah scholars. In relation to Shariah compliance, the precise contract considerations and succession will differ among different products and among different transaction, however, the core contractual specifications for Shariah compliance, such as offer (Ijab) and acceptance (Qabul), are assumed to be fulfilled either prior to the entries on the blockchain or through conduct through the blockchain inputs. In Shariah, all methods of execution including are permissible. In this context, the blockchain and smart contracts serve as a clearing, settlement, and distribution system. Smart contracts serve as an escrow service and a digital mediator, guarantying that the inputs are accurate. These programmes, to some degree, function as solicitors', ensuring that all inputs are properly met, which then activates the next output in a smart contract. This allows for the settlement and possession transfer of the tokenized asset on the blockchain without violating the Shariah Principles.

It is critical that Islamic financial institutions forge strategic alliances with experts in the field to overcome challenges such as talent and smart contract innovation. It is critical for Islamic banks, financial service providers, and insurers to gain a thorough understanding of smart contracts in order to effectively collaborate with the blockchain-based smart contract startup ecosystem landscape. They may also concentrate on developing completely new goods and services based on smart contracts. Collaborative projects between accelerators, innovation labs, incubators, or direct with blockchain-based smart contract startups themselves are likely to yield the best results in such innovation efforts. In summing up, we wish this manuscript will serve as directions to developing protected and accessible smart contract applications in line with the Shariah Principles and encourage the blossoming of smart contract technologies.

## References

- Abd Razak, S.A.: Combination of contracts in Islamic finance: a synthesis. *ISRA Int. J. Islamic Finan.* **8**(2), 51 (2016)
- Academy, I.I.: International Islamic Fiqh Academy. International Islamic Fiqh Academy (2009)
- Affairs, T.M.: Kuwaiti Fiqh Encyclopedia (1424)
- Ahmed, M.: Electronic Contract Council (A Comparative Study), 1st edn. New University House, Alexandria, p. 87 (2011)
- Alam, S., Noor, H.: Mined and Non-Mined Crypto Currencies: A Critical Analysis from Shariah Perspective (2020)

- Allam, Z.: On smart contracts and organisational performance: a review of smart contracts through the blockchain technology. *Rev. Econ. Bus. Stud.* **11**(2), 137–156 (2018)
- Al-Sharif, A.-J.A.-S.: *Altaarifat*. Mustafa Al-Halabi Press, Egypt Cairo (1375)
- Al-Zuhaili, W.: *Tawarrug, its essence and its types: mainstream tawarrug and organized Tawarrug*. Retrieved December **18** (2006)
- Chen, H., Chiang, R.H., Storey, V.C.: Business intelligence and analytics: from big data to big impact. *MIS Q.* **36**(4), 1165–1188 (2012)
- Clack, C.D., Bakshi, V.A., Braine, L.: Smart contract templates: foundations, design landscape and research directions. arXiv preprint [arXiv:1608.00771](https://arxiv.org/abs/1608.00771) (2016)
- Ghashghaci, L., Ravanan, A.: A comparative study on the role of the electronic commerce act in remote transactions and its effect on compensation from Iran and France legal perspective. *J. Pol. L.* **10**, 146 (2017)
- Hanna, R.R.: *Almieyar almatabae fi tahdid al'aeraf almutabaqat ealaa eqad albaye lidawlii*. Tikrit Univ. *J. Hum. Sci.* **16**(1), 346–349 (2009)
- Hu, T., et al.: Transaction-based classification and detection approach for Ethereum smart contract. *Inf. Process. Manag.* **58**(2), 102462 (2021)
- Jani, S.: *Smart Contracts: Building Blocks for Digital Transformation* (2020)
- Khalifa, E.: The next technological revolution in the world of finance and business. *Future Adv. Res. Stud.* (2018)
- Lahsasna, A.: *A Mini Guide to Islamic Contracts in Financial Services*. CERT Publications SDN BHD, Kuala Lumpur (2012)
- Mohanta, B.K., Panda, S.S., Jena, D.: An overview of smart contract and use cases in blockchain technology. In: 2018 9th International Conference on Computing, Communication and Networking Technologies (ICCCNT), pp. 1–4. IEEE (2018)
- Mokdad, I., Hewahi, N.M.: Empirical evaluation of blockchain smart contracts. In: Khan, M., Quasim, M., Algarni, F., Alharthi, A. (eds.) *Decentralised Internet of Things*. SBD, vol. 71. Springer, Cham (2020). [https://doi.org/10.1007/978-3-030-38677-1\\_3](https://doi.org/10.1007/978-3-030-38677-1_3)
- Nasution, M.K., Noah, S.A.M., Saad, S.: Social network extraction: superficial method and information retrieval. arXiv preprint [arXiv:1601.02904](https://arxiv.org/abs/1601.02904) (2016)
- Poon, J., Buterin, V.: *Plasma: scalable autonomous smart contracts*. White Pap. 1–47 (2017)
- Rahim, N.F., Bakri, M.H., Yahaya, S.N.: Fintech and Shariah principles in smart contracts. In: *FinTech as a Disruptive Technology for Financial Institutions*, pp. 207–220. IGI Global (2019)
- Razali, S.S.: *Islamic law of contract*. Cengage Learning (2010)
- Saleh, N.: Civil codes of Arab countries: the Sanhuri codes. *Arab Law Q.* **8**(2), 161–167 (1993)
- Suyuti, H. J.-D.: *Ashbah wa-al-Naza'ir fi Qawa'id wa-Furu' Fiqh al-Shafi'iyah*. BEIRUT : Dar Al Kitab Al Arabi, Beirut (2006)
- Szabo, N.: Smart contracts: building blocks for digital markets. *EXTROPY The J. Transhumanist Thought* **18**(2), 16 (1996)
- Szewczyk, P.: Development of the applicability of blockchain technology in industry and services. *Zeszyty Naukowe. Organizacja i Zarządzanie/Politechnika Śląska* (2018)
- Yoo, S.: Blockchain based financial case analysis and its implications. *Asia Pac. J. Innov. Entrepreneurship* **11**(3), 312–321 (2017)
- Zheng, Z., Xie, S., Dai, H.N., Chen, W., Chen, X., Weng, J., Imran, M.: An overview on smart contracts: challenges, advances and platforms. *Futur. Gener. Comput. Syst.* **105**, 475–491 (2020)
- Zou, W., et al.: Smart contract development: challenges and opportunities. *IEEE Trans. Softw. Eng.* (2019)
- Zuhayli, W., Eissa, M.S.: *Financial Transactions in Islamic Law*: Dar al-Fikr (2007)



