THE ACCEPTANCE OF BLOCKCHAIN SYSTEM AMONG ZAKAT USERS: CASE OF PENGKALAN CHEPA, KELANTAN

Nurhaiza Nordin, NurNaddia Nordin, Mariam Syahirah Ab Kadir ,Mas Adiella Fauzi , Masyitah Hamran and Meor Muhammad Khalis Meor Hamdan

Faculty of Entrepreneurship and Business
Universiti Malaysia Kelantan

Corresponding email: haiza@umk.edu.my

ABSTRACT

This study was carried out to identify most important factors that affecting the acceptance of the blockchain system with several factors of knowledge, social influence and performance expectancy among zakat users in Pengkalan Chepa, Kelantan. A quantitative research technique in descriptive field of survey method was adopted in this research. A total of 132 respondents which made up from zakat users in Pengkalan Chepa, Kelantan were participated in the study from whom data were collected using questionnaire. The method data analysis were made using Statistical Package for the Social Sciences (SPSS). Using the evaluating by pearson's correlation coefficient analysis, frequency distribution analysis, descriptive analysis and reliability analysis were use in this research. The findings reveal a significant positive relationship between knowledge, social influence, performance expectancy and the acceptance of the blockchain system among the zakat users. However, performance expectancy is the most important factor that influence the acceptance of blockchain system among zakat users. The study provides recommendations on zakat institutions to empower their administrative system to adapt with new technology such as blockchain system to accommodate the administration of zakat to be more efficient and transparent.

Keyword(s): Blockchain System, Zakat Users, Knowledge, Social Influence, Performance Expectancy

1.0 INTRODUCTION

Zakat is the third mainstay of Islam. In Arabic, the word is gotten from the root, "z-k-a". The action word zakka, "to purge" additionally signifies, "to influence something to grow and develop" (Al-Sayyid, 1991). Zakat is automatic or mandatory to the each Muslim that are qualified to satisfy the commitments (Yusuf, 1999). In the new era of technology that rapidly grow and information just in the fingertips of human beings, Chief Executive Officer of Islamic Banking and Finance Institute Malaysia (IBFIM), Yusry Yussof recommended that the zakat institution also need to rapidly follow the trend of the new technology to catch up with the demand of zakat payer and its receiver. However, there are some issues and problems occur in the zakat institution in managing the funds.

The issues is about the unorganised zakat distribution. It translates to the fact that zakat distribution system must change along with new technology such as blockchain technology in which it will help to increase efficiency of zakat management in Malaysia (Siti, Shifa and Mariani, 2018). The neediness issues still happen despite with the fact that dissemination has been actualized. Thus, blockchain technology makes the transaction between the zakat distributors, zakat institution and zakat receiver will now be trackable, auditable and immutable. This is the

essential qualities to ensure the efficiency, accountability and transparency to the distribution and collection of zakat fund (Khairani, 2018).

Hairunnizam, Sanep and Radiah (2009) demonstrated there was a ton of zakat surplus which were not circulated to the asnafs by the zakat foundation. It will prompt the wastage and bad form Muslim financial aspects. In the meantime, this circumstance will add to the awful impression towards the capacity of zakat organization if this foundation unfit to appropriate zakat to the beneficiaries decently and exhaustively (Hairunnizam, Sanep snd Radiah, 2009). Thus, in this study is to examine the factors of knowledge, social influence, performance expectancy that influence the acceptance of the blockchain system among zakat users in Pengkalan Chepa.

2.0 LITERATURE REVIEW

Knowledge about zakat is one of the significant variables influencing zakat payment among public servants in the environment of compliance behavior of zakat exposed by Yusuf (2017). It prove that knowledge about zakat significantly influenced zakat compliance. Blockchain is a distributed database system that records transactional data or other information. It is a data structure that combine called blocks, data records in a chain. The concept of blockchain was proposed by Zhi et al. (2017) blockchain is a foundation technology that supports the implementation of the industries. When a user want to search for a particular knowledge, a search query will be formulated in the knowledge application. It will then look the knowledge chain of the distributed knowledge to find the most related knowledge (Zhi et al., 2017). Basically, a blockchain is a distributed, transactional database. Lack of knowledge among small business owners made them not to comply with a tax obligation (Bernadette, Christian and Erich, 2010). Less of knowledge was likely to lead to non-compliance of tax behavior. It concluded that zakat user has high ethics and that individuals' tax knowledge is a key on their compliance behavior.

Social influence is significant to the acceptance of blockchain system among zakat users. Social influence had a strong influence on desire, proposing the evaluation of partners expect a significant work in the affirmation of blockchain framework (Nicole, Morgan, Adrian and Anita, 2015). While, according to Reham and Muhammad (2016) social influence is characterised as how much an individual feel others' conviction on the significance of the utilization of the new innovation. A few examinations have likewise appeared social impacts add to one huge pointer to foresee conduct goals of innovation acknowledgment (Hsiu-Ping, Yonggui, Jo-Hi and Chueh, 2015). The unified hypothesis of acknowledgment and utilization of innovation (UTAUT) recommends that social influence is a significant factor in deciding client acknowledgment of a data innovation (Bing and Xiaohui, 2017). At the point when an individual sees that others use of blockchain and see the benefits of its work, that individual will turn out to be additionally eager to utilize blockchain, which can increment both present and future use of blockchain advances. On the off chance that the individual has acknowledged the social influence and has gotten positive input from the significant network, this may additionally prompt fulfilment for the person who is accommodating and following the standards (Juho and Jonna, 2015). Besides, social influence has been appeared to influence people's practices in selection of cell phone administrations, versatile internet (Nicole et al., 2015) and online game networks. For new innovation appropriation including availability among friends, individuals will in general depend vigorously on distributed correspondence and social standards are hence vital predecessors for the selection of innovation

with system. Also, social influence may likewise have a circuitous impact by means of apparent convenience on aim to receive blockchain (Nicole et al., 2015).

Performance expectancy is one of the factor that influence individual behavior intention or acceptance to use blockchain system on zakat institution. Performance expectancy is a measure of believers of an individual to use the system to get the required results of the work (Venkatesh, Morris, Davis and Davis, 2003). Performance expectancy levels represent how a zakat payer and receiver believes that new blockchain system on zakat management system will improve performance and change their perception and acceptance towards the new technology of blockchain system. This factor is like seen helpfulness from TAM and is perceived to be a central property in affecting person's disposition towards utilizing any framework (Angela, Greg and Rodger, 2004). Angela, Greg and Rodger (2004) further characterize performance expectancy as how much an individual trusts that utilizing a specific biometric framework would satisfy the association's security gets to necessities in a specific area. Ra'ed, Ali, Ashraf and Mahmoud (2016) analyzed the demonstrating factors that influencing use conduct of understudies towards e-learning frameworks in Lebanon. This exploration was investigated the components that effect or impact use conduct of understudies towards e-learning frameworks in Lebanon. Performance Expectancy is one of the elements that impact the conduct aim towards acknowledgment to this examination. This examination about an individual or an individual trusts that utilizing an innovation can build his or her exhibition and utilizing an innovation can be helpful for the person in question. Performance expectancy speaks to on how an individual trusts that blockchain utilization in zakat frameworks will change their conduct aim to utilize the zakat frameworks and increment his or her presentation.
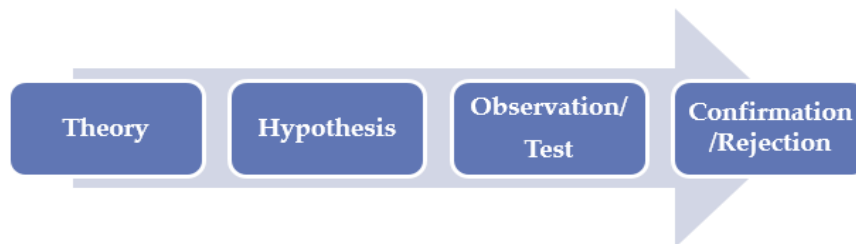
3.0 METHODOLOGY

Figure 3.1: Deductive Research Approach

The research that used is flow of deductive research approach (Figure 3.1) and theory of Technology Acceptance Model (TAM) has been stretched out to incorporate emotional standards to clarify apparent handiness and utilization goals regarding social impact and subjective instrumental procedures (Venkatesh et al., 2003) which is known as Unified Theory of Acceptance and Use of Technology (UTAUT). Next was Social Influence model of technology adoption (SIM) that utilization of social influence develops as the producessor to Technology Adoption.

The study used quantitative research method and using causal research design where the analyst of components and impact connection between the knowledge, social inflence and performance expactency where it accepted to influence the acceptance of blockchain system on

zakat users . This investigation will have the review inquire about in light of the fact that the examination is mean to get the related information of which the acknowledgment of blockchain on zakat client can affected by the components, for example, knowledge, social influence and performance expectancy. By using open questionnare to get all the data and information about respondents. Questionnare is a set of printed or written questions with a choice of answers for the purposes to study about the acceptance of blockchain system among zakat users.

The respondents are mainly focused on zakat users that reside in Pengkalan Chepa. A list of the zakat receiver who represent the Pengkalan Chepa population for 2018 will be obtain from Majlis Agama Islam Kelantan (MAIK) and serve as a sampling frame for this paper. From the data the researcher gain from MAIK department, there are around 200 population. According to the table by Krejcie and Morgan (1970), since the populations for this study are 200 asnafs, the sample size will be 132 asnafs.

This research has been used stratified random sampling . The population is divided into strata which are characteristic like gender (male and female), age (19 until 30 years old and above), marital status (single and married) and educational level (STPM, Matriculation, Diploma, Degree, Master and PhD). The selection of sample will be based on opportunity sampling technique. There are about 200 numbers of zakat users at the time of research. Based on the Krejcie and Morgan (1970) this research must take at least 132 respondents. Information gathering that will utilized is quantitative research. The information aggregated would dissect using Statistical Package for the Social Sciences (SPSS).

4.0 RESULTS AND DISCUSSION

4.1 Frequency Distribution Analysis

Table 4.1: Demographic Frequency Distribution Analysis

Demographic Profile	Percentage (%)
Gender	
Male	34.10
Female	65.90
Age	
19-22 years old	37.12
23-26 years old	33.33
27-30 years old	4.55
31 years old and above	25.00
Total	100%
Marital Status	
Single	72.73
Married	27.27
Education Level	

STPM/Matriculation	18.94
Diploma	12.88
Degree	62.12
Master	3.79
PhD	2.27
Total	100%

4.2 Reliability Analysis

Table 4.2: Cronbach's Alpha Results

Indicator	Cronbach's Alpha
Knowledge	0.734
Social Influence	0.788
Performance Expectancy	0.899
The Acceptance of Blockchain System among Zakat Users	0.889
Total	0.930

Based on the Table 4.2, the highest cronbach's alpha value is performance expectancy which is 0.899. It shows that the strength of association for performance expectancy is very good and effective towards the acceptance of blockchain system among zakat users in Pengkalan Chepa. While, cronbach's alpha value for social influence and knowledge is 0.788 and 0.734 respectively. Furthermore, the acceptance of blockchain system among zakat users gives a cronbach's alpha of 0.889. From the analysis, concluded that performance expectancy is the most significant factor on the acceptance of blockchain system among zakat users in Pengkalan Chepa. Overall, the result of cronbach's alpha test for all variables is 0.930 which is high and excellent reliability value. Hence, it means that all factors have a good relationship and significant with the acceptance of blockchain system among zakat users.

4.3 Descriptive Analysis

Descriptive analysis are utilized to describe the fundamental highlights of the information in an examination and representation of the whole population. It give basic rundowns about the example and the measures. Together with basic designs examination, it measured by looking at the standard deviation while central tendency has been estimated by mean.

4.3.1 Descriptive Analysis of Knowledge

Table 4.3: Descriptive Analysis of Knowledge

No.	Statement	Mean	Standard Deviation
1.	Knowledge is important to zakat users know about blockchain.	4.43	0.73
2.	Proper knowledge zakat institution will provide an efficicient operation.	4.56	0.61
3.	Knowledge is important to ensure the effectiveness of zakat institution operation.	4.61	0.61
4.	Zakat institution staff need to have knowledge on blockchain system.	4.67	0.56
5.	A less knowledge will lead to non-compliance of tax behavior.	4.27	0.77
6.	Zakat user has high ethics knowledge is a key on their compliance behavior.	4.42	0.67

Based on the table, which is "Zakat institution staffs need to have knowledge on blockchain system" has the highest value of mean. Yusuf et al., (2017) said that knowledge is important because it could change attitude and perception on the acceptance of blockchain. It indicates that respondents are more agree with this statement that staff of zakat institution need to have knowledge in order to accept the application of blockchain system. The lowest mean value is 4.27 with standard deviation of 0.77 asked that "a less knowledge will lead to non-compliance of tax behaviour". It shows that respondents less agree with that statement and this supported by Zainol, Mohd and Farah (2013) who substantiated that knowledge, together with other variables was not a significant factor which related to zakat compliance behavioral intention.

4.3.2 Descriptive Analysis of Social Influence

Table 4.4: Descriptive Analysis of Social Influence

No.	Statement	Mean	Standard Deviation
1.	Social influence can attract people to use new technology.	4.51	0.57
2.	Age will influence the acceptance of blockchain system.	4.13	0.82
3.	Gender will influence the acceptance of blockchain system.	3.58	1.11
4.	Experience can influence the acceptance of blockchain system.	4.25	0.69

5.	Social influence has high influence on zakat users to accept blockchain system.	4.17	0.71
6.	Zakat users tend to receive changes and innovations based on others perspectives rather than their own self.	4.01	0.81
7.	Social influence can affect zakat users in making decision to accept blockchain system.	4.17	0.62

Table 4.4 above shows the descriptive analysis for second variable which is social influence. "Social influence can attract people to use technology" has the highest value of mean which is 4.51 and standard deviation of 0.57. It shows that mostly respondents agree with this statement as people tend to receive a specific innovation not on account of their very own influences but rather as a result of the perspectives on others (Bing and Xiaohui, 2017). "Gender will influence the acceptance of blockchain system" have the least mean value of 3.58 and standard deviation of 1.11. This indicates that this statement are not reliable and not concentrate as the mean value for both are lower and standard deviation shows higher value. Respondents are less agreeing with this statement as gender are not affecting in the decision making.

4.3.3 Descriptive Analysis of Performance Expectancy

Table 4.5: Descriptive Analysis of Performance Expectancy

No.	Statement	Mean	Standard Deviation
1	Performance expectancy can measure the believing of zakat users towards blockchain can increase performance.	4.11	0.74
2	Blockchain system is really useful to the zakat institutions.	4.23	0.77
3	Blockchain system is very useful in zakat management.	4.23	0.72
4	Transaction in blockchain system are trusted.	4.06	0.86
5	Blockchain system allows me to keep update about transaction of zakat.	4.18	0.74
6	Using blockchain helps me know the transactions in zakat.	4.15	0.81
7	Blockchain system is a tool to standardize the zakat management.	4.15	0.72

Table 4.5 shows descriptive analysis for the third variable which is performance expectancy. The highest mean value is 4.23 for "blockchain system is very useful in zakat management" with standard deviation of 0.72. That means most of the zakat users believe that blockchain system is useful in helping the operation of zakat management to be more effective as performance expectancy is a measure of believers of an individual to use the system to get the

required results of the work (Venkatesh et al., 2003). The very small standard deviation shows that the answers are very projectable to a larger group of people. While, for the lowest mean value is 4.06 for "Transaction in blockchain system are trusted" and standard deviation of 0.86. That mean the zakat users not really trust on the transaction that use blockchain system.

4.3.4 Descriptive Analysis for the Acceptance of Blockchain System among Zakat Users

Table 4.6: Descriptive Analysis of the Acceptance of Blockchain System among Zakat Users

No.	Statement	Mean	Standard Deviation
1	Increase in awareness and utilization of the system improves acceptance of blockchain on zakat users.	4.37	0.66
2	I think by using blockchain technology helps to fulfill human needs and comfortability.	4.12	0.76
3	Using the latest technology helps improve the work flow and give benefits to zakat institution.	4.31	0.72
4	Zakat institution will not affected on implementation of blockchain system in term of human resources and finance.	4.05	0.86
5	Blockchain system is secure and make zakat administration work systematically and efficient.	4.20	0.87
6	More advertisement needed to give information about blockchain system.	4.53	0.64
7	A unique characteristic that offer by blockchain technology give guarantee of safety to zakat users.	4.25	0.76

Table 4.6 shows the mean and standard deviation value for dependent variable which is the acceptance of blockchain system among zakat users. "Advertisement needed to give information about blockchain system" has the highest mean value which is 4.53 and standard deviation of 0.64. It proposed by Nurul, Mahlindayu, Izzatul, Masdiah and Rusli (2014) that is necessity of improving an awareness and utilization of new system and technology. It shows that respondents are agree with this statement as people are lacks of awareness and information about blockchain system due to Malaysian environment is not ready for the technology advancement. The lowest mean value is 4.05 and standard deviation of 0.86 for "Zakat institution will not affected on implementation of blockchain system in term of human resource and finance". This is because the implementation of blockchain will give impact to zakat organization.

4.4 Pearson's Correlation Coefficient Analysis

Table 4.7: Correlation Coefficient Results

Independent Variables	Correlation Coefficient (r)
Knowledge	0.522**
Social Influence	0.583**
Performance Expectancy	0.750**

** Correlation is significant at the 0.01 level (2-tailed)

Hypothesis 1 : Knowledge

H1 : Knowledge is positive effect to the acceptance of blockchain system among zakat users in Pengkalan Chepa.

The value of pearson's correlation (r) is 0.522 which indicate strong positive linear correlation. This means that there are significant relationship between knowledge and the acceptance of blockchain system among zakat users. Therefore, it can be conclude that knowledge can give positive effect to the acceptance of blockchain on zakat users in Pengkalan Chepa ($0.5 < r < 1$). Therefore, hypothesis 1 (H1) is accepted.

Hypothesis 2: Social Influence

H2 : Social influence is positive effect to the acceptance of blockchain system among zakat users in Pengkalan Chepa.

The value of pearson's correlation (r) for second independent variable which is Social Influence had 0.583 ($0.5 < r < 1$) which indicate to strong positive linear correlation. This shows that social influence gives big impact on the acceptance of blockchain system among zakat users in Pengkalan Chepa. Hence, hypothesis 2 (H2) is accepted.

Hyphothesis 3 : Performace Expectancy

H3 : Performance expectancy is positive effect for the acceptance of blockchain system among zakat users in Pengkalan Chepa.

The table above shows that the value of pearson's correlation (r) is 0.750 ($0.75 < r < 1$) which indicate to strong positive linear correlation. Therefore, it can be conclude that performance expectancy get the highest positive impact on acceptance of blockchain system among zakat users in Pengkalan Chepa. Therefore, the hyphothesis 3 (H3) is accepted.

5.0 CONCLUSION AND RECOMMENDATION

In conclusion, this study found that knowledge, social influence and performance expectancy has a significant value toward the acceptance of blockchain system among zakat users in Pengkalan Chepa. However, the outcome of this study show that performance expectancy is the most crucial determinants that affect the acceptance of blockchain system among zakat users and the least crucial determinants is knowledge. Besides, this research shows people is ready to accept and use the blockchain system in zakat institutions. Thus, zakat institutions need to empower their administrative system to adapt with new technology such as blockchain system to accommodate the administration of zakat to be more efficient and transparent. Furthermore, the researcher may also do a research on the readiness of zakat institutions to administer the system and its operation with blockchain system. Next, the researcher also recommend that future research will touch deeper upon the efficiency of the blockchain system once it is been roll out for the public usage on zakat institutions. Hence, the abroad researches need to be done to tackle the issue of inefficient of zakat institutions for the betterment of the zakat institutions and its beneficiaries.

References

Al-Sayyid, S. (1991). Fiqh us-Sunnah: Az-Zakah and As-Siyam, American Trust Publications, Washington.

Angela, C., Greg, S., & Rodger, J. (2004). Biometrics Acceptance-Perceptions of Use of Biometrics. *Security E-Business, Assurance Research Group ACIS 2004 Proceedings*, 28. (pp. 2-7). University of New South Wales Sydney NSW 2052 Australia.

Bernadette, K., Christian, K., & Erich, K. (2012). Tax compliance of small business owners: A review. *International Journal of Entrepreneurial Behavior & Research*, *18*(3), 330-351.

Bing, W., & Xiaohui, C. (2017). Continuance Intention to Use MOOCs: Integrating the Technology Acceptance Model (TAM) and Task Technology Fit (TTF) Model. *Computers in Human Behavior*, *67*, 221-232.

Hairunnizam, W., Sanep, A., & Radiah, A. K. (2009). Pengagihan Zakat oleh Institusi Zakat di Malaysia: Mengapa Masyarakat Tidak Berpuas Hati? *Jurnal Syariah*, *17*(1), 89-112.

Hsiu-Ping, Yonggui, W., Jo-Hi, H., & Chueh, C. (2015). Exploring Factors Affecting Students' Continued Wiki Use for Individual and Collaborative Learning: An Extended UTAUT Perspective. *Australasian Journal of Educational Technology*, *31*(1), 16-31.

Juho, H., & Jonna, K. (2015). Working Out for Likes: An Empirical Study on Social Influence in Exercise Gamification. *Computers in Human Behavior*, *Volume 50*, 333-347.

Khairani, A. N. (2018, September 2). *I*slamic Finance: Using Blockchain to Improve Transparency of Zakat Process. Retrieved May 22, 2019, from theedgemarkets.com: https://www.theedgemarkets.com/article/islamic-finance-using-blockchain-improve-transparency-zakat-process

Krejcie, R. V., & Morgan, D. W. (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement, 30,* 607-610.

Nicole, K. L., Morgan, M., Adrian, P., & Anita, L. Z. (2015). Enjoyment and Social Influence: Predicting Mobile Payment Adoption. *The Service Industries Journal*, *Vol. 35, No.* 10, 537-554.

Nurul, N. A., Mahlinday, T., Izzatul, U. R., Masdiah, A. H., & Rusli, A. R. (2014). The Application of Unified Theory of Acceptance and Use of Technology (UTAUT) for Predicting the Usage of E-Zakat Online System. *International Journal of Science and Research (IJS)*, *3*(4), 63-70.

Ra'ed, M., Ali, T., AshrafBany, M., Mahmoud, M. (2016). Modeling Factors Affecting Student's Usage Behaviour of E-Learning Systems in Lebanon. *International Journal of Business and Management*; *Vol 11 No. 2,* 299.

Reham, A. A., & Muhammad, R. M. A (2016). Perspectives of Students' Behavior towards Mobile Learning (M-learning) in Egypt: an Extension of the UTAUT Model. *Engineering, Technology & Applied Science Research, Vol 6, No. 4,* 1109-1114.

Siti, N. E., Shifa, M. N., & Mariani, A.M. (2018). Fintech (Blockchain) dan Pengurusan Zakat di Malaysia/Financial Technology and Zakah Management in Malaysia. *Prosiding Persidangan Kebangsaan Ekonomi Malaysia Ke 13 (2018).* Persidangan Kebangsaan Ekonomi Malaysia.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of Information Technology: Toward a unified view. *MIS quarterly*, 425-478.

Yusuf, D. al-Qardawi. (1999). *Fiqh-az-Zakat : The Rules, Regulations and Philosophy of Zakat in the Light of the Qur'an and Sunna (A Comparative Study).* Dar al-Taqwa Ltd. (UK).

Yusuf Haji-Othman, M. S. (2017). The Influence of Knowledge, Islamic Religiosity Yusuf, H. O., Mohd, S. S., Mohd, S. A., Mohd, S., & Siti, H. (2017). The Influence of Knowledge, Islamic Religiosity and Self-Efficacy on the Intention to Pay Income Zakat among Public Educators in Kedah, Malaysia. *International Journal of Academic Research in Business and Social Sciences*, *Vol. 7*, *No. 11,* 1117-1127.

Zainol, B., Mohd, Z. O., & Farah, M. N. A. (2013, June). Zakat Compliance Intention Behavior on Saving among Universiti Utara Malaysia's Staff. In *Proceeding of the International Conference on Social Science Research* (Pp. 145-155).

Zhi, L., Wang. M. W., Guo, L. Layne, L., Jiadong, H., & G. Q. H. (2018). Toward Open Manufacturing: A Cross-Enterprises Knowledge and Services Exchange Framework Based On Blockchain and Edge Computing. *Industrial Management & Data Systems*, *Vol. 118*1 Issue: 1, 303-320.