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Antecedents of Sustainable Performance in Manufacturing Organizations: A Structural Equation Modeling Approach

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Abstract: Sustainability is integral for organizations to manage environmental issues. Environmental awareness among stakeholders builds pressure on manufacturers to adopt green human resource management practices (GHRMPs), environmental management system (EMS), and foster organizational citizenship behavior for the environment (OCBE) to improve sustainable performance (SP). This study investigates the mediating effects of OCBE and EMS on the relationship between GHRMP and SP among ISO14001-certified manufacturing firms and SP. The quantitative design employed, and data of 227 respondents were analyzed via the SEM technique using AMOS 24™. Thus, findings revealed that GHRMP is positively related to SP, while OCBE and EMS partially mediated the relationship between GHRMP and SP among ISO14001-certified Malaysian manufacturing firms. This study makes novel academic and practical contributions to green HRM, organizational behavior, and sustainable performance. However, this study also has some limitations.

Keywords: green human resource management practices; organizational citizenship behavior for the environment; environmental management system; sustainable performance; structural equation modeling



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1. Introduction

Sustainability is vital for organizations to manage ecological issues with global magnitude. Economic prosperity and human wellbeing are linked with how effectively we can manage the environment [1,2]. In the past, manufacturing organizations mainly focus on economic growth, leaving behind social and environmental aspects of sustainable performance (SP), creating an imbalance among these dimensions [3,4]. The manufacturing organizations need to address environmental issues due to the dramatic increase in carbon dioxide (CO₂) emissions resulting in adverse outcomes [2,5,6].

Similarly, growing environmental awareness among stakeholders forces manufacturing organizations to seek out green human resource management practices (GHRMPs), adopt environmental management systems (EMSs), and pro-environmental behaviors (PEBs) to enhance SP [7–9]. Sustainable performance (SP) is important for researchers in management literature [3,10,11]. SP refers to integrating three dimensions, including economic, social, and environmental performance [12]. Manufacturing firms need to resolve environmental problems [5,13,14] by adopting GHRMP [15] to improve SP [16]. The green human resource management practices (GHRMPs) were initially discussed

by Renwick et al. (2008), refers to aligning traditional HRM practices and environmental management [15,17]. The manufacturing firms face issues in instilling GHRMP and environmental initiatives due to rising environmental standards, ineffective ecological regulations, and low environmental compliance in the context of developing economies [18–20]. Similarly, GHRMP is also important for fostering PEB [16,21,22] and adopting EMS ISO14001, e.g., [19,23].

EMS is an environmental standard, e.g., ISO4001, adopted by organizations worldwide. EMS can be more effective when both management and employees are supportive [24]. For EMSs to function effectively, organizations should also enhance their employee's environmental awareness. Similarly, EMS helps organizations to meet environmental objectives and performance. Research findings showed that ISO1400 certified firms better manage SP than non-certified firms [18]. However, merely adopting ISO14001 and GHRMP is not sufficient to improve SP. Subsequently, EMS ISO14001 success is also based on modifying traditional behaviors towards more PEB [2,25]. Organizational citizenship behavior for the environment (OCBE) is a specific type of PEB that is integral for successfully implementing EMS and GRHMP to ensure improvement in the SP of the firm [16,21].

According to contemporary research, sustainability is one of the key concerns for manufacturing firms. The manufacturing organizations need to address environmental issues due to the dramatic increase in carbon dioxide (CO₂) emissions resulting in adverse outcomes, e.g., air and water pollution and solid waste degrading environmental performance [2,5,6], creating an imbalance between economic and environmental performance. Sustainable performance (SP) is increasingly recognized as central for management research, especially for manufacturing firms [3,10,11]. In response to addressing environmental problems and managing stakeholder demands, organizations are adopting sustainable approaches [5,13,14]. To summarize, organizations should adopt GHRMP [15], and comply with EMS ISO14001 certification [18,23,26] fostering OCBE [27,28], to improve SP. Therefore, the current research investigates the mediating role of OCBE and EMS on the relationship between GHRMP and SP among ISO14001-certified Malaysian manufacturing firms.

1.1. Research Objectives

The current study has developed three objectives.

- To investigate the relationship between GHRMP and OCBE in predicting SP of ISO14001-certified Malaysian manufacturing firms.
- To investigate the relationship between GHRMP and EMS in predicting SP of ISO14001-certified Malaysian manufacturing firms.
- To test the indirect effects of OCBE and EMS on the relationship between GHRMP and SP of ISO14001-certified Malaysian manufacturing firms.

1.2. Research Significance

Green human resource management (green HRM) is a relatively new area for research that aims to ensure SP and long-term survival of corporate sustainability [11,29,30]. A recent research study has examined the direct relationship between green HRM practices, i.e., green selection and recruitment (GSR), training and development (GTD), assessment and rewards (GAR), and sustainable performance (SP). The study findings confirmed the positive relationship between Green HRM practices (GSR, GTD, and GAR) with SP, respectively. Findings showed that GAR was not significantly related to SP [31]. The current study extends this model, uses EMS and OCBE as mediators, and investigates the key antecedents of sustainable performance. Likewise, prior studies confirmed that green HRM is used for successful EMS implementation and links sustainability with HRM, bringing higher economic benefits [15,18]. Contemporary scholars revealed the understanding that GHRMP depends on green behaviors within organizations [32].

Organizations should encourage employees to adopt OCBE in mitigating environmental problems [7]. Similarly, implementation of the EMS ISO14001 also largely depends on

OCBE [22]. Organizations should use GHRMP to promote OCBE, encouraging employees to behave sustainably [27]. Thus, only using GHRMP to promote OCBE is insufficient, but employees should also support EMS initiatives [23]. Similarly, GHRMP plays an influential role in achieving SP. Despite this, previous research investigated the role of EMS in various aspects, e.g., EMS motivations, adoption or implementation, performance standards, level of EMS diffusion in impacting performance [26], and key success factors [18]. However, several researchers believe that GHRMP can play a vital role in influencing OCBE and EMS in improving SP, e.g., [9,15,32,33]. Therefore, this study investigates the mediating effects of OCBE and EMS on the relationship between GHRMP and SP among ISO14001-certified manufacturing firms.

2. Literature Review on Green HRM Practices (GHRMPs)

Green HRM promotes sustainable practices by increasing employees' environmental awareness and commitment to address sustainability issues [34]. Green HRM focuses on environmental aspects of HRM that promote environmentalism within business processes, which results in reducing cost, enhancing employees' participation in green initiatives, and improving environmental performance [15,35]. Green HRM encompasses HRM practices, policies, and systems to make employees and organizations more sustainable [36]. Renwick et al. (2008) defined the concept of green HRM initially. His definition mainly focused on integrating HRM and environmental objectives. Most research authors have defined green HRM as aligning HRM policies and practices with environmental management objectives, e.g. [15,17,34,37,38]. This study uses the definition provided by Jabbour [39] p. 147 that "green HRM is concerned with the systemic, planned alignment of typical human resource management practices with the organizations' environmental goals." Green HRM practices (GHRMPs) are essential for organizations to achieve an environmental agenda. After reviewing the literature, the current study uses three of the mostly researched green HRM practices, such as (green recruitment and selection, green training and development, and green performance assessment and rewards).

2.1. Green Selection and Recruitment (GSR)

Pro-environmental organizations are branding themselves as a green employer for attracting new talent to build a green image [40]. Green organizations value and recruit new job applicants with better environmental know-how and job description [41]. A research survey was conducted among UK and US organizations. The findings revealed that a job applicant prefers to work with organizations that are instilling green initiatives [40]. Green HRM practices, e.g., selection and recruitment, are vital for pro-environmental employers attracting fresh graduates to meet environmental agendas [15]. Green recruitment and selection are critical in fostering green behavior and mitigating environmental management issues. Individual green competencies influence green practices and performance goals [42]. Green recruitment practices should enable recruits to understand the organization's environmental culture. However, organizations should implement environmental care programs and policies with top-down measures by including employees' input in decision making to meet environmental objectives [43].

2.2. Green Training and Development (GTD)

Environmental training can build and establish sustainability competencies in organizational human resources [44]. Green training and development play an essential role in implementing green HRM practices [45]. Similarly, green training is a necessity for advancing environmental management systems (EMSs). Organizations are adopting sustainable strategies and green HRM practices to resolve environmental issues and enhance environmental performance [40]. Green HRM practices, i.e., recruitment, training, development, and learning, enhance firm performance and result in other useful environmental outcomes [46,47]. Organizations should educate and train their employees through environmental training to achieve sustainable performance. In a broader context, organiza-

tions should support employees in developing creative ideas to promote environmental sustainability.

2.3. Green Assessment and Rewards (GAR)

Pro-environmental organizations are rewarding employees for their effort towards green organizational goals [48]. Integrating environmental performance aspects into a performance management system can mitigate environmental degradation [49]. Managers related to environmental performance appraisal issues should be held responsible for their green initiatives [15]. Continuous feedback on green performance keeps the employees aware of taking their environmental responsibilities to improve green initiatives and achieve EM outcomes [50]. Previous research has highlighted the scope of future studies on green appraisal, environmental policy, and EMS. Green compensation plans motivate employees to play their part in achieving EM initiatives [15]. It is challenging for firms to evaluate green behaviors and environmental performance via an affective reward package [51]. In summary, organizations should fairly reward employees' environmental behaviors and performance for achieving environmental goals. Major US-based corporations assess and reward performance based on environmental objectives. [52]. Mainly, HRM primary practices, i.e., environmental rewards and recognition, can play a vital role in corporate sustainability to meet environmental objectives [53].

2.4. Review on Organizational Citizenship Behavior for the Environment (OCBE)

The literature on consumer pro-environmental behaviors (PEBs) broadly consisted of two perspectives. The first perspective is mainly based on environmental management (EM) research, focusing on green behaviors and employees' role in fostering these behaviors [54]. Other relevant areas in this approach are environmental practices and organizational change process and their effectiveness based on employees' involvement in green behaviors [55]. The second perspective originated from industrial and organizational (IO) psychology literature. This IO psychology provides a central podium to organizations in taking green initiatives beyond psychological research [33]. Over the years, research on individual green behaviors has flourished [6]. More than a dozen labels are used in the literature to explain the concept of pro-environmental behaviors (PEBs). Although PEB is a broader term used for various types of discretionary behaviors [56], environmental behaviors; green behaviors; eco-friendly behaviors; environmentally responsible behaviors; organizational citizenship behaviors for the environment (OCBE) [22]. Most scholars equate PEB with OCBE in the literature, e.g., [57,58], although other taxonomies also exist. Similarly, OCBE represents the individual willingness to perform environmental behaviors that facilitate employees and organization. According to research, most of the environmental behaviors, approximately 70% to 85%, are discretionary and considered OCBE. The current study mainly focuses on explaining OCBE. Due to developing literature on voluntary and discretionary behaviors, OCBE has received significant attention from researchers, e.g., [57].

The concept of OCBE originated from the classic proposition about discretionary behaviors, i.e., OCB by Organ [59]. In a work setting, individuals voluntarily perform these behaviors. The action results from these behaviors that cannot be influenced entirely or controlled through any positive or malicious act. In [28], the authors defined OCBE as "individual and discretionary social behaviors that are not explicitly recognized by the formal reward system and that contribute to a more effective environmental management by organizations." The developing literature on OCBE has essentially focused on some significant avenues, e.g., the definition, scope, and applications of OCBE; the determinants and consequences of OCBE-based theoretical lenses [25]; the measurement scales [28] and the empirical exploration of the main drivers of OCBE [60]. Nevertheless, OCBE has mostly been overlooked in the literature relating to GHRMP and SP. Moreover, the literature has focused on the organizational and extrinsic determinants of OCBE [22]. This research extends the limited literature on OCBE, i.e., informal and voluntary green behaviors [61],

such as OCBE may also act as alternative mechanisms for improving SP. This study has attempted to address this literature gap, focusing on discretionary and non-rewarded rather than organizationally prescribed behaviors [60].

2.5. Environmental Management System (EMS)

The United Nations, the World Commission on Environment and Development (WCED) has published a seminal report in 1987 on “Our Common Future” [62]. This commission’s report has provided new insight and basis for effective environmental management and decision support systems [24]. After following the same agenda, both collaborating bodies International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC), have assigned a committee to review and supervise an EMS development [63]. The first EMS ISO14001 was introduced in 1996 and upgraded in the year 2000 and 2004, respectively. According to ISO’s official website, it was reported that EMS ISO14001 is based on three main characteristics. (1) EMS identifies vital environmental aspects and controls negative organizational impacts on the environment through products and services; (2) EMS meets environmental goals and targets through a systematic approach; (3) EMS enhances organizational environmental performance and maintains continuity. The major benefits EMS ISO14001 for organization and the environment is to ensure environmental protection and foster sustainable consumption and production [64]. EMS ISO14001 aims to encourage green production, provide environmental assessment, and audit the production process [24]. Research has been conducted on ISO14001 in different disciplines worldwide. EMS ISO14001 is a fundamental tool applicable to all organizations irrespective of their size and nature [65]. Some researchers have focused on EMS ISO14001 motivation adoption or installation, performance implications standards, implementation, while other researchers have studied the standards’ potential benefits. The study has reported that stakeholder pressure can force organizations to adopt EMS ISO14001 certification, which improves environmental performance. For instance, because of this, stakeholders focus on the value of environmental initiatives [66]. However, no study has examined the relationship between green HRM practices and EMS in predicting SP. This study is unique as to examine the relationship between GHRMP, OCBE, and EMS in predicting SP among ISO14001-certified Malaysian manufacturing firms.

2.6. Sustainable Performance

The United Nations, the World Commission on Environment and Development (WCED) has published a seminal report in 1987 titled “Our Common Future” [67]. A variety of subsequent definitions has emerged based on sustainability and its connection with organizations, resulting in corporate sustainability. The concept of sustainability increasingly impacts the nature of organizations’ operations [68]. The organization must go beyond economic and regulatory compliance, integrating economic, environmental, and social performance to improve corporate sustainability and sustainable development [4]. Sustainability challenges organizations with tensions between complex economic, environmental, and social issues [10]. Sustainability is based on the triple bottom line (TBL) or sustainable performance [69]. Similarly, the concept of sustainable performance (SP) refers to integrating three dimensions: (1) economic, (2) social, and (3) environmental [70]; it is essential to integrate economic, environmental, and social dimensions to constitute SP.

To sum up, manufacturing organizations are major engines and contribute to the economy’s growth and betterment. The pace of change in manufacturing industries is accelerating primarily in social, economic, and environmental. Malaysian manufacturing industries should use green HRM practices to foster OCBE and EMS to improve SP, including social, economic, and environmental performance. The next section discusses the conceptualization of the research model based on underpinning theories.

2.6.1. Economic Performance

The first fundamental component of sustainable performance is economic performance. In the literature, economic performance was evaluated based on various indicators, e.g., profit, tax, income [71], return on assets and market share [72], and financial figures [73], assets and liabilities [74]. Stakeholders pushing organizations to meet environmental goals are equally important as economic performance creating a pathway towards achieving SP [73].

2.6.2. Social Performance

The second essential component of sustainable performance is social performance. It assesses firm performance on social indicators, e.g., social commitment, training and development, welfare support, working condition, and other employee-related benefits [75]. Similarly, social performance is equally significant, besides financial figures [73]. Moreover, other assessment indicators include employee programs, occupational health and safety, product responsibility, and consumer relations management [76].

2.6.3. Environmental Performance

Organizations are planning to meet environmental goals for securing long-standing profits. The environmental performance goals are equally important as economic performance and social performance. Organizations look for a win-win situation integrating these critical components and endorsing sustainable performance [77,78]. The third key component of sustainability performance is environmental performance. In the literature, the environmental performance of the firms was assessed across various indicators, e.g., minimal usage of harmful materials [79], lowering CO₂ emission and waste generation [80], mitigating environmental risk, and reporting environmental compliance [76].

2.7. Theoretical Foundations and Proposed Research Model

Various theories are commonly used in the literature to reflect different traditions in explaining the relationships between GHRMP, OCBE, EMS, and SP. (1) The ability, motivation, and opportunity (AMO) theory, (2) social exchange theory (SET), and (3) the natural-resource-based view (NRBV) approach by [54]. In the literature, the AMO theory is the most common theoretical framework used to explain the relationship between GHRMP and SP [15,81]. Green HRM practices positively impact performance outcomes through discretionary behavior, e.g., (OCBE) [21]. Similarly, the AMO theory enhances green HRM practices that affect employees' productivity, which improves organizational performance [82]. In this study model, the AMO theory mainly explains how GHRMP impacts SP through OCBE as discretionary behaviors, as shown in Figure 1. Secondly, the SET is an immensely influential theory for understanding workplace behavior [83]. Similarly, SET suggests employees usually display OCBE if they feel supported [84]. Applying reciprocity norms, in this context, OCBE can be viewed as a form of repayment to support sustainable initiatives. If an individual employee recognized that sustainable initiatives and practices are integral for the organization. As a result, an employee would be more likely to engage in OCBE to reciprocate the benefits [85]. In the current research model, SET theory explains the relationship between green HRM practices and OCBE in predicting SP. Thirdly, the NRBV approach is increasingly important for firms for sustaining their environmental, resource-based advantage using environmental resources [86]. The NRBV provides a foundation to understand the association between key environmental initiatives, e.g., GRHMP with EMS and SP. Based on NRBV, adopting GHRMP and the successful implementation of EMS, firms can create a sustainable competitive advantage and improve SP [87].

Figure 1 presents the current study model that GHRMPs impact SP through OCBE and EMS. The research model consisted of four variables, i.e., GHRMP as exogenous, OCBE, EMS as mediating, and SP as endogenous. The next section discusses hypothesis development and empirical studies on the individual relationship between variables.

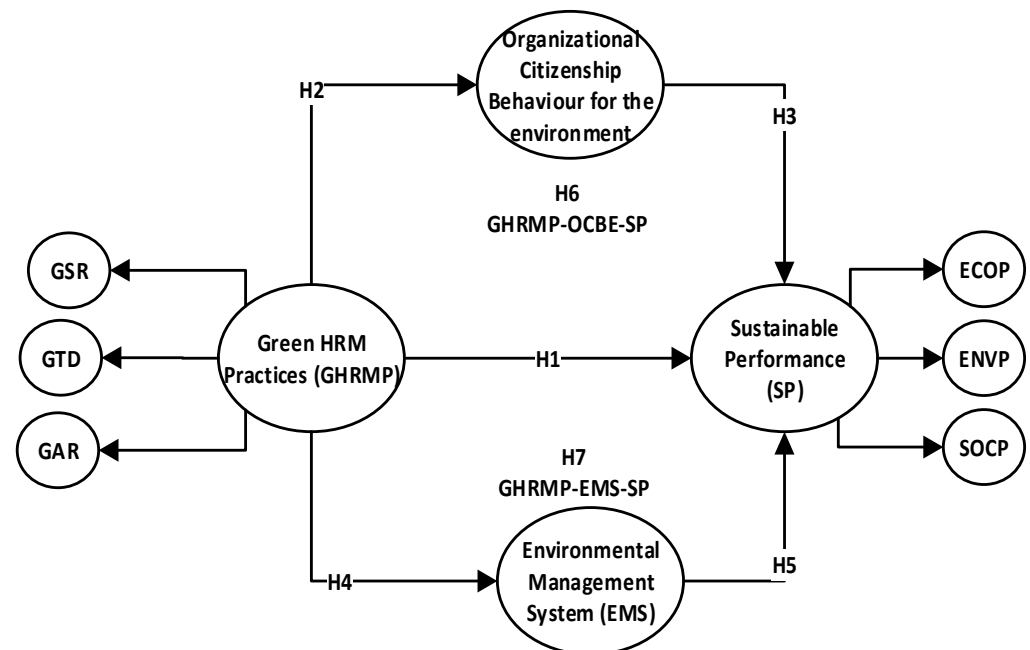


Figure 1. Research model.

2.8. Hypothesis Development: Green HRM Practices and Organizational Citizenship Behavior for the Environment (OCBE)

The understanding of the GHRMP depends on the patterns of green behaviors within organizations [88]. Likewise, OCBE also relies on the type of organization and HRM practices [57]. Moreover, low-carbon behaviors and ecological values are related to integrated HRM practices [51]. The GHRMP is deep-rooted in shared behavioral values and useful for developing a green organizational culture and fostering low-carbon behaviors [30]. Organizations should use green HRM practices to promote OCBE, encouraging employees to behave sustainably [32]. Green HRM also enhances employees' eco-friendly behavior [27]. Employee voice mechanisms such as suggestion schemes "green teams" [25] and "eco-champions" are significant green HRM strategies and values. Adopting GHRMP helps the employees to foster their OCBE [17]. A recent study had investigated the indirect effects of GHRM practices on OCBE through green employee empowerment. The finding suggested that individual green values and empowerment are essential factors that influence GHRMP and employees' OCBE [89]. Thus, based on previous literature, this study proposes hypothesis H2: GHRMP is positively related to organizational citizenship behavior for the environment (OCBE).

2.9. Organizational Citizenship Behavior for the Environment (OCBE) and SP

The literature on discretionary behaviors, especially OCBE, contributes to corporate environmental performance at both individual and organizational levels [83]. The role of OCBE is essential for corporate greening and environmental performance, e.g., and motivating employees to demonstrate high commitment towards organizational sustainability [90]. A research study identified interactive influences of GHRM practices on OCBE that impact performance outcomes [21]. A recent study has also investigated the mediating effects of GHRMP on the relationship between green employee empowerment practices and OCBE [89]. Based on the previous empirical evidence, this study proposes hypothesis H3: Organizational citizenship behaviors for the environment (OCBE) are positively related to SP.

2.10. Green HRM Practices and Environmental Management System (EMS)

Green HRM has become a key business strategy for green organizations to fosters their prolific environmental initiatives [48]. GHRMP should be aligned with EMS; otherwise,

EMS implementation cannot be successful. Consequently, GHRMP is essential to consider for EMS integration [91]. The researchers have stated that EMS ISO14001 adoption is integral for firms. EMS ISO14001 certified firms enhance opportunities to improve environmental and economic performances [92]. Prior research results have provided insights for managers to consider HRM practices to strengthen EMS diffusion's effectiveness in organizational practices [26]. Green training is a necessary component of "green HRM" practices that can improve EMS performance. The literature has suggested that the training program provides essential understanding to employees regarding environmental awareness and continuous improvements to make EMS more successful [91]. Hence, this study proposed hypothesis H4: GHRMP has a positive relationship with the EMS.

2.11. Environmental Management System (EMS) and Sustainable Performance

Environmental management system (EMS) ISO14001 is an environmental standard deployed by firms to improve environmental performance [93]. The EMS positively impacts the dimensions of SP and improves environmental performance, sustainable consumption, and production [64]. In addition to this, EMS positively influence environmental and social performance [94]. Adopting EMS ISO14001 increases financial performance, e.g., shares the value of corporate organizations. A positive relationship exists between adopting environmental management practices and organizational performance [95]. Recent research analyzed the moderating effect of EMS ISO1400 on the relationship between green innovation and financial performance [96]. In conclusion, this study proposes hypothesis H5: Environmental management system (EMS) is positively related to SP.

2.12. OCBE as Mediator Between GHRMP and SP

OCBE is known as voluntary and discretionary behaviors, e.g., the work [83] is likely to have a significant impact on sustainability performance, e.g., [97], and motivating employees towards organizational sustainability [90]. Contemporary scholars have augmented that GHRMP depends on green decisions and behaviors within organizations. Recent studies have investigated the influences of GHRMP on OCBE [21,89]. Organizations should use GHRMP to promote OCBE, encouraging employees to behave sustainably [88]. Organizations should use GHRMP to encourage OCBE, which can ultimately improve environmental performance [98].

In the literature, previous studies, e.g., [22,99], used OCBE as a mediating variable. Consequently, based on previous studies, the current study examines the mediating role of OCBE on the relationship between GHRMP and SP. Hence, this research assumes that GHRMP has indirect effects on SP through OCBE and proposes hypothesis H6: OCBE mediates the relationship between GHRMP and SP.

2.13. EMS as Mediator between GHRMP and SP

EMS ISO14001 enables high interactions between human resource management (HRM) and environmental management [100], resulting in green HRM. Similarly, green HRM is likely integral for the successful implementation of EMS ISO14001 [15]. Previous studies have revealed that EMS can improve environmental performance, e.g., [101]. The previous study findings conclude that environmental management practices (EMPs) have mediated the relationship between lean manufacturing and sustainable performance dimensions [102]. Similarly, the EMP also mediated the relationship between OCBE and environmental performance [22]. Another research study has examined the mediating role of EMS teamwork on the relationship between EMS HRM factors and perceived environmental performance [19]. Recent research analyzed the moderating effect of EMS ISO14001 on the relationship between green innovation (GI) and financial performance (FP) [96]. Consequently, based on previous studies about EMS, this research assumes that GHRMP will indirectly affect SP through EMS ISO14001 and proposed hypothesis H7: EMS mediates the relationship between GHRMP and SP.

3. Research Methodology

The research paradigm is a blend of related concepts, propositions, and assumptions adding to research and philosophical intent for undertaking a study [103]. It provides a pathway for conduction and interpretation of knowledge or research by establishing study aims, motivation, and expectations. Therefore, the research paradigm plays a significant role in conducting and choosing a research design [104]. The positivist paradigm follows the scientific methods of investigation and aims to test theories and proposed hypotheses through observation and measurement. The positivist paradigm justifies quantitative studies [105]. Quantitative research design uses a deductive approach, developing hypotheses to corroborate the theory [104]. Accordingly, this research uses quantitative research based on the deductive approach and examines the relationship between study variables using quantitative data [105]. Moreover, quantitative data were collected through survey instruments, i.e., questionnaires consist of closed-ended information on variables, e.g., GHRMP, OCBE, EMS, and SP.

3.1. Target Population and Sample Size

A total of 2651 companies were registered in the Federation of Malaysian Manufacturers (FMM) directory [106]. However, only 492 manufacturing firms were ISO14001-certified. Therefore, the current study target population was 492 ISO14001-certified Malaysian manufacturing firms listed in the FMM Directory. The ISO14001-certified manufacturing firms are widely spread across Malaysia's northern, central, and southern parts. Most of the ISO14001-certified firms are in the central region, i.e., Kuala Lumpur, Selangor, and southern region, mainly in Johor and Malacca. The target population includes subcategories within manufacturing. This quantitative study used a statistical formula based on the Krejcie and Morgan [107] method to draw a sample size from the target population of 492 ISO14001-certified manufacturing firms. Therefore, the current study targeted a minimum sample size of 216 respondents based on the Krejcie and Morgan [107] formula. This study used random probability sampling for choosing 216 ISO14001-certified manufacturers. Moreover, the constructs of GHRMP, OCBE, EMS, and SP were evaluated at the organizational level. Key respondents for this study were HR managers of ISO14001-certified manufacturing firms.

3.2. Data Collection and Response Rate

Many scholars have highlighted the importance of the response rate in survey research [108]. In contrast, a low response rate hampers research validity and generalizability [109]. Similarly, scholars have argued that a more than 50% response rate is considered adequate for research to validate results [104,108,110]. Thus, researchers must understand the importance of a reasonable response rate for validating the results. Based on this viewpoint, the current study targeted a relatively larger sample to avoid low response rate issues and achieve the required data for analysis via SEM. Survey questionnaires were distributed among 350 ISO14001-certified Malaysian manufacturing companies. A total of 248 questionnaires were returned from the participant firms, with a 71% response rate.

3.3. Survey Instruments

This study used survey questionnaires of four latent variables, GHRMP, OCBE, EMS, and SP. Previous research confirmed that a questionnaire is one of the central tools for data collection [111]. The current study measured GHRMP based on 12 items survey instruments designed with a 5-point Likert scale by Jabbour [46]. This study measured OCBE based on the 12-items measurement scale developed by Boiral and Paillé [28]. The EMS was measured via a 6-items measurement scale developed by Prajogo et al. [112]. This study operationalized SP with a 13-items measurement scale adopted from [113] with three dimensions, i.e., economic, social, and environmental. See Appendix A for details of all variable items.

4. Data Analysis and Results

Before using SEM analysis, the basic assumptions about data completeness and extreme values must be addressed. Likewise, the data were checked and refined through various cleaning tests, e.g., normality and multicollinearity tests were performed for all cases and variables such as GHRMP, EMS, OCBE, and SP. In the second step, the descriptive analysis was performed. Data were examined for outlier performing normality assessment tests using AMOS 24. In total, twenty-one cases were removed from the data. A total of 248 questionnaires were returned with a response rate of 71%. The response rate above 50% is good enough for the generalization of results. A response rate of less than 50% represents a minority and is not good enough to generalize results [114]. Thus, after removing 21 outlier cases, the cleaned data of 227 questionnaires were used for further SEM analysis [110].

4.1. Multicollinearity

Multicollinearity is one of the main problems in analyzing multivariate data. Similarly, before performing SEM analysis, this assumption should be addressed. The current study performed collinearity diagnostics through regression using SPSS 22. To detect collinearity, two factors, i.e., (1) variance inflation factor (VIF) and (2) tolerance values, were assessed. If VIF is more than 10.0, and the tolerance value is less than 0.10, it shows substantial collinearity issues (Kline, 2015). Results showed that VIF ranged from 1.602, 1.821, to 1.884, which is less than 10. Similarly, the tolerance value ranged from 0.531, 0.549, to 0.624, more than the critical value of 0.1. Hence no multicollinearity issue exists.

4.2. Company Background

Descriptive statistics analysis reported that nine different manufacturing firms participated in this study, including (1) Food, Beverages, and Tobacco, (2) Chemical, including Petroleum, (3) Electrical and Electronics, (4) Fabricated Metals, (5) Machinery, (6) Plastic, (7) Transport, (8) Rubber, (9) and Others. Results revealed that major industrial groups in the sample were Food, Beverages, and Tobacco (23%), Electrical and Electronics 19%, Chemical, including Petroleum 14%, and Fabricated Metals 10%. However, the rest of the industrial groups were less than 10%, including Machinery 9%, Plastic 6%, Transport (8%), Rubber 7%, and Others 4%. The highest number of employees, approximately 27% from a bracket of 501–1000, followed by 24% to 101–250. Most of the participants in this study were from medium and large firms. Most of the firms that participated in the study, approximately 32% were established between 1991 and 2000. The next highest category by percentage was around 25% of firms established between 2001 and 2009. Only 18% of firms that participated in the study were found between 2010 and 2016. In the next section, we explore structural equation modeling (SEM) analysis, performing a measurement, and structural models.

4.3. Second-Order Measurement Model

Second-order confirmatory factor analysis (CFA) was performed in assessing the measurement model fit. The measurement model consisted of four main constructs, i.e., GHRMP, OCBE, EMS, and SP. First-order constructs represented the OCBE and EMS, while GHRMP and SP were represented by the second order. Initial results revealed that some items, such as GSR04, GTD04, GAR04 EMS04, EMS05, OCBE06 to OCBE12, and standardized loading, were < 0.50 item loadings and removed accordingly. The initial model fit result confirms that four indices, such as GFI, AGFI, NFI, and TLI values, were more than 0.80 but less than 0.90 or above. The value of all goodness fit indices should be equal to or more than 0.90. So, items with loadings less than 0.50 were removed, and also, the error term e101 and e105 correlated. The adjusted measurement model with acceptable fitness indices e.g., P-Value = 0.000 RMSEA = 0.051 GFI = 0.952 AGFI = 0.926 CFI = 0.924 TLI = 0.914 NFI = 0.928 as shown in Figure 2. The next step was to calculate the convergent and discriminant validity of all four constructs: GHRMP, OCBE, EMS, and SP.

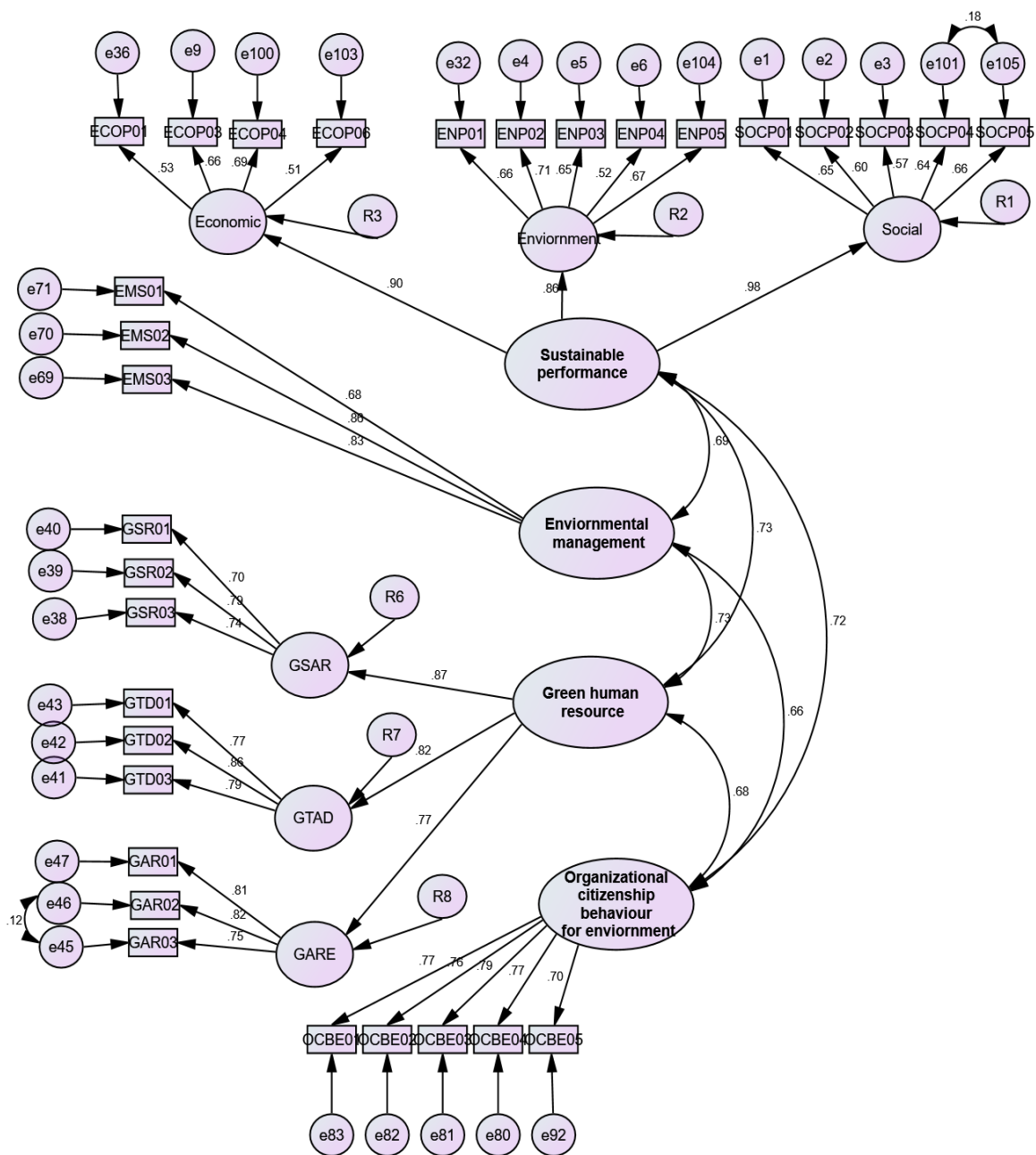


Figure 2. Adjusted second-order measurement model—confirmatory factor analysis (CFA).

4.4. Convergent Validity

Assessment of convergent validity (CV) is one of the critical components in assessing the measurement model. The assumption of convergent validity (CV) is based on substantiating three essential criteria: (1) factor loadings, (2) composite reliability (CR), and (3) average variance extraction (AVE) values. All these criteria confirm that the CV assumption is not violated [110]. Table 1 presents all standardized factor loadings, CR, and AVE values, respectively.

Table 1. Convergent Validity.

Constructs	Dimensions	Items	Factor Loading (I)	Factor Loading (D)	CR	AVE
Sustainable performance (SP)	Economic	ECOP04	0.514	0.899	0.933	0.822
		ECOP03	0.694			
		ECOP02	0.663			
		ECOP01	0.535			
	Environmental	ENP04	0.655	0.859		
		ENP03	0.651			
		ENP02	0.708			
		ENP01	0.658			
	Social	SOCP05	0.688	0.959		
		SOCP04	0.742			
		SOCP03	0.574			
		SOCP02	0.592			
SOCP01		0.644				
Green human resource management practices (GHRMP)	Green selection and recruitment	GSR03	0.741	0.872	0.857	0.667
		GSR02	0.786			
		GSR01	0.697			
	Green training and development	GTD03	0.785	0.814		
		GTD2	0.862			
		GTD01	0.771			
	Green assessment and rewards	GAR03	0.775	0.760		
		GAR02	0.838			
		GAR01	0.798			
Organizational citizenship behavior for the environment (OCBE)		OCBE05	0.697	0.870	0.574	
		OCBE04	0.771			
		OCBE03	0.788			
		OCBE02	0.763			
		OCBE01	0.765			
Environmental management system (EMS)		EMS03	0.827	0.832	0.625	
		EMS02	0.858			
		EMS01	0.674			

4.5. Discriminant Validity

The discriminant validity assumption is violated if the value of correlation among exogenous variables exceeds the square root of average variance extraction (AVE). Next, to calculate the discriminant validity, the master validity plugin was used. The AMOS 24 output, as shown in Table 2, confirmed that the assumption of discriminant validity is not violated.

Table 2. Discriminant validity.

	CR	AVE	EMS	SP	GHRM	OCBE
EMS	0.832	0.625	0.790			
SP	0.933	0.822	0.694	0.907		
GHRMP	0.857	0.667	0.726	0.730	0.817	
OCBE	0.870	0.574	0.656	0.726	0.677	0.757

Sustainable performance = SP, green HRM practices = GHRMP, environmental management system = EMS, organizational citizenship behavior for the environment = OCBE.

4.6. Testing Structural Model (Direct Effects) Main Hypotheses Relationship between GHRMP, OCBE, EMS, and SP

This section explains the direct relationship between all four main variables: GHRMP, EMS, OCBE, and SP. The first objective of the current study was to investigate the re-

relationship between GHRMP and OCBE in predicting SP. Objective one is composed of three hypotheses. The structural model results confirmed that hypotheses (H1, H2, and H3) were supported. Similarly, the second objective was to investigate the relationship between GHRMP and EMS in predicting SP. As shown in Figure 3, SEM results confirmed that both H4 and H5 were also supported. The model fit indices include P-Value = 0.000 RMSEA = 0.034 GFI = 0.945 AGFI = 0.920 CFI = 0.932 NFI = 0.930.

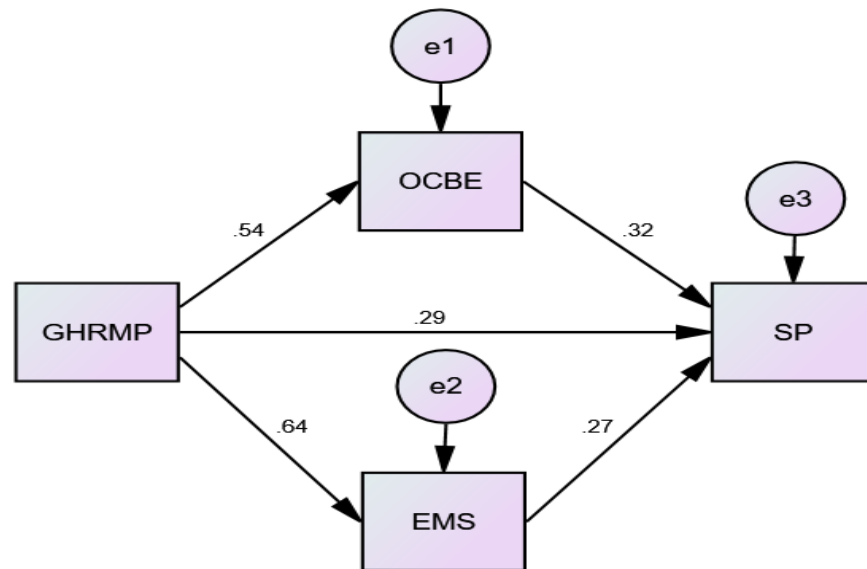


Figure 3. AMOS output OCBE and EMS as mediators.

Table 3 summarizes all five direct, main hypotheses of GHRMP with SP, OCBE, and EMS. All five hypotheses (H1, H2, H3, H4, and H5) were supported.

Table 3. Relationship between GHRMP, OCBE, EMS, and SP.

S.NO	Main Hypotheses	Standardized Estimates (SE)	CR	P	Results
H1	GHRMP→ SP	0.290	4.588	0.000	Supported
H2	GHRMP→ OCBE	0.544	10.262	0.000	Supported
H3	OCBE→ SP	0.320	6.155	0.000	Supported
H4	GHRMP→ EMS	0.635	13.032	0.000	Supported
H5	EMS→ SP	0.274	4.851	0.000	Supported

4.7. Mediation Analysis

A mediator is a third variable that explains the relationship between the independent and dependent variables [110,115]. The current study proposed two mediation paths through two hypotheses H6 and H7. For this purpose, two mediated models were tested. The first direct effect without mediators (OCBE, EMS) of GHRMP on SP was estimated. Second, direct and indirect effects were estimated with the mediator to confirm the mediation paths.

4.8. OCBE as Mediator on Relationship between GHRMP and SP

Structural model results revealed that the direct effect of GHRMP on SP is reduced from $b = 0.625$ to $b = 0.290$, as shown in Figure 3. However, the direct effect is still significant, with a p -value of $0 = 0.000$. Next, the indirect effect of GHRMP on the SP and mediation path (GHRMP→OCBE→SP) was estimated.

Mediation Path-1: OCBE as a mediating variable between GHRMP and SP

$$\text{Equation—1: } Y(\text{SP}) = \alpha_0 + \beta_1(\text{GHRMP}) + \mu \quad \beta_1 = 0.290$$

$$\text{Equation—2: } Y(\text{OCBE}) = \beta_0 + \beta_2(\text{GHRMP}) + \mu \quad \beta_2 = 0.544$$

$$\text{Equation—3: } Y(\text{SP}) = \gamma_0 + \beta_3(\text{OCBE}) + \mu \quad \beta_3 = 0.320$$

$$\text{Direct effect} = 0.290$$

$$\text{Indirect effect} = 0.544 \times 0.320 = 0.174$$

$$\text{Total effect} = 0.290 + 0.174 = 0.464$$

Therefore, the indirect effect was 0.174, with a critical value of 4.588. Next, to check whether this indirect effect is significant or not, bootstrapping was employed with 1000 iterations to identify the *p*-value [116]. Regarding Table 4, the bootstrapping *P*-value was calculated as 0.001, which ultimately confirmed mediation [110,115]. However, based on Baron and Kenny [117], the GHRMP direct effect is still significant on SP with (OCBE) mediating variable. So, partial mediation is observed.

Table 4. Summary of mediation analysis (indirect effects).

No.	Main Hypothesis	Direct Beta without Mediator	CR and Sig	Direct Beta with Mediator	CR and Sig	Indirect Beta	P = Value Bootstrap	Mediation Type Observed
6	GHRMP→OCBE→SP	0.625	12.698 (0.000)	0.290	4.588 (0.001)	0.174	0.001	Partial mediation
7	GHRMP→EMS→SP	0.625	12.698 (0.000)	0.290	4.588 (0.001)	0.173	0.001	Partial mediation

4.9. EMS as Mediator on Relationship between GHRMP and SP

First, establishing the significant direct effect of GHRMP on SP. The next step was to proceed with the mediation analysis; the mediating variable (EMS) was included in the structural model (GHRMP→EMS→SP), and the direct effect was re-calculated. Structural model results revealed that the direct effect of GHRMP on SP is reduced from $b = 0.625$ to $b = 0.290$, as shown in Figure 3. However, the direct effect is still significant, with a *p*-value of 0 = 0.000. Next, the indirect effect of GHRMP on the SP and mediation path (GHRMP→EMS→SP) was calculated.

Mediation path-2: EMS as a mediating variable between GHRMP and SP

$$\text{Equation—1: } Y(\text{SP}) = \alpha_0 + \beta_1(\text{GHRMP}) + \mu \quad \beta_1 = 0.290$$

$$\text{Equation—2: } Y(\text{EMS}) = \beta_0 + \beta_2(\text{GHRMP}) + \mu \quad \beta_2 = 0.635$$

$$\text{Equation—3: } Y(\text{SP}) = \gamma_0 + \beta_3(\text{EMS}) + \mu \quad \beta_3 = 0.274$$

$$\text{Direct effect} = 0.290$$

$$\text{Indirect effect} = 0.635 \times 0.274 = 0.173$$

$$\text{Total effect} = 0.290 + 0.173 = 0.463$$

Therefore, the indirect effect was 0.173, with a critical value of 4.588. Next, to check whether the indirect effect is significant or not, bootstrapping was employed with 1000 iterations to identify the *p*-value [116]. With reference to Table 4, the bootstrapping *P*-value was calculated as (0.001), which ultimately confirmed mediation [110,115]. Since the GHRMP direct effect is still significant on SP with (OCBE) mediating variable. So, partial mediation is observed. It is concluded that both OCBE and EMS mediate the relationship between GHRMP and SP. Hypothesis H6 and H7 were confirmed based on the proposed mechanism by [110,115–117].

Consequently, mediation analysis results are summarized in Table 4. Both mediating variables, i.e., OCBE and EMS, partially mediated the relationship between GHRMP and SP. The next section presents a detailed discussion of our quantitative findings.

5. Discussion on Research Findings

This study aimed to investigate the direct relationship between GHRMP, OCBE, EMS, and SP. In addition, this study intended to examine the mediating role of OCBE and EMS on the relationship between GHRMP and SP, based on the research objectives.

Theoretical Implications

The first objective of this study was to investigate the relationship between GHRMP and OCBE in predicting SP. To achieve objective, one current study proposed three hypotheses H1: GHRMP is positively related to SP. H2: GHRMP is positively related to OCBE. Thus, the hypothesis H2 was accepted. The results of H1 and H2 are consistent with findings of previous studies, e.g., [27]. The GHRMP is deep-rooted in shared behavioral values and useful for developing a green organizational culture and fostering low-carbon behaviors [30]. Organizations should use GHRMP to promote OCBE, encouraging employees to behave sustainably. Green HRM also enhances employees' eco-friendly behavior [27].

The term "discretionary acts" suggests that employees can make decisions at their level, and OCBE is not considered as part of formal job responsibilities. Similarly, Ones and Dilchert [33] have argued that most of these behaviors are discretionary in nature. Consequently, it is possible in some cases that rewards may not impact OCBE. Furthermore, to achieve objective one, hypothesis H3: OCBE is positively related to SP, was proposed. Results confirmed that OCBE has a positive relationship with SP. Hence, hypothesis H3 is accepted. The results of H3 are aligned with previous studies. Similarly, OCBE contributes to corporate environmental performance at both individual and organizational levels. In summary, OCBE refers to individual, voluntary and informal initiatives vital for greening organizations [57].

The second objective of this study was to investigate the relationship between GHRMP and the EMS in predicting SP. To achieve this objective, the study proposed two hypotheses H4: GHRMP and EMS are positively related. Likewise, results show that H4 is accepted. Previous studies reported similar findings, e.g., [65]. Organizations need to develop EMS to ensure environmental performance. However, this is not possible without employing GHRMP and their alignment with EMS [91]. Research results have revealed that GHRMP enhances the effectiveness of EMS diffusion in an organization. Implementation and development of EMS ISO14001 are influenced by HRM practices, including employee training, involvement, and effective communication [26]. Likewise, prior studies confirmed that green HRM is used for successful EMS implementation and links sustainability with HRM bringing higher economic benefits [15,23].

The previous studies have reported that employee training and involvement in adopting EMS ISO14001 standard play a critical role, e.g. [118]. EMS ISO14001 adoption process is positively related to training and development practices. According to research studies, training is one of the essential factors in implementing and adopting EMS ISO14001. However, low employees' skills and training procedures for EMS result in low performance. On the other hand, Malaysian manufacturing firms face problems in implementing and adopting EMS ISO14001 standards and cannot meet the requirements of extensive employee participation and training and cost [119]. Next, this study proposed H5: EMS has a positive relationship with sustainable performance (SP). Likewise, results confirm that H5 is accepted. The results of hypothesis H5 are aligned with previous research studies [66].

Similarly, previous research has reported that improving environmental performance is integral for the organization and also an essential element of SP. Stakeholders are also pressurizing organizations to adopt EMS ISO14001 certification. EMS ISO14001 is not just an environmental standard in organizational environmental policy, but researchers and environmental practitioners also focusing on their effectiveness to improve environmental and social performance. Recent research evidence also showed that EMS enhances business performance and enables the firm to manage its environmental objectives [120].

The third objective of this study was to examine the mediating role (indirect effects) of OCBE and EMS on the relationship between GHRMP and SP. This third objective of the current study proposed two hypotheses, i.e., (H6 and H7). First, hypothesis H6: OCBE mediates the relationship between GHRMP and SP. Mediation analysis results have confirmed that OCBE mediates the relationship between GHRMP and SP. Thus, hypothesis H6 is accepted. The results are aligned with previous studies that also confirmed OCBE as a mediator, e.g., [22,121]. The GHRMP is deep-rooted in shared behavioral values and useful

for fostering low-carbon behaviors. Organizations should use GHRMP to promote OCBE, encouraging employees to behave sustainably. Green HRM also enhances employees' eco-friendly behavior [27]. To further achieve objective 3, the current study proposed hypothesis H7: EMS mediates the relationship between GHRMP and SP. Mediation analysis results have revealed that EMS mediates the relationship between GHRMP and SP. Therefore, hypothesis H7 is accepted. Consequently, results are consistent with previous studies, e.g., [57,95]. GHRMP is vital for the successful implantation of EMS ISO14001. Similarly, GHRMP plays an influential role in achieving SP. Despite this, research also highlighted the role of EMS in various aspects, e.g., EMS motivations, adoption or implementation [122], performance standards, and level of EMS diffusion in impacting performance [26].

6. Conclusions, Implications, and Future Research

Current study findings suggest that manufacturing firms should effectively use GHRMP, adopt EMS ISO14001, and encourage OCBE to improve SP. Employing these green practices would mitigate the imbalance between economic and environmental performance, e.g., [119]. Understanding of GHRMP is essential for managers to encourage and motivate employees towards OCBE and environmental initiatives, e.g., EMS ISO14001 [6]. Manager support and involvement are vital for the successful implementation of EMS ISO14001 [15]. Another significant finding of this study is that companies should use GHRMP, such as green training, educating, and rewarding their managers to encourage OCBE, e.g., [27,30,57].

Consequently, the last findings of this study report that EMS is a vital factor for improving SP. Currently, approximately 18% of manufacturing firms are certified by ISO14001 [106]. This percentage is relatively lower as compared to ISO14001 certification among OECD countries. EMS ISO14001 adoption is vital for Malaysian firms to enhance SP and mitigate the negative impact on the environment [119]. Concerning policy implication, this research focuses on the antecedents of SP within Malaysian manufacturing firms.

Consequently, current research findings are relevant to the Malaysia Environmental Performance Index (EPI), Global Environmental Performance Index (EPI), National Policy on the Environment (NEP), National Policy on the Environment (DASN), and Compendium of Environment Statistics Malaysia [31,123]. Findings of this research present guidelines for the National Development Policy (NDP) and National Vision Policy (NVP) to incorporate Green policies to protect the environment from industrial waste and strengthen environmental regulations to make EMS ISO14001 compulsory for all types and sizes of manufacturing firms. The government should provide relevant policy and institutional framework for the SP of the manufacturing industry. The Eleventh Malaysia Plan (11th EMP 2016–2020) fosters the firms to adopt sustainable practices to lead the Malaysian economy towards sustainability [124,125].

These study findings have made a significant contribution to knowledge in the literature on GHRMP, OCBE, EMS, and SP. The current study tested the mediating effects of OCBE and EMS on the relationship between GHRMP and SP among ISO14001-certified Malaysian manufacturing firms. However, this study also has some limitations. The first potential limitation is the current study dependence on self-report data, e.g., [126]. Self-reported data on variables, i.e., GHRMP, OCBE, EMS, and SP, represent HRM managers' viewpoint since the generalizability of findings to all employees is still a major concern. Secondly, this study was conducted among ISO14001-certified Malaysian manufacturing firms. It hinders the generalization of results to firms without ISO14001 certification in the country. Thirdly, the relatively small sample size ($n = 227$) is adequate for SEM analysis and limits the generalizability of results and scope of this study. Finally, the current study used only three green HRM practices to operationalize green HRM, which is also one of the limitations.

To advance research knowledge on GHRMP, OCBE, EMS, and SP based on previous literature and current research discussion, future directions are recommended. This study has used OCBE and EMS as a single order construct in SEM analysis, although it can be

used as a second-order construct. Future research should use both constructs as multi-dimensional, i.e., OCBE (eco-helping, eco-initiatives, and eco-civic engagement) and, i.e., EMS (key motives and benefits) through SEM analysis. This study also measured SP using three dimensions (economic, environmental, and social) as a reflective measure. Future studies should use this construct as a formative construct to measure SP and use objective data since the current study used subjective measures. Future research should replicate this model with a larger sample size in a different sector using moderation effects on company background, etc.

The current research has investigated key antecedents, i.e., GHRMP, OCBE, and EMS, impact on SP among ISO14001-certified Malaysian manufacturing firms. The findings suggested one major practical remedy to achieve SP, i.e., equal improvement in three areas, economic, environmental, and social. Manufacturing firms should implement GHRMP, adopt EMS ISO14001, and primarily encourage OCBE to achieve SP. The purpose of this study was to investigate the mediating effects of OCBE and EMS on the relationship between GHRMP and SP among ISO14001-certified Malaysian manufacturing firms. The quantitative design was employed using quantitative data to address the research objectives. The findings revealed that GHRMP related positively with SP. In addition, OCBE and EMS have partially mediated the relationship between GHRMP and SP. This study also presents significant theoretical and practical implications. Consequently, these findings are quite relevant to several policy-making bodies in Malaysia, such as EPI, NEP, and DASN [123]. To meet the targets of the 11th Malaysian Plan (MP) in 2020, the manufacturing firms can employ GHRMP and adopt EMS ISO14001 to improve SP. Overall research findings provide comprehensive and constructive insight regarding the antecedents of SP. Therefore, the results of this study cannot be generalized to non-certified manufacturing firms. Moreover, this study advances research knowledge in the area of green HRM, OCBE, EMS, and SP.

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Appendix A

The key constructs of this study, e.g., GHRMP, OCBE, EMS, and SP, were measured with a 5-point Likert scale (Strongly disagree = 1; Disagree = 2; Neutral = 3; Agree = 4; Strongly agree = 5).

Green Human Resource Management Practices (GRHRMP) Items

GSR 01	Environmental performance of the company attracts employees.
GSR 02	Company prefers to hire employees that have environmental knowledge.
GSR 03	Employee selection takes environmental motivation into account.
GSR 04	All employee selection steps consider environmental questions.
GTD01	Environmental training is continuous.
GTD02	Environmental training is a priority.
GTD03	Environmental training is an important investment.
GTD04	Environmental training for all employees aimed at promoting environmental policy.
GAR01	Every employee has specific environmental goals.
GAR02	Contribution to environmental management are assessed.
GAR03	Individual performance assessment results are recorded.
GAR04	Cash rewards to recognize environmental performance.
GAR05	Environmental performance is recognized publicly.

Organizational Citizenship Behavior for the Environment (OCBE) Items

OCBE01	I spontaneously give my time to help my colleagues take the environment into account in everything they do at work.
OCBE02	I encourage my colleagues to adopt more environmentally conscious behavior.
OCBE03	I encourage my colleagues to express their ideas and opinions on environmental issues.
OCBE04	I spontaneously speak to my colleagues to help them better understand environmental problems.
OCBE05	I stay informed of my company's Environmental initiatives.
OCBE06	I actively participate in environmental events organized in and/or by my company.
OCBE07	I undertake environmental actions that contribute positively to the image of my organization.
OCBE08	I volunteer for projects, endeavors or events that address environmental issues in my organization.
OCBE09	In my work, I weigh the consequences of my actions before doing something that could affect the environment.
OCBE10	I voluntarily carry out environmental actions and initiatives in my daily work activities.
OCBE11	I make suggestions to my colleagues about ways to protect the environment more effectively, even when it is not my direct responsibility.
OCBE12	I suggest new practices that could improve the environmental performance of my organization.

Environmental management system (EMS) 140001 Items

EMS01	To meet customer demands.
EMS02	To comply with government policy or regulations.
EMS03	To match competitors' actions.
EMS04	To improve environmental performance.
EMS05	To improve efficiency and control in the operations.
EMS06	To build synergies among management systems.

Sustainable performance (SP) Items

ECOP01	Return on investment (ROI) has increased above industry average during the last 3 years.
ECOP02	Sales growth has increased above industry average during the last 3 years.
ECOP03	Profit growth rate has increased above industry average during the last 3 years.

ECOP04	Market share has increased during the last 3 years.
ENP01	The efficiency of the consumption of raw materials has improved during the last 3 years.
ENP02	The resource consumption (thermal energy, electricity, water) has decreased (e.g. per unit of income, per unit of production) during the last 3 years.
ENP03	The percentage of recycled materials has increased during the last 3 years.
ENP04	The waste ratio (e.g. kg per unit of product, kg per employee per year) has decreased during the last 3 years.
SOP01	The turnover ratio has decreased during the last 3 years.
SOP02	The employees' satisfaction has increased during the last 3 years.
SOP03	The employees' motivation has increased during the last 3 years.
SOP04	Health and safety performance have improved during the last 3 years.
SOP05	Employee education and training (man-days per employee per year) have increased during the last 3 years.

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