

Enhancing Business Performance through Green Human Resource Management Practices in Malaysian Manufacturing Industries

Abstract

Purpose – Sustainability has come under public policy limelight. Organizations are investing to minimize the impact of environmental degradation to build their image as an environmentally friendly firm, which contributes to their business performance as well. Literature suggests that green organizational indicators are found to be positively related to firm sustainable performance. More specifically green human resource management (GHRM) practices strengthen the firm's environmental practices and enhance employee morale toward green practices. The paper aims to investigate the impact of GHRM indicators on environmental performance (EP) and business performance (BP).

Design/Methodology/Approach – The research employed SmartPLS 3 and follows a cross-sectional research design. Data from 179 employees were collected using a convenience sampling technique from the firms that adopted GHRM practices.

Findings – The research found a significant relationship of GHRM with EP and also reported the significant relationship between EP and BP. Moreover, EP significantly mediates the relationship of GHRM with BP.

Research Limitations – A relatively small sample size of employees was used that may suggest the need for a diverse and more representative sample. The paper is based on data collected from the Malaysian manufacturing industry – other economic sectors and Asian countries may offer different results.

Practical Implications – The paper identifies the need for incorporating GHRM practices and culture at the workplace to encourage positive green behavior in employees which will increase the EP and BP of the firm.

Originality/Value – This paper reported the initial empirical findings after the March 7th incident on EP of businesses in Malaysia, where businesses have initiated the adoption of GHRM practices.

Keywords: Green Human Resource Management, Environmental Performance, Business Performance, Manufacturing Industry, Malaysia

1. Introduction

The manufacturing sector of Malaysia contributing 23% of GDP (Khan, Saufi, and Rasli, 2019). Due to increasing societal concern in Malaysia especially after 7th March 2019 incident¹ towards ecological sustainability, organizations assume strategic importance to green practices for environmental performance (EP) and to gain competitive advantage/ performance (Kleindorfer, Singhal, and Wassenhove, 2005; Pagell and Gobeli, 2009; Porter and van der Linde, 1995; Sroufe, 2003; Yang et al., 2010). On the other hand, previous research studies related to green practices and financial performance of the business are often conflicting and ambiguous. Jimenez and Lorente (2001) suggested that EP can positively influence the results of the other operations objectives as long as it is placed as a first objective together with quality. Russo and Fouts (1997) advice that EP could backfire in certain situation when customers keep buying less environment friendly products in specific circumstances/ economy. Miroshnychenko, Barontini and Testa (2017) concluded that adoption of ISO 14001 appears to have a negative impact on financial performance. On the other hand, Laosirihongthong, Adebajo and Tan (2013) found the green practices lead to a positive

¹ March 2019, news broke out about the industrial pollution in Sungai Kim Kim in Johore, which reportedly affected the health of almost 6,000 people (Gafoor, 2019; New Straits Times, 2019)

association with the three dimensions of performance - environmental, economic and intangible, while, Namkung and Jang (2013) provided mixed results of green practices on firm performance.

Recently researchers have conducted studies to investigate the relationship between environmental management and human resource management for enhancing EP (Ahmad, 2015; Bhutto 2016; Jabbour and Jabbour, 2016; Jackson, Renwick, Jabbour, and Muller-Camen, 2011) and relationship between EP and business performance (BP) (Yang, Hong and Modi, 2011). Subsequently, researchers have found the connection between HR factors including green recruitment and selection, green training, green performance evaluation, green reward systems, green empowerment, green organizational culture management to enhance EP (Daily and Huang, 2001; Ferna'ndez, Junquera, and Ordiz 2003; Madsen and Ulhoi, 2001).

Sustainable organizations keep focusing on how their operations affect the environment, nature of effect from different organization activities and way out to protect environmental pollution and degradation (Rondinelli and Berry, 2000). In this regard, organizations can prevent the environment by adopting green human resource management (GHRM) practices which result in development of environmentally responsible behavior among employees. The GHRM represents the paradigm of "triple-bottom-line" since GHRM practices focus on social and economic balance (Yusoff, Ramayah, Othman, 2015) and provide benefit to the organization (Wagner, 2013). Studies stressed the issue among strategy makers related to compatibility of EP with competitive advantage (e.g. Gamble, Peteraf and Thompson, 2014; Grimstad and Burgess, 2014; Marchi, Maria and Micelli, 2013; Rosen, 2001). The debate related to EP and economic viability is unclear, meanwhile, organizations identified that environmental sustainability practices in manufacturing provide platform to acquire competitive position (Montabon, Sroufe, and Narasimhan, 2007).

This study contributes to current literature by exploring the GHRM practices and its relationship with EP and BP. For the purpose of this novel contribution, in the present study, EP explained the

relationship between GHRM practices and BP. Second, it is providing the evidence that Malaysian manufacturing firms are involving in green practices, which is global and local of any organization to show concern for the betterment of the general public and future environment by responding to calls for social and environmental concern (i.e. 7th March 2019 incident). Therefore, it enrich the natural resource base view (NRBV) literature by integrating an unique empirical model.

Accordingly, the first section of the paper describes the knowledge gap, objectives and contributions of the study, next, we discussed the previous literature to provide understanding of how organizations alter human resource management practices into GHRM practices which enhance EP and further lead to BP. In third section, we discussed the design of the study, analytical approach and the methodology adopted. In fourth section, we discuss the results of the empirical model and reported the statistical results. In the end, we conclude the study with managerial and practical implications with future guidelines and limitations.

1. Literature Review

2.1 Green Human Resource Management Practices

Firms are the main cause of environmental problems, they should, therefore, play a large part in addressing environmental management issues (Bebbington 2001; Ragas, Tantay, Chua and Sunio, 2017)). Firms are being pressured by different sources to practice this trend as it will have an impact on society (McGuire & Germaine, 2015). Therefore, firms already implemented eco-initiatives and still trying to find new ways to resolve environmental management issues. GHRM is one of the practices which emerge as a response to environmental degradation. The concept of GHRM refers that the organization's preliminary focus is on its human resource operations for sustainable development (Bhutto, 2016; Mandip, 2012).

GHRM practices along with the purpose of encouraging ecological utilization of resources to emphasize environmental sustainability, create enhanced human resource behavior and obligation toward environmental health (Gupta, 2018). The GHRM contributes to enhanced social and economic well-being as well as develop behavior towards environmental concern. Strategic HRM assumes that human resources are there to be consumed and exploited rather than developed and maintained (Ehnert, 2009), and a wider GHRM practice would help place sustainability at the heart of people management (Renwick, Redman, and Maguire, 2013). Research defined GHRM as the HRM aspects of environmental management (Renwick, Redman, and Maguire, 2013). GHRM practices brought great benefits to the organizational reputation, performance and were effective as they also facilitate employees (Cherian and Jacob, 2012). Additionally, the concept of “Going Green” across organizational functions was suggested for employees’ motivation towards the green world (Chaudhary 2019; Longoni, Luzzini, & Guerci, 2018).

2. Theoretical Background

In this study, the theoretical lens of the natural resource-based view (NRBV) theory provides a foundation to understand the association of environmental initiatives with organizational functions and performance. Previously, researchers have adopted resource-based view (RBV) theory to support the positive effects of HRM (Saridakis, Lai, & Cooper, 2017), while, the natural resource-based view (NRBV), which is RBV extension, used to support positive effects of environmental initiatives (Melkonyan et al., 2019) on firm performance. Also, Svensson et al. (2018) state that resource-based view (RBV) theory widely utilized in research studies related to economic issues, while natural resource-based view (NRBV) theory utilized to support studies based on environmental outcomes. Additionally, RBV solely deals with performance phenomena, it suggests a dilemma for organizations to involve in sustainability initiatives, if it provides market advantage (Miemczyk, Howard, and

Johnsen, 2016; Mani et al., 2016). On the other side, the NRBV provides understanding to gain a competitive advantage in ways that sustain the earth's natural resources and ecosystems. Thus, NRBV proposes a dynamic and interconnected view of strategies (Hart, 1995).

Therefore, NRBV theory was adopted to provide a theoretical foundation through which the link between GHRM practices, environmental performance and business performance can be established.

The natural resource base view is a natural extension of RBV that specifically related to those organizational resources and capabilities which provide a competitive advantage based on its relationship with the natural environment (Hart, 1995; Jakhar, Rathore, & Mangla, 2018). Thus, NRBV theory supports to establish sustainable strategies by defining the relationship between resources and capabilities and strategic outcomes (Melkonyan et al., 2019). Hart and Dowell (2011) proposed that the NRBV theory focuses on the contingent nature of resources and capabilities that allow researchers to create a link between organization resource strategies and the environment. Though with variation in choice of latent variables and methodology, previous empirical studies adopted NRBV theory to provide a theoretical foundation to their studies (e.g. Chan, 2005; D'Agostini et al., 2017; Hart and Dowell, 2011; Tate and Bals, 2018). Based on NRBV theory Chan (2005), found that environmental initiatives create a competitive advantage for organizations. Additionally, Tale and Bals (2018) used the NRBV of the firm to provide a theoretical foundation to explore sustainable development.

3.1 Green Recruitment & Selection and Environmental Performance

Green recruitment involves evaluating candidates' environmental understanding, belief, and concern (Renwick et al., 2013) and convey messages related to environmental criteria (Arulrajah, Opatha, and Nawaratne, 2015). Therefore, the green recruitment process reveals recruits about the green organization culture and environmental values (Jackson and Seo, 2010). Renwick, Redman, and Maguire (2013) proposed that sustainable organizations need to concentrate on attracting and hiring

those candidates who have concern for the environment. Thus, organizations ought to upsurge their recruitment through candidates who are aware of environmental concerns (Ehnert, 2009). Researchers proposed that sustainable organizations need to create their image and position in public as an environmentally friendly organization, to attract prospective candidates (Kapil, 2015a; Guerci et al., 2016; Mani et al., 2018).

Further, researchers (Mandip, 2012; Renwick et al., 2013) claim that the green recruitment process discusses what is expected from future green employees during job analysis, job description and job specification which clarify green accomplishment and environmental concern of organizations. Similarly, Razab, Udin, and Osman (2015) indicated that sustainable organizations need to emphasize ecological questioning while interviewing potential candidates. Additionally, organizations ought to enhance their endeavors toward preventing the environment by incorporating environment-friendly job responsibility (Arulrajah et al., 2015) and create job positions which mainly concentrate on environmental aspects of the organization (Opatha, 2013). Jabbour (2011) proposed that sustainable organizations should give preference to environmentally committed candidates, which may contribute to the environmental performance of organizations. Thus, authors propose the following hypothesis

H1: There is a positive relationship between green recruitment & selection and environmental performance.

3.2 Green Training & Development and Environmental Performance

Since 1990s, researchers have been focusing on theorizing human resources and environmental sustainability (Hale 1995; Madsen and Ulhoi 2001; Venselaar, 1995). According to (Daily et al., 2007; Brío, Junquera, and Ordiz, 2008; Jabbour, 2013), environmental training is one of the most crucial factors to bring environmental management initiatives through HRM within the organization.

Environmental training and environmental management of organizations are closely linked with each other as these two constructs develop and grow simultaneously (Teixeira, Jabbour, and Jabbour, 2012). Opatha and Arulrajah (2014) proposed that environmental training brings the most significant development among employees toward an environmental concern and create green practices culture in the organization. Correspondingly, Sarkis, Gonzalez-Torre, and Adenso-Diaz (2010) state that employees with appropriate environmental training can adopt EM practices in an organization. Likewise, Arulrajah et al. (2015) have explained the importance of green training to develop knowledge and abilities in employees for better environmental performance.

Daily, Bishop, and Massoud (2012) conducted empirical research to find the relationship between environmental empowerment and environmental training on environmental performance. They found that environmental training significantly influences the environmental performance. Hence, training and development programs are important for employees to acquire knowledge and skills in environmental management (Renwick et al., 2013; Prasad, 2013). Moreover, Zoogah (2011) proposed that organizations should offer environmental problem-solving tasks and green assignments as a crucial aspect of training and development for potential green managers (Wehrmeyer, 1996; Prasad, 2013). Thus, researchers articulate the following hypothesis

H2: There is a positive relationship between green training & development and environmental performance.

3.3 Green Performance Management & Appraisal and Environmental Performance

Ahmad (2015) proposed that an organization can improve environmental performance through performance management system (PMS), since PMS guide employees and measure their contribution toward environmental performance. Hence, PMS surely contributes to the advancement of green

work overtime (Jackson, Renwick, Jabbour, and Muller-Camen 2011), and also protects EM works (Epstein and Roy, 1997). Researchers claim that organizations need to monitor resource usage and evaluate environmental initiatives to ensure sustainable environmental performance (Arulrajah et al., 2015; Jackson and Seo, 2010). Hence, sustainable organizations have created standards for environmental performance to appraise the green performance of their employees and evaluate environmental performance (Marcus and Fremeth, 2009). HRM should create green work rating criteria through building EM objectives, assessing EM behavior and evaluate the environmental achievement of employees and consider this green work of employees into their performance and appraisal records (Gupta, 2018; Kapil, 2015b; Renwick et al., 2013). Moreover, organizations should provide feedback regularly about employee performance in achieving environmental goals to improve their environmental performance (Arulrajah et al., 2015; Jackson et al., 2011). According to Govindarajulu and Daily (2004), providing feedback on the green work performance of employees play an important role in motivating and increasing their involvement in EM responsibilities. Hence, the human resource department needs to design a performance appraisal system of employees by integrating behavioral and technical skills related to environmental sustainability (Ahmad, 2015). Thus, researchers hypothesize that;

H3: There is a positive relationship between green performance management & appraisal and environmental performance.

3.4 Green Reward & Compensation and Environmental Performance

Organizations can improve and achieve environmental goals by compensating and rewarding employees for green practices and their commitment towards the environment (Jabbour and Jabbour, 2016). Hence, green reward and compensation encourage environmental-friendly behavior in employees and can improve environmental performance (Zoogah, 2011). According to Daily and

Huang (2001), HRM should design a reward system that reflects an organizational commitment to environmental performance meanwhile emphasize and encourage environmental-friendly behavior in employees. The organizational environment commitment leads to enhance workers' environment commitment, transforms them into more environmentally responsible workers and encourages them to take ecological initiatives (Renwick et al, 2013; Daily and Huang, 2001). Similarly, Calia, Guerrini, and Castro (2009) proposed that employees should be rewarded based on green projects result within the organizations to encourage environmental-friendly behavior among employees. Additionally, green appreciation rewards should be provided at different levels of management within the organization (Arulrajah et al., 2015). Green rewards provide recognition and appreciation to most environmentally committed employees and middle management who motivate their subordinates toward green performance (Kapil, 2015a; Arulrajah et al., 2015). Moreover, Ahmad (2015) proposed that green rewards can also be used to bring green creativity and innovation by providing reward base opportunities to employees for suggesting green work ideas related to their jobs. Thus, the author proposes

H4: There is a positive relationship between green reward & compensation and environmental performance.

3.5 Green Employee Empowerment & Participation and Environmental Performance

Ahmad (2015) proposed that HRM can motivate employees toward green initiatives and increase their participation in environment-friendly projects by empowering them. In this regard, HRM invites employees to formulate green work initiatives with top management, during the process employees can negotiate and discuss openly with management by proposing new ideas and highlight untapped issues (Liebowitz, 2010). The participation and empowerment mechanism creates a medium in a workplace to get the voice and support of employees in shaping environmental objectives (Harvey,

Williams, and Probert 2013). Additionally, employee participation and empowerment promote environment-oriented entrepreneurs within the organization (Sudin, 2011). As per Chen, Tang, Jin, Li, and Paillé (2015) employee involvement in creating green strategies will enable them to acquire knowledge about green products/services and improve their tacit knowledge to deal with identifying environmental degradation sources. It also helps in handling emergencies and expanding preventive solutions (Boiral and Paillé, 2012), further, it leads to enhanced environmental performance (Renwick et al., 2013). Similarly, Rothenberg (2003) found that employee participation significantly contributes to environmental performance. Govindarajulu and Daily (2004) proposed that empowerment induced employees to get involved in environmental issues. The environmental-related issues are usually based on team projects, and these complex issues required different sets of skills to implement effective EMS solutions (Daily et al., 2007; Rothenberg, 2003; Neto and Jabbour, 2010). Moreover, employee empowerment enhanced environment management practices and tacit knowledge especially when an organization is dealing with team-based environmental concerns (Daily et al., 2007). Thus, researchers formulated the following hypothesis:

H5: There is a positive relationship between empowerment & participation and environmental performance.

3.6 Green Management of Organizational Culture and Environmental Performance

Researchers proposed that green organizational culture plays a crucial role to bring enhancement in environmental performance (Gupta and Kumar, 2013). Green organization culture can be created through GHRM along with adequate support of HRM (Jabbour and Santos, 2008). GHRM is a key driver of green organizational culture and has more potential than just improving environmental performance (Mishra, Sarkar, and Kiranmai, 2014). Green organizational culture holds that the

workforce at a different level of management understands and acknowledges the importance of environmental value in the organization (Ahmad, 2015; Bhutto, 2016). Hence, organizations need to communicate eco-friendly initiatives, practices and objectives continuously at all levels of management (Ramus, 2001; Daily, et al. 2007; Govindarajulu and Daily, 2004). Additionally, upper management needs to provide feedback about environmental performance to sustain environmental value, and create sanction criteria for environmental violations (Renwick et al., 2008; Mandip; 2012) meanwhile develop the workforce through ecological training and education (Fernández et al., 2003). Furthermore, upper management should allow trial and error approach toward environmental performance in making environmental improvements. This experimental empowerment enhances employees' motivation (Daily and Huang 2001, Daily, et al., 2007; Govindarajulu and Daily, 2004), and promote environmental performance innovation (Govindarajulu and Daily, 2004; Ramus, 2001; Ramus and Steger, 2000). Researchers proposed that employee empowerment performs a key role in forming green organizational culture, as empowerment assigns authority of decision making to employees about environmental problems (Daily et al., 2012). Likewise, Gupta and Kumar (2013) proposed that green organization culture' formation need some intervention from HRM; firstly, employees at all level should be invited to express their thought about environmental initiatives, objectives, execution, and implementation. Secondly, organizations should include open channels of communication in green initiatives to motivate employees toward green goals achievement and allow managers to be informed of sustainable practices. Thus, researchers proposed the following relationship:

H6: There is a positive relationship between green organizational culture and environmental performance.

3.7 Environmental Performance and Business Performance

In economics view, organizations need to limit the investment in ecological activities to point where marginal benefit meets the marginal cost. Several researchers proposed that organizations may detriment their economic performance by investing beyond the legal and regulatory ecological requirements (Christiansen and Haveman, 1981; Conrad and Morrison, 1989). In light of this assumption, organizations have not got any benefit from implementing excessive environmental prevention, hence improving business performance through green practices have drawn little attention from researchers (Darnall, Henriques, and Sadorsky, 2008). However, many research studies highlighted that organizations can enhance financial performance through environmental performance (Darnall et al. 2008; Kollman and Prakash, 2001, O'Donohue and Torugsa, 2016). During early 1990s, several companies have benefitted financially by adopting green practices such as reduce wastage, material and energy consumption (Hart and Ahuja, 1996). Correspondingly, organizations that proactively formulate environmental strategies get the advantage of premium price and enhanced sales (Rivera, 2002) due to increased market legitimacy (Suchman, 1995) and social endorsement (Meyer and Rowan, 1977; Scott, 2001).

The social endorsement provides an edge to sustainable organizations since environment-friendly organizations can market their green practices as a unique selling point for their products/services, hence can gain competitive advantage (Russo and Fouts, 1997; Rivera, 2002; Bansal and Hunter, 2003). With continuous improvement in their environmental practices, organizations can generate a pool of innovation which leads to sustained competitive advantage (Sharma and Vredenburg, 1998; Russo and Fouts, 1997; Hart, 1995). Moreover, environmental performance such as decreased wastage, carbon emission, energy use, and other waste management is positively linked with business performance (Hart and Ahuja, 1996; King and Lenox, 2000). Similarly, Darnall, et al. (2008) also found that

ecological involvement provides financial benefits to organizations hence contribute to business performance. Thus, researchers articulate the following hypothesis:

H7: There is a positive relationship between green environmental performance and business performance.

Moreover, based on the literature review, researchers have identified challenges that have been faced by organizations in adopting environment management across organizational functions (Pagell, & Shevchenko, 2014; Young et al., 2015), meanwhile uncertain about maintaining economic performance. Prior studies support that GHRM practices significantly influence environmental performance through selecting environmentally committed candidates (Jabbour 2011), employees green training and development (Arulrajah et al., 2015), green performance management and appraisal of employees (Ahmad 2015; Gupta, 2018), compensation and rewards for environmental practices and commitment (Jabbour and Santos, 2008; Jabbour and Jabbour, 2016), empowering employees to shape environmental objectives (Harvey, Williams, and Probert, 2013), and green organizational culture (Gupta and Kumar, 2013). Accordingly, Renwick, et al. (2013) proposed that implementation of effective GHRM practices substantially addresses the environmental concern of organizations. Moreover, numerous research studies support that green employee outcomes are linked with environmental performance (Longoni, et al., 2018), which leads to business performance of the organizations (Darnall, et al., 2008). Certainly, hiring the environmentally committed employees positively support environmental development and often attract talented employees based on the organization's environmental reputation (Linnenluecke and Griffiths, 2010). Additionally, empowering employees in shaping environmental goals, encourage involvement in environmental activities and potentially improve environmental performance (Longoni, et al., 2018), thus, lead toward the business performance of organizations (Agyabeng-Mensah, Afum, & Ahenkorah, 2020).

Based on the literature review, researchers investigated the role of environmental performance as a mediator between green recruitment & selection, green training & development, green performance management & appraisal, green reward & compensation, green employee empowerment & participation, green organizational culture, and business performance. Thus, the following hypothesis is proposed.

H8: Environmental performance plays a role as a mediator between green recruitment & selection and business performance.

H9: Environmental performance plays a role as a mediator between green training & development and business performance.

H10: Environmental performance plays a role as a mediator between green performance management & appraisal and business performance.

H11: Environmental performance plays a role as a mediator between green reward & compensation and business performance.

H12: Environmental performance plays a role as a mediator between green empowerment & participation and business performance.

H13: Environmental performance plays a role as a mediator between green organizational culture and business performance.

3. Methodology

The construct and measures for GHRM, EP, and BP were obtained and adopted from existing studies (Table 1). The self-administrated questionnaire consists of close-ended questions. In this study, constructs including green recruitment and selection, green training and development, green performance management and appraisal, green reward and compensation, green empowerment and participation, green organizational culture, EP and BP are gauge with five, five, five, three, five, five,

four and six indicators, respectively. The items for all constructs were adopted from previous studies and measure on 5-points Likert scale. Table 1 shows a summary of constructs.

Table 1: Summary of Constructs

| <i>Construct</i> | Number of Indicators | Study |
|--|-----------------------------|---|
| Demographic | 3 | - |
| Green Recruitment and Selection | 5 | Masri, and Jaaron, (2017) |
| Green Training and Development | 5 | Masri, and Jaaron, (2017) |
| Green Performance Management And Appraisal | 5 | Masri, and Jaaron, (2017) |
| Green Reward and Compensation | 3 | Masri, and Jaaron, (2017) |
| Green Empowerment and Participation | 5 | Masri, and Jaaron, (2017) |
| Green Organizational Culture | 5 | Masri, and Jaaron, (2017) |
| Environmental Performance | 4 | Li, Ye, Sheu, and Yang, (2018); |
| Business Performance | 6 | Pucihar, Lenart, Borštnar, Vidmar and Marolt, (2019). |

As the organizations in Malaysia, that practice GHRM were limited, researchers had limited options with six organizations that fall in this category from manufacturing industry for data collection. The data analysis was performed on 179 out of 482 responses, remaining were discarded. The discarded responses were due to the reasons such as incompleteness or more than one options were chosen in the given items. For organization visit, questionnaire distribution, and collection, author's colleagues have assisted. In this study, a convenient sampling technique was used to get respondents. This is because majority of the employees are on work shifts and makes it difficult for data collection. The

survey was administered to employee's and responses were collected on GHRM, EP, and BP. The demographic information of respondents is presented in table 2.

Independent t-test method was used to determine the non-response bias by using and comparing first 20 respondents and the last 20 respondents on all variables (i.e. Armstrong and Overton, 1977; Ghouri and Mani, 2019). The results revealed that there was no significant difference between the early and late respondents, suggesting no concern for non-response bias. Furthermore, we conducted Harman's single-factor test to assess the potential for common method bias (Dellana et al., 2019; Podsakoff et al., 2003). All survey items were included in the study to determine if most of the variance in the model was accounted for by one general factor. The result of variance explained by a single factor was 46.7, which implies no issue of common method bias (Farouk et al., 2016; Saunila, Pekkola, and Ukko, 2014).

Table 2: Demographic Information

| Variable | Category | Percentage % |
|-----------------|-----------------|---------------------|
| Gender | Male | 73.6 |
| | Female | 26.4 |
| Age | < 25 | 63.6 |
| | 25-35 | 28.4 |
| | 36-45 | 7.3 |
| | >45 | 0.7 |
| Experience | <5 | 61 |
| | 5-10 | 31 |
| | 10-15 | 5 |
| | >15 | 3 |

4. Data Analysis and results

We used variance-based structural equation modeling or partial least square (PLS) using smartPLS 3, to analyse the collected data. PLS is well suited for studies in the theory building and testing (Hulland, 1999). According to Barclay, Thompson & Higgins, (1995) PLS can simultaneously test the measurement model (relationships between items and their corresponding constructs) and the structural model (relationships between constructs). We created a measurement model and a structural model to assess the model fit. Additionally, we performed reliability, Cronbach's alpha, convergent validity (AVE), discriminant validity (HTMT) (Chi, Kilduff, and Gargeya, 2009; Gefen, Straub, and Boudreau, 2000) tests to ascertain the model fitness. Further, bootstrap analysis is performed to test the statistical significance of the path Co-efficient after computing the path estimates in the structural model (Park, Lee, and Chae, 2017; Hair et al., 2012).

Figure 1 present the conceptual model of the research study.

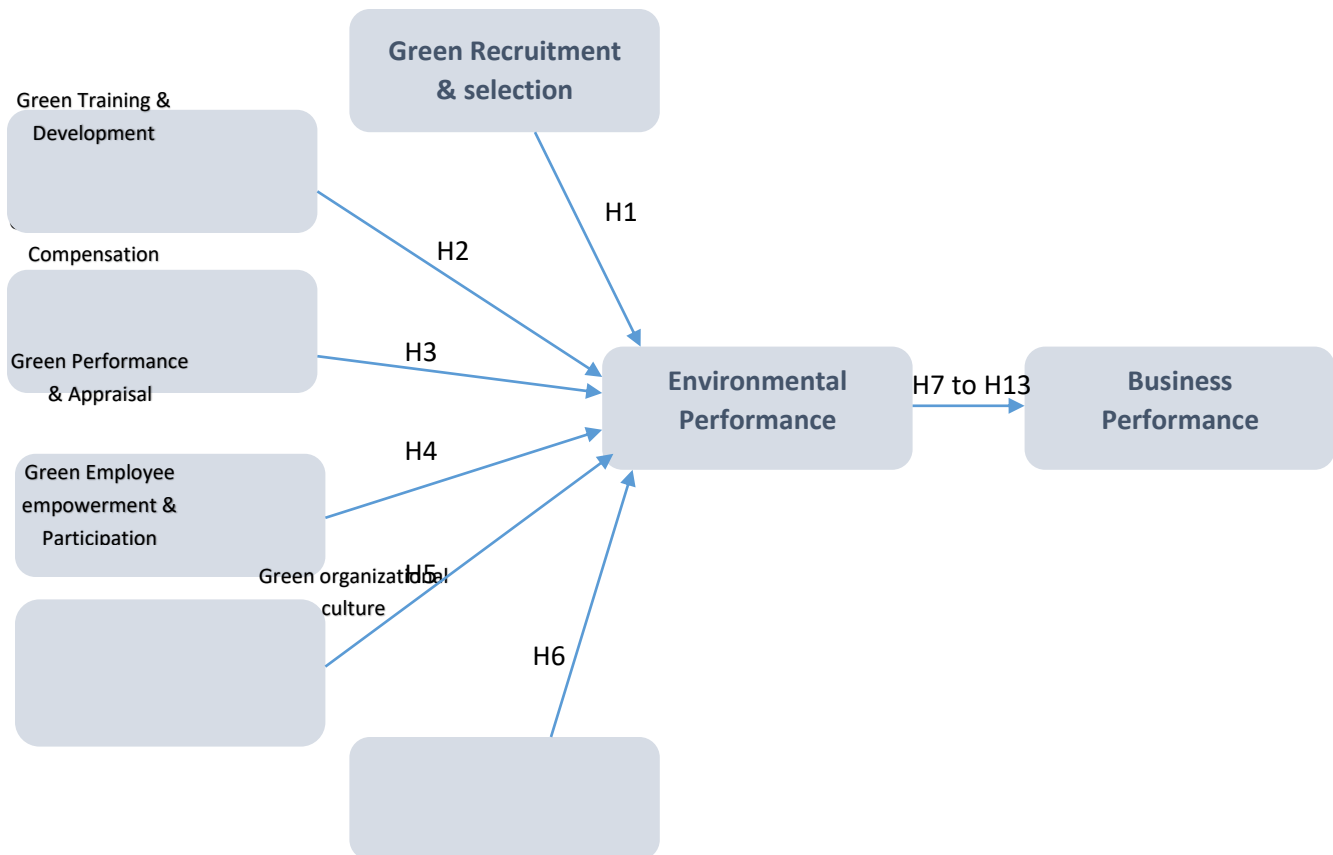


Figure 1: Conceptual Model

Table 3 shows the composite reliability, convergent validity, Cronbach's Alpha, discriminant validity (HTMT). Reliability values of all constructs are greater than 0.70 implying that the construct scores were reliable (Henseler et al., 2014; Suhartanto and Brien, 2018). The reliability values of all constructs were between 0.72 to 0.913. Fornell & Larcker (1981) suggested that the AVE greater than 0.5 indicates that reflective constructs are unidimensional. The AVE value in the table shows the value between 0.627 to 0.823, there by confirming the unidimensionality of all constructs. The Discriminant Validity value 'significantly' smaller than 1 (i.e. cutoff value of 0.85), expresses the reflective construct has the strongest relationships with its own indicators in comparison with than any other construct (Henseler, Ringle & Sarstedt, 2015; Prakash et al., 2017). All five constructs' HTMT values were < .85 cutoff value and fulfill the requirements of discriminant validity.

Table 3. Reliability and Validity Results

| Construct | Composi te Reliabilit y | Converg ent Validity | Cronbac h's Alpha | Discrimin ant Validity |
|---|--|-------------------------------------|----------------------------------|---------------------------------------|
| Green Recruitment and Selection | 0.842 | 0.823 | 0.913 | 0.732 |
| Green Training and Development | 0.863 | 0.749 | 0.872 | 0.691 |
| Green Performance Management And Appraisal | 0.921 | 0.654 | 0.921 | 0.765 |
| Green Reward and Compensation | 0.829 | 0.682 | 0.854 | 0.655 |
| Green Empowerment and Participation | 0.855 | 0.686 | 0.812 | 0.712 |

| | | | | |
|------------------------------|-------|-------|-------|-------|
| Green Organizational Culture | 0.911 | 0.627 | 0.883 | 0.761 |
| Environmental Performance | 0.871 | 0.733 | 0.807 | 0.795 |
| Business Performance | 0.854 | 0.687 | 0.728 | 0.801 |

The R-squared and Q-squared values of the endogenous latent variable for predictive accuracy is shown in table 4. R-square of EP and BP is 0.832 and 0.298 respectively. R-square between the value of 0.25, 0.50 and 0.75 shows the weak, moderate and strong association for the endogenous variable (Hair, Ringle, and Sarstedt, 2012; Henseler et al., 2015). After R-square, Q-square is analyzed for prediction of relevancy. A model that uses SEM analysis, Q^2 values equal to zero or below the zero show the weak prediction relevancy, values between the 0.35, 0.15 and 0.02 demonstrate that exogenous construct has a large, medium and small prediction relevancy respectively the endogenous latent construct. We have performed blind folding, and all the values are above zero which shows the predictive relevancy. Table 4 is given below:

Table 4. Blindfolding and R^2

| Construct | R^2 | Q^2 |
|-----------|-------|-------|
| EP | 0.832 | 0.578 |
| BP | 0.298 | 0.167 |

The coefficient of determination, R^2 , is 0.298 for BP (DV). This means that the variables including Green recruitment & selection, green training & development, green performance management & appraisal, green reward & compensation, green employee empowerment & participation, green organizational culture, and EP, explain 29.8 % of the variance in DV BP. The R-

square for mediator variable is 0.832, it means, Green recruitment & selection, green training & development, green performance management & appraisal, green reward & compensation, green employee empowerment & participation, and green organizational culture explain 83.2 % of the variance of EP.

Results confirm the that Green recruitment & selection ($\beta=0.072$; $t= 15.006$; $p=0.000$), green training & development ($\beta=0.628$; $t= 5.021$; $p=0.000$), green performance management & appraisal ($\beta=0.302$; $t= 10.037$; $p=0.000$), green reward & compensation ($\beta=0.252$; $t= 13.016$; $p=0.001$), green employee empowerment & participation ($\beta=0.667$; $t= 11.039$; $p=0.002$) and green organizational culture ($\beta=0.242$; $t= 8.032$; $p=0.000$) have significant positive relationship with EP. Further the EP ($\beta=0.925$; $t= 8.038$; $p=0.000$) have positive significant relationship with BP. Table 5 show the results of path coefficient analysis.

Table 5: Path Coefficient (Direct Effect)

| Path | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics (O/STDEV) | P-Values |
|-----------|---------------------|-----------------|----------------------------|--------------------------|----------|
| EP -> BP | 0.925 | 0.927 | 6.022 | 8.038 | 0.000 |
| GEP -> EP | 0.667 | 1.678 | 17.073 | 11.039 | 0.002 |
| GOC -> EP | 0.242 | 0.648 | 7.672 | 8.032 | 0.000 |

| | | | | | |
|-----------|-------|-------|--------|-------|------|
| GPMA -> | | | | 10.03 | 0.00 |
| EP | 0.302 | 0.621 | 8.113 | 7 | 0 |
| GRC_ -> | | | | 13.01 | 0.00 |
| EP | 0.252 | 0.548 | 15.930 | 6 | 1 |
| GRS -> EP | 0.072 | 0.370 | 12.959 | 15.00 | 0.00 |
| | | | | 6 | 0 |
| GTD -> EP | 0.628 | 2.141 | 29.496 | 5.021 | 0.00 |
| | | | | | 0 |

5.1 Mediation Analysis

Mediation analysis reveal that EP play a role of mediation between proposed relationship. Our statistical analysis confirm the mediating role of EP between Green recruitment & selection ($t= 3.512$; $p=0.002$), green training & development ($t= 4.845$; $p=0.000$), green performance management & appraisal ($t= 2.960$; $p=0.003$), green reward & compensation ($t= 5.021$; $p=0.000$), green employee empowerment & participation ($t= 2.792$; $p=0.001$) and green organizational culture ($t= 12.354$; $p=0.000$) and BP. Table 6 present the results of indirect effect. Hence, result support all proposed hypotheses.

Table 6: Mediation results (Indirect Effect)

| | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics (O/STDEV) | P-Values |
|------------------|------------------------------------|--------------------------------|---|-------------------------------------|-----------------|
| GEP -> EP -> BP | 0.642 | 0.498 | 0.042 | 2.792 | 0.001 |
| GOC->EP -> BP | 0.297 | 0.623 | 0.044 | 12.354 | 0.000 |
| GPMA -> EP -> BP | 0.281 | 0.597 | 0.082 | 2.960 | 0.003 |
| GRC -> EP -> BP | 0.581 | 0.552 | 0.093 | 5.021 | 0.000 |
| GRS -> EP -> BP | 0.441 | 0.376 | 0.087 | 3.512 | 0.002 |
| GTD -> EP -> BP | 0.233 | 0.242 | 0.052 | 4.845 | 0.000 |

Table 7: Summary of Hypothesis

| Hypotheses | T-values | P-values | Decision |
|--|-----------------|-----------------|-----------------|
| H1: There is a significant relationship between green recruitment & selection and environmental performance. | 3.512 | 0.002 | Supported |
| H2: There is a significant relationship between green training & development and environmental performance. | 4.845 | 0.000 | Supported |

| | | | |
|--|--------|-------|-----------|
| H3: There is a significant relationship between green performance management & appraisal and environmental performance. | 2.960 | 0.003 | Supported |
| H4: There is a significant relationship between green reward & compensation and environmental performance. | 5.021 | 0.000 | Supported |
| H5: There is a significant relationship between empowerment & participation and environmental performance. | 11.039 | 0.002 | Supported |
| H6: There is a significant relationship between green organizational culture and environmental performance. | 8.032 | 0.000 | Supported |
| H7: There is a significant relationship between green environmental performance and business performance. | 8.038 | 0.000 | Supported |
| H8: Environmental performance plays a role as mediator between green recruitment & selection and business performance. | 3.512 | 0.002 | Supported |
| H9: Environmental performance plays a role as mediator between green training & development and business performance. | 4.845 | 0.000 | Supported |
| H10: Environmental performance plays a role as mediator between green performance management & appraisal and business performance. | 2.960 | 0.003 | Supported |

| | | | |
|---|--------|-------|-----------|
| H11: Environmental performance plays a role as mediator between green reward & compensation and business performance. | 5.021 | 0.000 | Supported |
| H12: Environmental performance plays a role as mediator between green empowerment & participation and business performance. | 2.792 | 0.001 | Supported |
| H13: Environmental performance plays a role as mediator between green organizational culture and business performance. | 12.354 | 0.000 | Supported |

5. Discussion

The objective of the study was to investigate the novel relationship between GHRM practices, EP and BP. Table 7 shows a summary of hypotheses and results. The decision column highlights either the hypothesis was (1) supported; (2) not supported.

GHRM is one of the most prominent practice through which employee from initial stage of recruitment can create a perception regarding environmental beliefs of organization and understand the values that matters to organizations. The concept of green in HRM practices facilitate organization in two unique ways. First, it reveals the organization's belief and values toward environment from initial stage through selecting environmentally oriented employees, thus, it form a psychological agreement with employees from the beginning (Guerci et al., 2016; Renwick et al., 2013; Mandip, 2012). Second, it keep on reinforcing model practices that encourage green practice and continue to convey organizations green values to existing employees which induce them to hold organizational

values and mission as well as contribute in long term environmental performance (Chen, et al., 2015). In this study results revealed that green recruitment & selection, green training & development, green performance management & appraisal, green reward & compensation, green employee empowerment & participation, green organizational culture is positively related with EP. This research study showed that employees perceive green organizational value when the organization integrates environmental goals into the human resource practices. However, they ought to get knowledge and training to better equip with eco-friendly behavior (e.g., Ramus, 2001; Govindarajulu & Daily, 2004; Ahmad, 2015) which lead to contribute in environment performance. These findings are aligned with the results achieved by Berchicci and King (2007) and Hart and Ahuja (1996).

Further, the results obtained in this study restore the lost centrality of the green human resource practice by leveraging it as a key component for environmental and business strategy. Regarding environmental performance and business performance, the results point out that the environmental performance is positively linked with business performance of organizations. A possible explanation for this phenomena could be the NRBV theory that claim that “constrained by and dependent upon ecosystems, a firm’s strategy and competitive advantage will be rooted in capabilities that facilitate environmentally sustainable economic activities” (Hart, 1995). These findings are in-line with previous research studies (Ahmad, 2015; Darnall, et al. 2008; Gopal and Thakkar, 2012; Gupta 2018; Yusoff, Ramayah, and Othman, 2015), these research studies investigate HRM practices along with the purpose of encouraging ecological utilization of resources to emphasize environmental sustainability, create enhanced human resource behavior and obligation toward environmental health.

Moreover, the unique finding of the study is the mediating role of EP between green recruitment & selection, green training & development, green performance management & appraisal, green reward & compensation, green employee empowerment & participation, green organizational culture, and BP. It was found that EP mediates the relationship between green recruitment & selection, green

training & development, green performance management & appraisal, green reward & compensation, green employee empowerment & participation, green organizational culture. The study provides empirical evidence that GHRM practices enhanced EP, which leads to enhance BP. This study further contributed in domain of natural resource base theory that Malaysian organizations are practicing and involving in environment-friendly operations.

6. Conclusion

Green organizational practices emerged as one of the most pivotal phenomena of ecological sustainability. It helps organizations to achieve environmental performance along with competitive advantage in local and foreign markets. The best way to implement and achieve green practices in organizations is through employees (Masri, and Jaaron, 2017), since, human resources are the activators of all other processes and resources. Our research seeks to answer the question that how the adaptation of GHRM and green culture leads to environmental performance which in return increases the BP of the firm. Results indicated that GHRM enables the environmental behavior of the employee, by providing them training on environmental awareness and link it with the rewards based on environmental achievement (Arulrajah et al., 2015). These implications are important and help in enhancing the environmental performance. Moreover, environmental performance significantly intervenes in the relationship and increases BP (King and Lenox, 2000; Pucihar, et al., 2019), when the organization has implemented green HRM and culture practices (Gupta and Kumar, 2013). The study found that green culture is crucial for employees, and top management support is essential to promote it to the bottom. It helps employees to focus on environmental management aspects of the organizations, and enable them to know their specific green targets, goals, and responsibilities in the organization. This study contributes to the literature on green HRM while proving the empirical

evidence that GHRM and green culture are the important enablers of environmental and BP hence managers need to adopt the practices to levitate their business performance.

7. Implications to Practice

This study contributes significantly by providing new insight into the relationship between green human resource management, environmental performance and business performance for managers. Managers should involve in green practices to build trust and competitiveness globally. Human resource plays a pivotal role to achieve the green and monetary goals of the organization. Green practices motivate employees to perform better. Government awareness programs about the green environment could also enhance the individual determination to perform better and adopt the green organization. The model of the study provides guidance to managers for implementing most substantial GHRM practices that effect the environmental performance by reducing energy, water, emissions and wastage from facilities. Globally environmental performance has become one of the critical issues in manufacturing sector, hence organizations are in need to enhance their environmental sustainability (Küçükbay, & Sürücü, 2019), and organization can substantially enhance their green production capabilities which are necessary to meet the ISO standard. Further managers to link business performance strategies with environmental performance because higher environmental performance can increase business performance in terms of profit growth, market share and net income. Moreover, environmental performance can create a positive image of a firm into customers mind which leads to gain customer loyalty. Additionally, the implementation of GHRM practices present in this research support manufacturing organizations in building environmentally friendly organization culture through defining green values, practices, initiatives, and rules.

8. Limitations and Future Directions

In this research, data was collected from limited organizations of manufacturing sector in Malaysia, therefore the findings are limited to manufacturing sector of developing country, hence it is proposed that future researchers can replicate the study in other sectors like food, logistic and service in other developing and in developed countries. This study was based on a cross-sectional research design, hence, an important step for further research is the collection and analysis of longitudinal data to rule out alternative explanations. The implication of the given magnitude of the results, opinion, and response of other stakeholders of sustainability may add pivotal findings. The same model could be applied in other businesses and industries to concrete the results of GHRM on business performance. Additionally, it is suggested to utilize other variable(s) in the current model to explore the role of GHRM. Moreover, this study employed a single mediator in the model, it is proposed to use other variables to find the association between independent and dependent variable(s). Lastly, in the presence of environmental performance as a mediator, other variables possibly add up in parallel/serial mediation approach in the same model.

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