



Impact of GHRM on Organization's Environmental Performance: Mediating Role of Green Employee Empowerment

Mohammad Ashraful Alam^{*1}, Professor Xiongying Niu^{*2}

ABSTRACT

Green Human Resource Management (GHRM) practices are increasingly considered a crucial business strategy for organizations in environmental management and have impact on environmental performances of organization. Though much attention has been given on GHRM practices, very few studies exist relating to this issue in developing country context.

Purpose: The purpose of this study is to assess the effect of different GHRM practices on the Organization's Environmental Performance (OEP) through Green Employee Empowerment (GEE).

Methodology: The PLS path modeling technique is used to test the hypotheses of the study based on a questionnaire survey of 340 responses from the manufacturing sector.

Findings: The empirical finding shows that the GHRM practices have significant effects on OEP and GEE was found positively mediate the impact of GHRM practices on OEP.

Originality/Contribution: This research has theoretically contributed to the green HRM/HRM literature by discovering the relationship between various green practices and their results related to EP in manufacturing organizations. This paper extends the literature by exploring the indirect effects of GHRM on OEP via GEE. The results recommend that GHRM practices may lead employees toward green empowerment to achieve environmental performance.

Keywords: Green Human Resource Management (GHRM); Green Employee Empowerment (GEE); Organization's Environmental Performance (OEP); Environmental Management System (EMS).

JEL Classification: M10, M11, M12, M19.

This is an open access article under Creative Commons Attribution 4.0 License.

1.0 Introduction

At present environmental issues become global concerns that create challenges to society and business (Jovan et al., 2006; Boral Review, 2018). These challenges put enormous pressure on manufacturing companies linked to environmental demands (Hameed et al., 2019). Manufacturing sectors generate a huge amount of emission and pollution by industrial production which creates massive destruction to human health and the

* Corresponding author.

1 PhD fellow, School of Business, UIBE, Beijing, China. Email: mashrafulalam@yahoo.com

2 Professor, School of Business, UIBE, Beijing, China. Email: niuxy@uibe.edu.cn

environment (The EEA 2012). The impact of pollution on climate change, as well as the indiscriminate utilization of natural capital, have drawn the attention of businesses, states, and mobilized segments of society of environmental issues (Willerdig et al., 2016). Accordingly, new policies and regulations have been developed to address environmental issues and sustainable development. To cope with environmental regulations, Businesses and industries are continually changing and integrating environmentally sustainable activities and products into their operations (Marcus and Fremeth, 2009). Many companies are adapting GHRM practices to reduce environmental wastage.

GHRM is described as a strategy which is compliant with its environmental conservation policies and preservation activities (Ren et al., 2018). It includes a series of policies and procedures that promote corporate staff to protect the abundance of knowledge-capital in the most environmentally sustainable and economical manner (Tang et al., 2018; Masri & Jaaron, 2017). Policies and procedures are antecedents of implementing GHRM to create the HR practices in attaining greening in the organization (Prasad, 2013). GHRM practices such as training, leadership development, selection, performance measurement, recruitment, and reward systems develop employee's green abilities, motivate employees to remain green, and provide green opportunities (Pellegrini et al. 2018; Renwick et al., 2013) which subsequently enhances employees' green behavior to voluntarily improve organizations' performance (Kim et al., 2019). Researches linked GHRM practices and Environmental Performance (EP) (Jabbour and Santos, 2008; O'Donohue and Torugsa, 2016; Gholami et al., 2016; Shen et al., 2018;) and discovered that GHRM practices have a positive impact on organization's environmental performance (OEP) through green initiatives such as waste reduction and operational performance (Dumontet et al., 2016; Shen et al., 2018).

In the area of HRM, many studies explored the effect of GHRM practice on firm's environmental performance regarding developed country (O'Donohue and Torugsa, 2016; Renwick et al., 2016; Jabbour and Jabbour, 2016 etc.). Again, most of the researchers examined relationship of GHRM with EP on single industrial sector, for example, study on HR practices and EM in aerospace industry (Daily et al. 2007); GHRM practices in the restaurant industry (Haddock-Miller et al., 2016); GHRM practices in the healthcare sector (Mousa & Othman, 2020) and GHRM practices in the sports sector (Gholami et al., 2016). Besides several literatures suggested that green employee empowerment (GEE) is very crucial for the organizations to perform the green task (Tariq et al., 2016). Employee Empowerment improves job performance in terms of effectiveness and efficiency by increasing employee motivation (Jackson et al., 2014). Muogbo (2013) opined that empowered employee experience intrinsic inspiration, which leads to better work-related results including job satisfaction. So, GEE helps GHRM practices to attain the OEP.

So, there is still a lack of studies on what HR practices are essential for proper and effective implementation of GHRM in developing countries, as well as how these practices can be applied in the workplace to help the company in building an environmentally friendly culture and optimizing EP (Masri & Jaaron, 2016). Moreover, the mediating effect of GEE between GHRM practices and OEP is yet to be tested. Therefore, this study assesses the effect of GHRM practices on the EP of various types of industries in manufacturing sector through GEE to fill the literature gap.

This research contribute to literature by enhancing our knowledge about whether the GHRM practices have any effect in attaining EP within the manufacturing organizations and eliminate the contradiction among researchers on the impact of GHRMP on OEP. This paper also adds to the present GHRM literature by including GEE exploring the underlying mechanism of GHRM and EP of organization and provides empirical evidence of association of GHRMP and OEP. The following research questions guide this article:

- Do the different GHRM practices have any effect on the environmental performance of organizations?
- Does GEE has any mediating role between GHRM practices and organizations' environmental performance?

This article is presented into five major sections. The study introduction is presented in the section 1. The literature review, hypothesis development and research framework are offered in the second section. The methodology is provided in section 3. A discussion of the study based on the empirical results is outlined in the section 4. The fifth section contains the study's conclusion and implication with recommendations for future research as well as a reference list.

2.0 Literature review

GHRM is one of the powerful sections of HRM. GRHM is a series of strategies for companies to build human resources in ways that increase the firm's EP and long-term sustainability (Wong et al., 2018; Jaramillo et al., 2018). When HRM practices of an organization (e.g., recruitment, training, performance measurement and reward systems etc.) develop employee's green abilities are known as GHRM practices. Performance, behaviors, attitude, and skill of human resources can be formed in an eco-friendly way by adapting GHRM practices (Arulrajah et al., 2015). According to Lee (2009), GHRM practices assist companies in lowering expenses without compromising top talent, jobs, or part-time labor. In the words of Nijhawan (2014), GHRM practice is

the actual GHRM plan, process, and technology implemented in the organization; the aim is to decrease the organization's negative environmental impact while increasing its positive environmental impact.

Currently, most businesses execute strategic EP programs to acquire a competitive advantage (Rodriguez et al., 2012). EP is the contribution of organizations to environmental conservation and establishment of measurable operational parameters within the specified limits (Paillé et al., 2020). HR managers play a major role in achieving these EP goals by hiring, training, assessing, and rewarding environmentally friendly workers (Renwick et al., 2013; Jabbour & Santos, 2008). Scholars have focused on HRM practices that are intended to increase employee awareness, knowledge, skills, and motivations to improve the company's EP (Daily and Huang, 2001, Ramus, 2002, Jabbour et al., 2010, Guerci et al., 2016, Zibarras and Coan, 2015, Tang, et al., 2018).

At the organizational level, the implementation of green human resource management has improved resource efficiency and economic impact (Alhadid & Abu-Rumman, 2014) and improved organizational performance (Renwick et al., 2013), established a more robust public image and brand awareness (Cherian & Jacob, 2012), reduced the company's environmental impact and created a sustainable competitive advantage (Macke & Genari, 2018). Rawashdeh (2018) found that environmentally-based corporate behavior affects the sustainable environment and organizational performance. A lot of studies have shown that companies that implement higher-level environmental management systems can benefit more from it and improve their environmental performance (Wu et al., 2019).

In terms of individuals (employees), the application of green human resource management enhances personal empowerment that ultimately improves productivity and performance and promotes self-control and problem-solving capabilities (Renwick et al., 2013). Also, Cherian and Jacob (2012) added that the application of green HRM could increase employee participation, make employees more comfortable in the company, and attract high-quality employees to join the company.

2.1 Theoretical background

Theories of GHRM consider GHRM practices as organizational resource and efficiency for its' business strategy. The resource-based view (RBV) theory mainly focuses on the firm's internal resources such as assets, skills, and competencies, and how they can be used to gain competitive advantages (Barney, 1991). Organization's adoption of green HRM at the employee level for its outcome to enhance the overall development of the organization (organization's EP) is considered as strategic competency (Arulrajah & Opatha, 2016). According to RBV, the HRM-competencies are considered as internal resources where the primary aim of GHRM is to develop, motivate, and supply opportunities for better job behaviors for firm's competitive advantage (Boxall and Steeneveld, 1999). It is argued that if human resources follow RBV standards to produce and encourage higher competitive efficiency, it makes an organization superior over its rivals within the market (Takeuchi et al., 2007).

AMO theory (Appelbaum et al., 2000) describes the different practices of human resources depending on three major factors, including ability, motivation, and opportunity. It explains HRM activities that improve employee ability, job motivations and opportunities lead to corporate civic actions of workers that add more to the success of the organization (Marin-Garcia & Tomas, 2016). Appelbaum et al., (2000) stated that high productivity, reduced waste, high quality, and increased profit are the outcomes of this theory. Based on the AMO model, Pham et al. (2019) looked at the relationship between green training, green employee engagement, green performance management, and corporate citizenship behavior toward the environment in the hospitality industry. Several studies examined GHRM practices in the view of AMO theory and found positive impact on the employees' behaviors that affect the organization's environmental performance (Shen et al., 2016; Yu et al., 2020; Pinzone et al., 2016).

Based on the above discussion, it is conceivable that the execution of GHRM in a company indicates some benefits or positive impacts for the organization. On the basis of the AMO theory and above literature, the following GHRM practices are used in this study:

- Green Recruitment and Selection;
- Green Training and Development;
- Green Performance management and Appraisal;
- Green Compensation and Reward Management;
- Green Employee Empowerment as Mediator;

2.2 Hypothesis development and research framework

2.2.1 Green recruitment & selection and Organization's Environmental Performance (OEP)

Green recruitment and selection (GRS), according to Ahmad (2015), is a method that stresses the importance of the environment and makes it a key component. Attracting and hiring candidates with knowledge, abilities, attitudes, and behaviors that adhere to an organization's environmental management system is known as green recruitment and selection (Ullah and Jahan 2017). According to Renwick et al. (2012), the organization must select and recruit an employee who values and is involved in the environment in order to create a green

workplace. Many researchers have found a close relation between GRS and the OEP. Jabbour et al. (2010) after surveying 94 Brazilian organizations opined that recruiters should choose applicants based on environmental awareness and inspiration. Bhutto & Auranzeb (2016) conducted an empirical study on 376 Pakistani firms and found positive relation between GRS and the firm's EP. In a study of 204 Chinese company workers, Roscoe et al. (2019) discovered that green human resource management practices such as procurement and selection help to improve corporate culture. So, GRS helps the employer to recruit an environmentally sound candidate who can improve the organization's environmental efficiency while still improving its business success in the future. So we can hypothesises-

H 1: GRS is positively related to OEP.

2.2.2 Green Training and Development and OEP

Green training and development (GTD) refers to a set of programs that enable workers to learn environmental protection skills and to pay attention to environmental issues, all of which are essential for achieving environmental goals (Teixeira et al. 2012). Environmental training could directly impact environmental awareness among the employees as opined by Opatha & Arulrajah (2014). Environmental awareness, knowledge, and employees' skills can be increased through training (Sammalisto & Brorson, 2008). Many researches empirically affirm that training is important for the accomplishment of green management at organizations. Daily et al. (2012) in their study found that EP is influenced more by environmental training than environmental empowerment. Sarkis et al. (2010) studied with car companies in Spain and found that training affect in the degree of the implementation of green management practices by organizations. In a study conducted with companies in Ghana, Cole et al. (2008) concluded that training is a variable which affects the environmental performance of companies positively. Insufficient training, according to Govindarajulu and Daily (2004), can cause employees to be unable or unwilling to be engaged in environmental improvement efforts. So, our hypothesis is-

H 2: GTD is positively related to OEP.

2.2.3 Green Performance Management and Appraisal (GPA) and OEP

The Performance Management and Appraisal System (PMA) is a framework for assessing the EP levels in different departments within an enterprise and compiling useful records of the EP of managers (Wehrmeyer, 1996). Through the performance evaluation system, employees at all levels should clarify green plans, performance indicators and standards, and have a dialogue on green issues within the enterprise (Renwick et al., 2012). Organizations' green goals, objectives, and responsibilities should be defined and incorporated into evaluations of managers and employees (Renwick et al., 2012; Prasad, 2013). This approach would help employees improve their expertise, skills, and capabilities to boost up their environmental performance Jackson et al., 2011; Arulraja et al., 2015. Pinzone et al. (2016) found in a study conducted by the British National Health Service that incorporating environmental factors into performance management can increase employees' willingness to pay extra effort for EM. Employees regard the use of "green" performance improvement practices as a symbol of their company's environmental commitment (Harvey et al., 2013 quoted in Pinzone et al., 2016). Marcus & Fremeth, 2009 stated that installing enterprise-wide environmental sustainability guidelines and renewable information systems/audits to collect valuable data on environmental performance would be smoother as a proactive approach for companies. Therefore, we infer that-

H 3: GPA is positively related to OEP.

2.2.4 Green Compensation and Reward Management and OEP

Green compensation and reward management (GCR) is an incentive system intended to improve employee behavior by rewarding green skills development and successes associated with environmental programs with monetary (pay increases or bonuses), non-monetary (sabbaticals, special leave, gifts), or public praise-based incentives (Ullah & Jahan, 2017). Compensation has recently been considered to be of great importance to environmental management among the numerous factors that affect environmental efficiency (Zou et al., 2015).

Researchers found that organization's environmental performances are positively related to GCR management (Rizwan and Ali, 2010; Ahmed and Sadia, 2017). Fernandez et al. (2003) performed several studies that demonstrated the effectiveness of paying for EM results. In a study of 469 US businesses working in high-pollution sectors, Berrone and Gomez-Mejia (2009) discovered that eco-friendly companies compensated their CEOs more than non-eco-friendly companies and long-term company performance paid on a salary associated with a greater success rate in pollution prevention. Rewarding employees for their performance and engagement in environmental programs promotes and enhances their commitment (Daily & Huang, 2001; Renwick et al., 2012). Accordingly, it is hypothesized that-

H 4: GCR is positively related to OEP.

2.2.5 Mediating role of Green Employee Empowerment

Green Employee Empowerment (GEE) is considered the most important GHRM practice to achieve organizational green goals (Tariq et al., 2016). The Muogbo's (2013) study found that empowered employees feel motivated internally, which contribute to favorable results linked to employment, such as satisfaction with work. The AMO theory (Appelbaum et al., 2000) describes how GHRM practices impact workers' ability and motivation to accomplish green goals and deliver the opportunities to attain green targets. Norton and his colleagues explained that employee engagement would lead to individual actions that exceed organizational expectations (Norton, et al., 2015).

GHRM practices enhance employee empowerment by developing skills, knowledge, encouragement which leads to organizational environmental performance. Renwick et al. (2013) have suggested that businesses use human resource management process to successfully support environmental protection. For example, by delivering green training and implementing workforce engagement programs, the company will improve employee enthusiasm for the social and economic benefits of EM (providing freedom for green tasks). GHRM practices may lead to GEE since the green initiative is direct and allows employees to be authorized in the process of achieving green goals.

Previous researches have found that empowerment improves employee satisfaction and organizations' engagement (Raza et al., 2015). Laschinger et al. (2002) showed that creating a working environment which improves and encourages the use of empowerment, has a positive effect on the engagement of employees and thus increases the organization's productivity. Employee engagement in eco-initiatives at the NUMMI automotive plant in the United States shows that employee involvement improves environmental performance while employees possess "expertise and skills that managers lack" (Rothenberg, 2003). An analysis (Henriques & Sadorsky, 1999), of Canadian companies shows that those with more successful green engagement profiles correlate favorably with workers as a source of pressure; whereas Belgian research (Buisse and Verbeke, 2003) on high-level polluters demonstrates substantial affiliations between organizations self-identifying as eco-leaders and putting a high priority on their employee stakeholders. So, it is obvious that there is relation among GHRM practices, GEE, and OEP (Tariq et al., 2016; Gholami et al., 2013; Dumont et al., 2016).

Employees may be obligated to return to OEP if they expect gains from their corporate behavior (Jiang et al., 2012). GHRM practice enhances employee awareness, enthusiasm, and participation in green programs, resulting in increased employee empowerment against green goals (Appelbaum et al., 2000). Employees may be more inspired to display discretionary behaviour when it comes to environmental policy as a result of their improved sense of empowerment (Hameed et al., 2019). GEE has a positive effect on motivational levels when it comes to performing green projects, and improves an organization's results (Tariq et al., 2016). Hameed et al. (2019) discovered that GEE has a major indirect impact on organizational citizenship behavior toward the environment. Hence, GHRM practice can improve the organization's environmental activities through employee empowerment (Hoffman, 1993). Therefore, it is hypothesized that GEE mediates the relationship between GHRM practices and OEP as bellow:

H 5a: GEE mediates the relationship between GRS and OEP.

H 5b: GEE mediates the relationship between GTD and OEP.

H 5c: GEE mediates the relationship between GPA and OEP.

H 5d: GEE mediates the relationship between GCR and OEP.

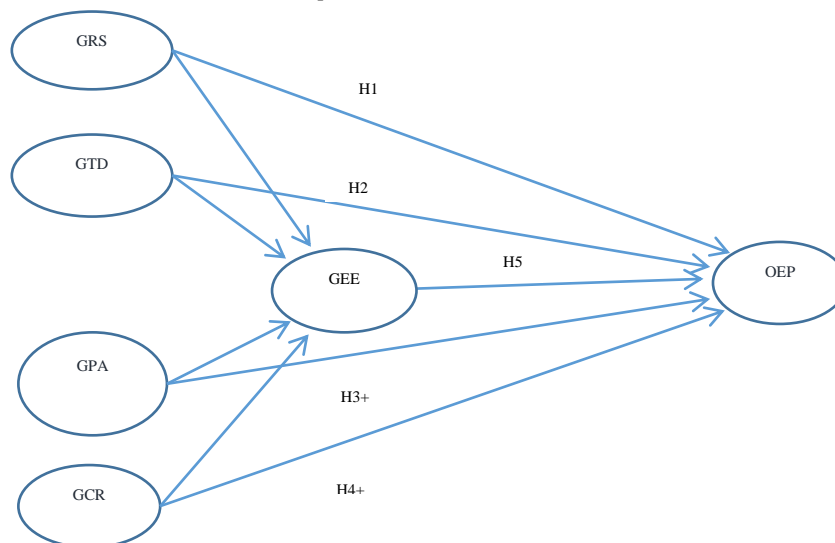


Figure 1. The research framework.

H 1-4 (Direct Effect)

H 5 (Mediating role of Green Employee Empowerment)

(GRS- Green Recruitment & Selection; GTD- Green Training & Development; GPA- Green Performance Management & Appraisal; GCR-Green Compensation & Reward Management; GEE-Green Employee Empowerment; OEP- Organization's Environmental Performance)

3.0 Methodology

3.1 Sampling

The manufacturing industries registered and operates on a full-time basis in Bangladesh are the population of this study. By using a disproportionate stratified sampling technique, a total 340 valid questionnaire samples out of 800 cases used for the questionnaire analysis process, which is 42.5 percent of all questionnaires submitted (Sekaran 2003). The majority of the sample were male (81.5%) and the minority were female (18.5%); the majority were between 31 - 40 years old (39.4%) and the majority held bachelor (42.6%). Greater focus was given in identifying and selecting the most suitable respondent in each firm to ensure that information was reliable, as long as the main informant had management responsibilities and control over all human-resource management operations at the senior management level and knew of the company's general plan for articulating and discussing issues relating to industrial HR activities more knowledgeably. The majority was from 'other' category not lower than executive (40.0%), Top Management (24.4%), Human resource manager (13.5%) and the quality manager (22.1%) and the majority was employed 6-10 years (37.6%). Regarding environmental management, 81.2% of respondents responded that their organization has implemented green HRM practices or HR involvement in Green Program and 52.9% of companies have incorporated environmental management into their business operations.

3.2 Assessment of the measurement model

The measurement model (outer model) describes the measurement properties of the observed and measured objects by linking them to the unobserved latent variables (Tabachnick & Fidell 2001). The measurement model comprises of 6 latent variables and 28 measured items (see the source in table-1). All measured items are loaded on only one latent variable each. The error terms cannot apply to other items of the model.

Out of the four independent latent variables of GHRM Practice determinants, three (GRS, GTD, GPA) are indicated by five measured items, one (GCR) is indicated by three measured items. One mediating variable, i.e., GEE, is indicated by four items. All these are measured with "1-strongly disagree" and "5-strongly agree" endpoints. The dependent variable (Organization's environmental performance) is indicated by six measurement items and evaluated with "1-much worse" and "5-much better" endpoints. The questionnaire's items were sourced from previous literature (table-1). The partial least squares (PLS) path modeling technique was selected for analysis the measurement and structural model because of its ability to work with small/large sample sizes (Ringle et al., 2005). All of the measurements are reflective objects that demonstrate the path of causality from the latent variables to the measured items.

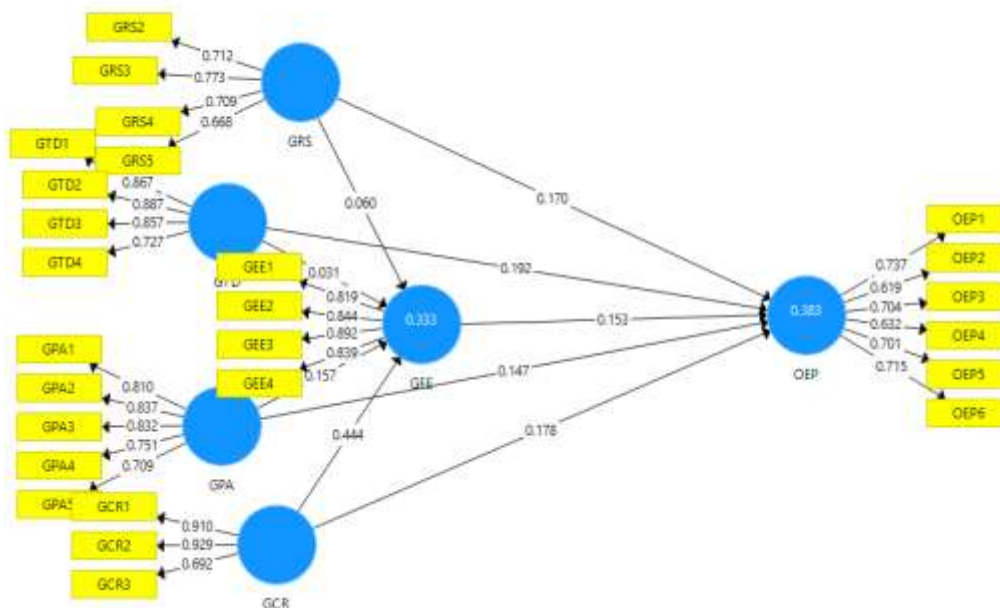


Figure 2. The measurement model of the study.

3.2.1 Reliability

Reliability of the model was tested with individual item reliability, composite reliability (CR) and Cronbach's alpha (table 1). Outer loadings of the items were in acceptable level (two under the 0.60 threshold value and deleted) (Hair et al., 2016). All loadings have exceeded the recommended value of 0.707 except four items but still above the threshold of 0.60 levels (0.668, 0.692, 0.619, and 0.632 respectively) (Chin 1998; Hair et al. 2016).

Table 1.

Outer loading, CR, AVE and Cronbach Alpha

	Items	Loading	AVE	CR	Cronbach Alpha	Item source
GRS	GRS1	Deleted	0.514	0.806	0.712	Jackson et al., (2011); Arulrajah, Opatha, & Nawaratne, (2016); Renwick et al., (2013).
	GRS2	0.712				
	GRS3	0.773				
	GRS4	0.709				
	GRS5	0.668				
GTD	GTD1	0.867	0.701	0.903	0.857	Masri & Jaaron (2017)
	GTD2	0.887				
	GTD3	0.857				
	GTD4	0.727				
	GTD5	Deleted				
GPA	GPA1	0.810	0.626	0.893	0.851	Mandip, (2012); Renwick et al., (2013); Razab, Udin, & Osman, (2015)
	GPA2	0.837				
	GPA3	0.832				
	GPA4	0.751				
	GPA5	0.709				
GCR	GCR1	0.910	0.72	0.885	0.800	Masri & Jaaron (2017)
	GCR2	0.929				
	GCR3	0.692				
GEE	GEE1	0.819	0.721	0.912	0.871	Men (2010); Jalal Hanaysha (2016)
	GEE2	0.844				
	GEE3	0.892				
	GEE4	0.839				
OEP	OEP1	0.737	0.512	0.842	0.781	Janaka et al. (2018) and Masri & Jaaron (2017).
	OEP2	0.619				
	OEP3	0.704				
	OEP4	0.632				
	OEP5	0.701				
	OEP6	0.715				

(GRS- Green Recruitment & Selection; GTD- Green Training & Development; GPA- Green Performance Management & Appraisal; GCR-Green Compensation & Reward Management; GEE-Green Employee Empowerment; OEP- Organization's Environmental Performance)

For further analysis, the 26 items were held in the conceptual model. As seen in Table-1, Cronbach's alpha and Composite reliability for the all items and 6 latent variables scales were all above the 0.707 criterion (Hair et al., 2016). In other words, the results were reasonable for the testing of newly formed scales. With these trends, a high degree of reliability was determined.

3.2.2 Validity (Convergent and Discriminant Validities)

Convergent validity is an evaluation that evaluates the consistency of multiple indicators in the same framework. The indicator's factor loading, composite reliability (CR) and average variance derived (AVE) must all be weighed when determining convergent validity (Hair et al., 2016). The meaning can be somewhere between 0 and 1. The AVE value should be greater than 0.50 to ensure convergent validity (Hair et al., 2016). All the values are in the recommended value (table-1).

Discriminatory validity refers to the degree to which the constructs empirically vary. It also tests the extent to which systems are overlapping (Hair et al., 2016). For the evaluation of discriminant validity, cross loadings, Fornel & Larker and Hetrotrait monotrait ratios (HTMT) may be used (Hair et al., 2016). All the value of cross loadings (table-2) are above 0.70 (Hair et al., 2016).

Table 2.
PLS Output of Cross Loading.

	GCR	GEE	GPA	GRS	GTD	OEP
GCR1	0.91	0.493	0.296	0.357	0.394	0.411
GCR2	0.929	0.52	0.329	0.337	0.402	0.458
GCR3	0.692	0.371	0.421	0.444	0.405	0.364
GEE1	0.468	0.819	0.343	0.386	0.249	0.342
GEE2	0.426	0.844	0.316	0.271	0.261	0.3
GEE3	0.562	0.892	0.355	0.245	0.344	0.456
GEE4	0.375	0.839	0.25	0.26	0.259	0.335
GPA1	0.338	0.339	0.81	0.357	0.336	0.373
GPA2	0.339	0.354	0.837	0.47	0.37	0.36
GPA3	0.339	0.342	0.832	0.33	0.343	0.417
GPA4	0.268	0.213	0.751	0.344	0.29	0.258
GPA5	0.283	0.178	0.709	0.389	0.304	0.273
GRS2	0.417	0.281	0.37	0.712	0.377	0.288
GRS3	0.28	0.262	0.355	0.773	0.284	0.349
GRS4	0.214	0.189	0.244	0.709	0.215	0.344
GRS5	0.341	0.246	0.388	0.668	0.407	0.325
GTD1	0.458	0.314	0.398	0.408	0.867	0.424
GTD2	0.444	0.338	0.411	0.4	0.887	0.431
GTD3	0.353	0.243	0.327	0.367	0.857	0.39
GTD4	0.273	0.183	0.227	0.314	0.727	0.279
OEP1	0.566	0.509	0.433	0.312	0.438	0.737
OEP2	0.213	0.216	0.285	0.278	0.272	0.619
OEP3	0.237	0.227	0.233	0.287	0.277	0.704
OEP4	0.265	0.209	0.195	0.439	0.249	0.632
OEP5	0.244	0.185	0.179	0.323	0.259	0.701
OEP6	0.309	0.267	0.371	0.259	0.335	0.715

The Fornell-Lacker criterion is the diagonal elements are the square roots of AVE (Hair et al., 2016). Table-3 indicates that the diagonal is the square root of the AVE of the latent element, and that the higher the column or row, the higher the AVE. This implies that, in comparison to other model constructs, the components are significantly connected to their respective indicators (Fornell & Larcker, 1981; Chin, 1998), implying excellent discriminant validity (Hair et al., 2016).

Table 3.
Fornell-Larcker Criterion.

	GCR	GEE	GPA	GRS	GTD	OEP
GCR	0.851					
GEE	0.548	0.849				
GPA	0.401	0.377	0.789			
GRS	0.437	0.343	0.475	0.716		
GTD	0.467	0.331	0.419	0.448	0.837	
OEP	0.485	0.428	0.437	0.456	0.464	0.716

Another predictor of discriminant validity is HTMT values which should be less than a 0.85-0.90 threshold (Henseler, et al., 2016). Table-4 displays that all the values of the HTMT are below the threshold value 0.85.

Table 4.
Heterotrait-Monotrait Ratio (HTMT)

	GCR	GEE	GPA	GRS	GTD	OEP
GCR						
GEE	0.643					
GPA	0.494	0.414				
GRS	0.608	0.443	0.626			
GTD	0.559	0.369	0.475	0.582		
OEP	0.564	0.465	0.489	0.627	0.531	

Note: The values (in bold) indicated discriminant validity is lower than the HTMT threshold value 0.85 criterions.

Overall, discriminant validity for this measurement model can be acknowledged, and discriminant validity between the constructs is endorsed.

3.3 Assessment of the structural model

The advanced PLS method is used to measure the structural model to analyze the interactions between latent independent and dependent variables. There are 6 latent variables in the inner structure model. The effects of the structural model were analyzed in order to know the predictive relevancy and the link between the structures with its strength and consistency and to judge the hypotheses developed in the study. There were four major measuring standards i.e. path coefficient (β value), the coefficient of determination (R^2), the predictive relevance the model (Q^2), and T-statistic value. A bootstrapping analysis was performed following Hair et al. (2016).

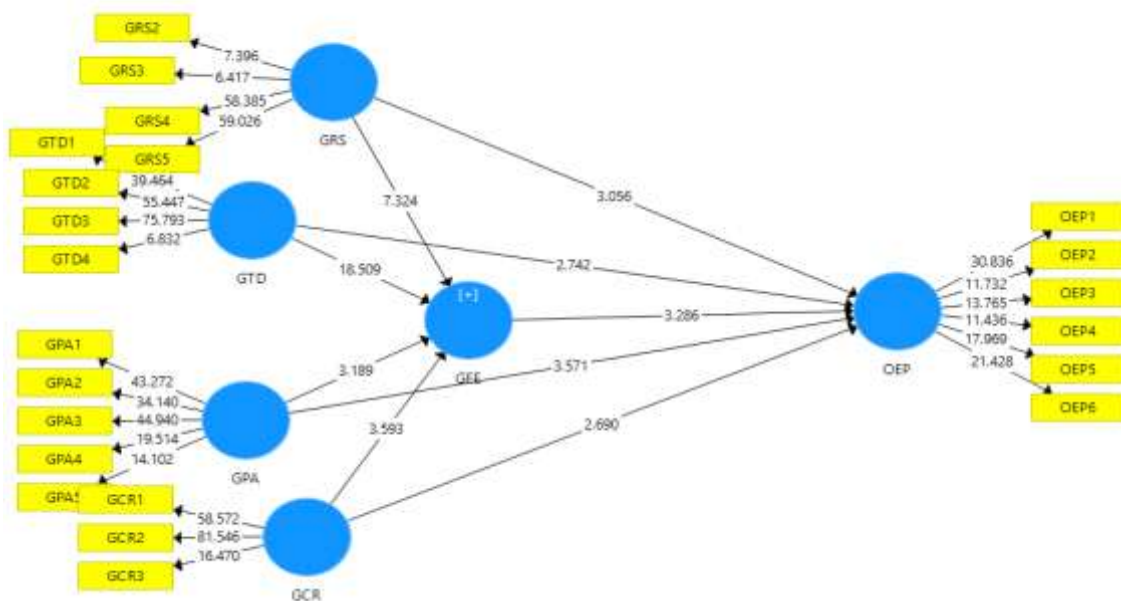


Figure 3. Path model significance results

3.3.1 R-square and Q square

The R^2 value higher than the critical values of 0.67, 0.33 or 0.19 indicates that the relationship is substantial, moderate and weak, as well as the magnitude of the impact (Chin 1998). The value of R^2 was therefore moderate in this analysis.

The value of the Q^2 is the statistical relevance criterion of the model. The effects of values for Q^2 should be significantly higher than zero to demonstrate the predictive relevance of the exogenous structure to the endogenous structure under consideration on the basis of Hair et al., (2016). Table- 5 indicates that the Environmental Organization (OEP) and GEE cross-validation values were reported at 0.160 and 0.226, respectively. Both test results were adequate and reasonable.

Table 5.
R² and Q²

Construct	R ²	Q ²
GEE	0.333	0.226
OEP	0.383	0.160

3.3.2 Multi-collinearity test

Any research might have a problem of multi-collinearity. This problem indicates that the exogenous constructs of variance described in the endogenous structure do not overlap and so do not explain any single endogenous variable variance (O'brien, 2007). A variance inflation factor (VIF) is widely used to analyze and quantify the degree of multi-collinearity (O'brien, 2007). For measuring and analyzing the degree of multi-collinearity, Variance Inflation Factor (VIF) is widely utilized (O'brien, 2007). A multi-collinearity problem arises when the largest VIF is more than 5 (Hair et al., 2016). All of the VIF values (Table 6) are less than 5 (ranging from 1.428 to 1.736).

Table 6.
VIF

GCR-GEE	1.437
GPA-GEE	1.428
GRS-GEE	1.502
GTD-GEE	1.469
GCR-OEP	1.736
GEE-OEP	1.502
GPA-OEP	1.466
GRS-OEP	1.507
GTD-OEP	1.471

3.3.3 Structural model path coefficient

The inner structural model for the dependent latent variable (OEP) is estimated using indexes for each latent variable and path coefficients between latent variables. The structural model was used to calculate by looking at R², Q², path coefficients, and t-values ($p < 0.05$) (Hair et al., 2016). The magnitude of standardized parameter estimates between latent variables and t-values (> 1.96 , $p < 0.05$) is used to test the hypotheses.

3.3.4 Hypotheses tests

The hypothesis testing is shown by the structural model assessment, as illustrated in Fig. 3 and Table 7. Hypothesis 1-4 evaluates whether GHRM practices i.e. GRS, GTD, GPA and GCR have any effect on OEP. The results (table-6) revealed that GHRM practice i.e., GRS significantly associated with OEP ($\beta = 0.555$, $t = 3.056$, $p < .01$) which indicates H1 is supported. Likewise, GTD significantly predicts OEP ($\beta = 0.578$, $t = 2.742$, $p < .01$), so H2 is supported. GPA predicts OEP significantly ($\beta = 0.198$, $t = 3.571$, $p < .01$), hence, H3 is accepted and GCR is also similar to GRS, GTD & GPA ($\beta = 0.194$, $t = 2.69$, $p < .01$), so H4 is supported. Table-7 shows the 95 percent confidence intervals produced by bootstrapping of 5,000 resample in this analysis. A confidence interval that is not zero implies a meaningful relationship. Table-7 summarizes the hypothesis testing results.

Table-7: Hypothesis test

	Std Beta(β)	Standard Deviation	T Statistics	P Values	2.5%	97.5%	Decision
H1-GRS -> OEP	0.555	0.182	3.056	0.002*	0.189	0.908	Supported
H2- GTD -> OEP	0.578	0.211	2.742	0.006*	0.170	0.980	Supported
H3-GPA -> OEP	0.198	0.055	3.571	0.000*	0.089	0.305	Supported
H4- GCR -> OEP	0.194	0.072	2.690	0.007*	0.058	0.341	Supported
H5a- GCR -> GEE -> OEP	0.043	0.018	2.436	0.015*	0.013	0.083	Supported
H5b- GPA -> GEE -> OEP	0.037	0.016	2.258	0.024*	0.009	0.077	Supported
H5c- GRS -> GEE -> OEP	0.255	0.089	2.854	0.004*	0.454	0.101	Supported
H5d- GTD -> GEE -> OEP	0.622	0.188	3.309	0.001*	1.022	0.253	Supported

Note: A 95% confidence interval with a bootstrapping of 5,000 was used. * Significant at $p < 0.05$

The mediation analysis was conducted to evaluate the mediation role of GEE on the relationship of GHRM practices and OEP based on Preacher & Hayes (2008) method of bootstrapping the indirect effect. The result shows (Table-7) that GEE has significantly mediated the relationship of GHRM practices with OEP. H5a i.e. GRS → GEE → OEP with $\beta = 0.043$, $T = 2.436$; H5b i.e. GTD → GEE → OEP with $\beta = 0.622$, $t = 3.309$; H5c i.e. GPA → GEE → OEP with $\beta = 0.037$, $t = 2.258$ and H5d i.e. GCR → GEE → OEP with $\beta = 0.043$, $t = 2.436$ indicate significant indirect effects on OEP and there are mediation. Thus, it is concluded that the mediation effect of green employee empowerment (GEE) is statistically significant between GHRM practices and OEP, indicating that H5a, H5b, H5c & H5d all are also supported.

4.0 Discussion

The aim of this study is to determine and test the impact of manufacturing industries' GHRM practices on environmental performance. This study was conducted to see how effective the GHRM practices were in increasing employee contribution to environmental performance. It demonstrates the importance of human resource management strategies in incorporating environmental sustainability. The findings showed that GHRM practices were applied across industries, which is consistent with findings from other studies (Masri and Jaroon 2017).

In hypothesis H1, it is found a strong positive association between green recruitment & selection (GRS) and organizations' environmental performance (OEP) ($t = 3.056$, $p < .01$) which corresponds with results from previous research studies (Yusoff et al., 2018; Masri and Jaaron, 2017). The explanation for the significant effect is that the managers of the manufacturing industry perhaps make it a strategic priority to hire green employees who are committed to playing a significant role in environment (Tang et al., 2018), with a focus on integrating green into strategic goals. The motivation for environmental protection can come from individuals, which shows people's attitudes and beliefs in environmental protection (Lülfes and Hahn, 2013). Hence GRS contributes positively to EP.

Under the H2 hypothesis, it is revealed that there is a significant positive association between 'Green training and development' and 'organization's environmental performance' ($t = 2.742$, $p < .01$). The result implies that green training can boost the environmental performance. Therefore, companies need to provide informal education initiatives with workers to cultivate and facilitate environmentally responsible behavior. According to Teixeira et al. (2012), "Green training is one of the most important tools for developing human resources and facilitating the transition to a more sustainable society." In order for the company's corporate environmental management plan to operate normally, appropriate environmental training must be conducted to develop the skills and knowledge of employees. The findings of this study are in line with those of Pinzone et al. (2016).

In the H3 hypothesis, 'Green Performance Management and Appraisal (GPA)' has positive and significant impact on 'Organization's Environmental Performances' ($t = 3.571$, $p < .01$). This indicates that if company applies GPA system, more environmental performance can be expected from the employees. GPA allows individual expectations and objectives to be adjusted to corporate targets. Human resources managers identify EM priorities through the use of green employment as key indicators of job performance; follow up the EM activities; and monitor environmental targets; incorporate EP into PMS; and thereby avoid harm to EM (Sharmin, 2015). The finding is supported with previous study of Masri and Jaaron, (2017).

Under the H4 hypothesis, it is revealed that there is a significant positive association between Green Compensation and Reward and organization's environmental performances ($t = 2.69$, $p < .01$) which is in line with previous study results (Ahmed and Sabbir, 2017). The rationale for the strong effect is that "reward and compensation" is one of the best practices for increasing employee participation and environmental consciousness. Rewards may be helpful to apply GHRM as suggested by literature (Govindarajulu and Daily, 2004; Jackson et al., 2011). Among the different factors that impact environmental performance, Zou et al., (2015) discovered that compensation has been deemed important to environmental management (Berrone and Gomez-Mejia, 2009).

Under the H5 hypothesis, where GEE mediates the relation between GHRM practices and OEP (i.e. H5a with $t=2.436$; H5b with $t= 3.309$; H5c with $t=2.258$ and H5d with $- t=2.436$), which is in line with previous study results (Hameed et al. 2019). The positive impact is because workers feel obligated and try to reciprocate in green practices while perceiving their organization's empowerment in environmental concerns. Environmental activities thus allow worker to enhance their capabilities if encouraged (Paille et al., 2014). This research adds to an emerging area's knowledge stock, arguing that GHRM practices have an indirect impact on OEP by GEE, which has not yet been evaluated in empirical studies. In addition, our study introduces GEE as a process to the literature to investigate the fundamental function of GHRM and OEP, as previous research has indicated (Hameed et al. 2019).

5.0 Conclusion and implications

This research was conducted to excavate the knowledge about the association between GHRMP and organizational environmental performance. This empirical study has provided several theoretical and practical

implications by revealing the association between GHRM practices and 'organization's environmental performance' directly and through 'green employee empowerment'.

5.1 Theoretical contribution

Firstly, this study adds to the body of knowledge on the conceptualization of Green HRM practices through the lens of AMO theory, develops a conceptual framework, and addresses how green HRM can be related to environmental performance. Secondly, this research has theoretically contributed to the green HRM/HRM literature by discovering the relationship between various green practices and their results related to EP in manufacturing. Thirdly, the contradiction among researchers on the impact of GHRMP on OEP in the literature has been eliminated, and the connection between GHRM practice and EP is tightened. Fourthly, this paper adds to the literature by incorporating GEE to explore the indirect effect of GHRM on OEP.

5.2 Empirical contribution

Firstly, the nature, direction, and relationship of GHRM practices in manufacturing organizations, as well as their effects on EP were investigated empirically in this research. There are very few studies in HRM literature that deal with the effect of GHRM practices on manufacturing industries of developing countries. Secondly, this study highlights the importance of GHRM practices in different types of manufacturing industries. This study's method of analyzing relationships between each construct using partial least squares path modeling statistical technique could be more beneficial and practical than previous methods. The outcomes of this study enrich knowledge and empirical information on GHRM practices and OEP within manufacturing industries. Thirdly, this research adds to an emerging area's knowledge stock by arguing that GHRM practices indirectly influence the OEP through GEE, which is still not tested by empirical studies and based on the results of this study, top management and managers would be more likely to empower workers to adopt corporate environmental decisions and initiatives.

5.3 Managerial implications

Firstly, this study contributes to a deeper understanding of how the GHRM practices can be implemented. This study indicates that organizations should make full use of GHRM practices as a way to develop their workers' green environmental management capabilities. Secondly, as this study discover the importance of GHRM practices; it would assist managers in bettering their business strategies by emphasizing green activities that have an effect on the sustainability pillars. Thirdly, this paper also provides evidence for managers to raise staff understanding of the positive impact of green practices on the environmental performance of their companies. Finally, it becomes obvious from the findings of this study that top management should include a roadmap by formalizing the EMS and communicating the role of employee motivation in environmental improvement.

5.4 Study limitation and direction for future research

This study is used to test the selected number of important factors. But all important and relevant factors and scope of GHRM practice in the manufacturing sector may not be included in the conceptual model or may not be included in the research questionnaire. For future research, more possible factors should be incorporated to expand the research model. Again, this empirical research applied the cross-sectional method to collect data; longitudinal research could be tested to explain the complex relationship over a long period of time in future. Moreover, this study, for the first time, used GEE as mediating variable between Green HRM practices and environmental performance. More empirical research can be conducted to support this study. Finally, in order to validate and generalize the results of this study to wider audiences and situations; this research strategy need to be examined to other developing countries having a huge number of manufacturing industries and are committed to uphold environmental condition.

References

- Ahmad, S. (2015). 'Green Human Resource Management: Policies and practices', *Cogent Business and Management*. Edited by T. Nisar, 2(1).
- Alhadid, A. Y., & A. H. Abu-Rumman, (2014). The impact of green innovation on organizational performance, environmental management behavior as a moderate variable: an analytical study on nuqul group in Jordan. *International Journal of Business and Management*, 9(7), 51–58. <https://doi.org/10.5539/ijbm.v9n7p51>
- Anseel, F, Lievens, F, Schollaert, E & Choragwicka, B (2010). 'Response rate in organizational science, 1995-2008: A meta-analytic review and guidelines for survey researchers', *Journal of Business and Psychology*, vol.25, no.3, pp.335-349.
- Appelbaum, E; Bailey, T; Berg P; Kalleberg A. L., (2000). Manufacturing Advantage: Why High-Performance Work Systems Pay off. *The Academy of Management Review*, 26(3), 459.

- Arulrajah, A. A. and Opatha, H. H. D. N. P. (2016). 'Analytical and Theoretical Perspectives on Green Human Resource Management: A Simplified Underpinning', *International Business Research*, 9(12), p. 153.
- Arulrajah, A. A., Opatha, H. H. D. N. P. and Nawaratne, N. N. J. (2015). 'Green human resource management practices: a review', *Sri Lankan Journal of Human Resource Management*, 5(1), p. 1.
- Barney (1991). Firm resource and sustained competitive advantage, *Journal of management*, Vol. 17, No. 1, 99-120
- Berrone, P. and Gomez-Mejia, L. R. (2009). 'Environmental Performance and Executive Compensation: An Integrated Agency-Institutional Perspective', *Academy of Management Journal*, 52(1), pp. 103-126.
- BORAL REVIEW (2018). accessed at 11/06/2020; https://www.boral.com/sites/corporate/files/media/field_document/Boral-Annual-Review-2018_0.pdf
- Boxall, P. and Steeneveld, M. (1999). 'Human Resource Strategy and Competitive Advantage: A Longitudinal Study of Engineering Consultancies', *Journal of Management Studies*, 36(4), pp. 443-463.
- Buysse, K. and Verbeke, A., (2003). Pro-active environmental strategies: a stakeholder management perspective. *Strat. Manage. J.*, 2003, 24(5), 453-470.
- Cherian, J. P., & Jacob, J. (2012). A Study of Green HR practices and its effective implementation in the organization: a review. *International Journal of Business and Management*, 7(21), 1-15. <https://doi.org/10.5539/ijbm.v7n21p25>.
- Chin, W. W. (1998). 'The partial least squares approach to structural equation modeling', *Modern methods for business research*, Vol. 295 No. 2, pp 295-336.
- Cole, M. A., Elliott, R. J., & Strobl, E. (2008). 'The environmental performance of firms: The role of foreign ownership, training, and experience'. *Ecological Economics*, 65(3), 538-546.
- Daily, B. F. and Huang, S. (2001). 'Achieving sustainability through attention to human resource factors in environmental management', *International Journal of Operations and Production Management*, 21(12), pp. 1539-1552.
- Daily, B. F., Bishop, J. W. and Massoud, J. A. (2012). 'The role of training and empowerment in environmental performance: A study of the Mexican maquiladora industry', *International Journal of Operations and Production Management*, 32(5), pp. 631-647.
- Daily, B.F., Bishop, J.W. and Steiner, R. (2007). "The mediating role of EMS teamwork as it pertains to HR factors and perceived environmental performance", *Journal of Applied Business Research*, Vol. 23 No. 1, pp. 95-109.
- Dumont, J., Shen, J. and Deng, X. (2016). 'Effects of green HRM practices on employee workplace green behavior: the role of psychological green climate and employee green values', *Human Resource Management*, Vol. 56 No. 4, pp. 613-627.
- European Environment Agency (2014). 'European Environment Agency, (2014) Horizon 2020 Mediterranean report.' Toward shared environmental information systems.
- Fernández, E., Junquera, B. and Ordiz, M. (2003). 'Organizational culture and human resources in the environmental issue: a review of the literature', *The International Journal of Human Resource Management*, 14(4), pp. 634-656.
- Fornell & Larcker 1981 Fornell, C & Larcker, D (1981). 'Evaluating structural equation models with unobservable variables and measurement error', *Journal of Marketing Research*, vol.18, no.1, pp.39-50.
- Ghaffari, S., Shah, I., Burgoyne, J., Mohd Nor, M., & Salleh, J. (2017). 'The influence of motivation on job performance: A case study at Universiti Teknologi Malaysia'. *Australian Journal of Basic and Applied Sciences* 11(4):92-99
- Gholami, H., Rezaei, G., Saman, M. Z. M., Sharif, S. and Zakuan, N. (2016). 'State-of-the-art Green HRM System: sustainability in the sports center in Malaysia using a multi-methods approach and opportunities for future research', *Journal of Cleaner Production*, 124, pp. 142-163.
- Govindarajulu, N. and Daily, B. F. (2004). 'Motivating employees for environmental improvement', *Industrial Management and Data Systems*, 104(4), pp. 364-372.
- Guerci, M., Longoni, A. and Luzzini, D. (2016). 'Translating stakeholder pressures into environmental performance - the mediating role of green HRM practices', *The International Journal of Human Resource Management*, 27(2), pp. 262-289.
- Haddock-Millar, J., Sanyal, C. and Müller-Camen, M. (2016). 'Green human resource management: a comparative qualitative case study of a United States multinational corporation', *The International Journal of Human Resource Management*, 27(2), pp. 192-211.
- Hair, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2016). 'A primer on partial least squares structural equation modeling (PLS-SEM)'. Thousand Oaks, CA: SAGE Publications
- Hameed, Z., Khan, I., Islam, T., Sheikh, Z. and Naeem, R. (2020). "Do green HRM practices influence employees' environmental performance?", *International Journal of Manpower*, Vol. ahead-ofprint No. ahead-of-print.
- Harvey, D. M., Bosco, S. M., & Emanuele, G. (2010). 'The impact of 'green-collar workers' on organizations', *Management Research Review*, 33(5), 499-511.

- Henriques, I. and Sadorsky, P., (1999). The relationship between environmental commitment and managerial perceptions of stakeholder importance. *Acad. Manage. J.*, 42(1), 87–99.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2016). Testing measurement invariance of composites using partial least squares. *International Marketing Review*, 33, 405–431.
- IPCC (Intergovernmental Panel On Climate Change) (2014), accessed on 09/06/2020; https://www.ipcc.ch/site/assets/uploads/2018/03/WGIIIAR5_SPM_TS_Volume-3.pdf.
- Ishtiaq Ahmed and Sadia Shabbir (2017). The Effects of Rewards on Employee's Performance in Banks: A Study of Three Districts (Lodhran, Vehari, Khanewal) Commercial Banks in Pakistan.
- Jabbour, C. J. C. and de Sousa Jabbour, A. B. L. (2016). 'Green Human Resource Management and Green Supply Chain Management: linking two emerging agendas', *Journal of Cleaner Production*, 112, pp. 1824–1833.
- Jabbour, C. J. C. and Santos, F. C. A. (2008). 'The central role of human resource management in the search for sustainable organizations', *The International Journal of Human Resource Management*, 19(12), pp. 2133–2154.
- Jabbour, C. J. C., Santos, F. C. A. and Nagano, M. S. (2010). 'Contributions of HRM throughout the stages of environmental management: methodological triangulation applied to companies in Brazil', *The International Journal of Human Resource Management*, 21(7), pp. 1049–1089.
- Jackson, S. E., Renwick, D. W. S., Jabbour, C. J. C. and Muller-Camen, M. (2011). 'State-of-the-Art and Future Directions for Green Human Resource Management: Introduction to the Special Issue', *German Journal of Human Resource Management: Zeitschrift für Personalforschung*, 25(2), pp. 99–116.
- Jackson, S. E., Schuler, R. S. and Jiang, K. (2014). 'An Aspirational Framework for Strategic Human Resource Management', *Academy of Management Annals*, 8(1), pp. 1–56.
- Jalal Hanaysha (2016). Examining the Effects of Employee Empowerment, Teamwork, and Employee Training on Organizational Commitment, *Procedia - Social and Behavioral Sciences* 229 (2016) 298 – 306
- Janaka Siyambalapatiya, Xu Zhang, Xiaobing Liu, (2018). Green Human Resource Management: A Proposed Model in the Context of Sri Lanka's Tourism Industry, *Journal of Cleaner Production*, doi: 10.1016/j.jclepro.2018.07.305
- Jaramillo, J. Á., Sossa, J. W. Z., and Mendoza, G. L. O. (2018). Barriers to sustainability for small and medium enterprises in the framework of sustainable development—Literature review. *Business Strategy and the Environment*. 0(0).
- Jiang, K., Lepak, D.P., Hu, J. and Baer, J.C. (2012). "How does human resource management influence organizational outcomes? A meta-analytic investigation of mediating mechanisms", *Academy of Management Journal*, Vol. 55, pp. 1264-1294.
- Jovane, F., Yoshikawa, H., Alting, L., Boër, C. R., Westkämper, E., Williams, D., Paci, A. M. (2008). The incoming global technological and industrial revolution towards competitive sustainable manufacturing. *CIRP Annals Manufacturing Technology*, 57(2), 641-659.
- Kim, Y. J., Kim, W. G., Choi, H.-M. and Phetvaroon, K. (2019). 'The effect of green human resource management on hotel employees' eco-friendly behavior and environmental performance', *International Journal of Hospitality Management*, 76, pp. 83–93.
- Laschinger, H. K. S., Finegan, J., & Shamian, J. (2002). The impact of workplace empowerment, organizational trust on staff nurses' work satisfaction and organizational commitment. *Advances in Health Care Management*, (3), 59-85.
- Lee, K. (2009). 'Why and how to adopt green management into business organizations?: The case study of Korean SMEs in manufacturing industry', *Management Decision*. Edited by R. Dwyer, 47(7), pp. 1101–1121.
- Lülf, R. and Hahn, R. (2013). Corporate greening beyond formal programs, initiatives, and systems: a conceptual model for voluntary pro-environmental behavior of employees, *European Management Review*, Vol. 10 No. 2, pp. 83-98.
- Macke, J., & Genari, D. (2018). Systematic literature review on sustainable human resource management. *Journal of Cleaner Production*, 208(January), 806–15. <https://doi.org/10.1016/j.jclepro.2018.10.091>
- Marcus and Fremeth (2009). Green Management Matters Regardless. *Academy of Management Perspectives*, 23(3), 17–26.
- Marin-Garcia, J. A. and Martinez Tomas, J. (2016). 'Deconstructing AMO framework: a systematic review', *Intangible Capital*, 12(4), p. 1040.
- Masri, H. A. and Jaaron, A. A. M. (2017). 'Assessing green human resources management practices in Palestinian manufacturing context: An empirical study', *Journal of Cleaner Production*, 143, pp. 474–489.
- Men, L. R. (2010). Measuring the impact of leadership style and employee empowerment on perceived organizational reputation. Retrieved on 02 Jan, 2021 from: <http://www.instituteforpr.org/wp-content/uploads/KEPRRA-the-Impact-of-Leadership-Style-and-EmployeeEmpowerment-on-Perceived-Organizational-Reputation.pdf>

- Mousa, S. K. and Othman, M. (2020). 'The impact of green human resource management practices on sustainable performance in healthcare organisations: A conceptual framework', *Journal of Cleaner Production*, 243, p. 118595.
- Muogbo, U. (2013). The impact of employee motivation on organisational performance (A study of some selected firms in Anambra state Nigeria), *The International Journal of Engineering and Science*, Vol. 2, pp. 70-80
- Nijhawan, G. (2014). 'Green Hrm-A Requirement For Sustainable Organization', *Indian Journal of Research*, 3(10), 69-70
- Norton, T. A., Parker, S. L., Zacher, H. and Ashkanasy, N. M. (2015). 'Employee Green Behavior: A Theoretical Framework, Multilevel Review, and Future Research Agenda', *Organization and Environment*, 28(1), pp. 103-125.
- O'brien, R.M., 2007. A caution regarding rules of thumb for variance inflation factors. *Qual. Quan.* 41 (5), 673-690. <http://dx.doi.org/10.1007/s11135-006-9018-6>.
- O'Donohue, W. and Torugsa, N. (Ann) (2016). 'The moderating effect of "Green" HRM on the association between proactive environmental management and financial performance in small firms', *The International Journal of Human Resource Management*, 27(2), pp. 239-261.
- Opatha, H. H. D. N. P. and Arulrajah, A. A. (2014). 'Green Human Resource Management: Simplified General Reflections', *International Business Research*, 7(8), p. p101.
- Paillé, P., Chen, Y., Boiral, O., & Jin, J. (2014). The impact of human resource management on environmental performance: An employee level study. *Journal of Business Ethics*, 121(3), 451-466.
- Paillé, P., Valéau, P. and Renwick, D. W. (2020). 'Leveraging green human resource practices to achieve environmental sustainability', *Journal of Cleaner Production*, 260, p. 121137.
- Pellegrini, C., Rizzi, F., and Frey, M. (2018). The role of sustainable human resource practices in influencing employee behavior for corporate sustainability. *Business Strategy and the Environment*, 0(0), 27, 1221-1232.
- Pham, N. T., Vo Thanh, T., Tučková, Z. and Thuy, V. T. N. (2019). 'The role of green human resource management in driving hotel's environmental performance: Interaction and mediation analysis', *International Journal of Hospitality Management*, p. 102392.
- Pinzone, M., Guerci, M., Lettieri, E. and Redman, T. (2016). 'Progressing in the change journey towards sustainability in healthcare: the role of "Green" HRM', *Journal of Cleaner Production*, 122, pp. 201-211.
- Prasad, R.S., (2013). Green HRM- Partner in Sustainable Competitive Growth. *Journal of Management Sciences and Technology*, 1(1), pp.15-18
- Preacher, K.J., Hayes, A.F., (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behav. Res. Meth.* 40 (3), 879-891.
- Ramus, C. A. (2002). 'Encouraging innovative environmental actions: what companies and managers must do', *Journal of World Business*, 37(2), pp. 151-164.
- Rawashdeh, A. (2018). The Impact of green human resource management on organizational environmental performance in Jordanian health service organizations. *Management Science Letters*, 8(10), 1049-1058. <https://doi.org/10.5267/j.msl.2018.7.006>
- Raza, H., Mahmood, J., Owais, M., & Raza, A. (2015). Impact of employee empowerment on job satisfaction of employees in corporate banking sector employees of Pakistan. *Journal of Applied Environmental and Biological Sciences*, 5(2), 1-7.
- Razab, M. F. A., Udin, Z. M. and Osman, W. N. (2015). Understanding The Role Of Ghrm Towards Environmental Performance, *Journal of Global Business and Social entrepreneurship (GBSE)*, 1(2), 118-125.
- Ren, S., Tang, G. and E. Jackson, S. (2018). 'Green human resource management research in emergence: A review and future directions', *Asia Pacific Journal of Management*, 35(3), pp. 769-803.
- Renwick, D. W. S., Redman, T., & Maguire, S. (2013). Green human resource management: a review and research agenda*: Green human resource management. *International Journal of Management Reviews*, 15(1), 1-14.
- Renwick, D. W. S., Redman, T., and Maguire, S. (2012). Green Human Resource Management: A Review and Research Agenda. *International Journal of Management Reviews*, 15(1), 1-14.
- Renwick, D.W.S., Jabbour, C.J.C., Muller-Camen, M., Redman, T., Wilkinson, A., (2016). Contemporary developments in Green (environmental) HRM scholarship. *The International Journal of Human Resource Management*, 27, 114-128.
- Ringle, C., Wende, S., & Will, A. (2005). SmartPLS 2.0 (Beta). Hamburg, (www.smartpls.de).
- Rizwan Q.D and Ali U. (2010). Impact of reward and recognition on job satisfaction and motivation. An empirical study from Pakistan. *International journal of business and management*. Available online at www.ccsenet.org/ijbm.
- Rodríguez-Antón, J. M., del Mar Alonso-Almeida, M., Celemín, M. S., & Rubio, L. (2012). Use of different sustainability management systems in the hospitality industry- the case of Spanish hotels, *Journal of Cleaner Production*, 22(1), 76-84.

- Roscoe, S., Subramanian, N., Jabbour, C. J. C. and Chong, T. (2019). 'Green human resource management and the enablers of green organisational culture: Enhancing a firm's environmental performance for sustainable development', *Business Strategy and the Environment*, 28(5), pp. 737–749.
- Sammalisto, K. and Brorson, T. (2008). 'Training and communication in the implementation of environmental management systems (ISO 14001): a case study at the University of Gävle, Sweden', *Journal of Cleaner Production*, 16(3), pp. 299–309.
- Sana Arz Bhutto & Aurazeb, (2016). Effects of green human resources management on firm performance: an empirical study on Pakistani firms. *European Journal of Business and Management*. 8, 119-125.
- Sarkis, J., Gonzalez-Torre, P. and Adenso-Diaz, B. (2010). 'Stakeholder pressure and the adoption of environmental practices, the mediating effect of training', *Journal of Operations Management*, Vol. 28, pp.163–176
- Sekaran, U. (2003). *Research Methods for Business: A Skill-Building Approach*. 4th Edition, John Wiley & Sons, New York.
- Sharmin, S., (2015). *Green HRM: An Innovative Approach to Environmental Sustainability*. AIMS International.
- Shen, J., Dumont, J., & Deng, X. (2018). Employees' perceptions of green HRM and non-green employee work outcomes: the social identity and stakeholder perspectives. *Group & Organization Management*, 43(4), 594–622.
- Tabachnick, BG & Fidell, LS (eds) (2001). *Using Multivariate Statistics*, Allyn & Bacon, Needham Heights.
- Takeuchi, R., Lepak, D.P., Wang, H., Takeuchi, K., (2007). An empirical examination of the mechanisms mediating between high-performance work systems and the performance of Japanese organizations. *J. Appl. Psychol.* 92 (4), 1069–1083.
- Tang, G., Chen, Y., Jiang, Y., Paillé, P. and Jia, J. (2018). 'Green human resource management practices: scale development and validity', *Asia Pacific Journal of Human Resources*, 56(1), pp. 31–55.
- Tariq, S., Jan, F.A. and Ahmad, M.S. (2016). "Green employee empowerment: a systematic literature review on state-of-art in green human resource management", *Quality and Quantity*, Vol. 50, pp. 237-269.
- Teixeira, A. A., Jabbour, C. J. C. and Jabbour, A. B. L. de S. (2012). 'Relationship between green management and environmental training in companies located in Brazil: A theoretical framework and case studies', *International Journal of Production Economics*, 140(1), pp. 318–329.
- The EEA's Environmental indicator report (2012). *Ecosystem resilience and resource efficiency in a green economy in Europe*. Accessed on 06/06/2020; <https://www.eea.europa.eu/publications/environmental-indicator-report-2012>.
- Ullah, M., & Jahan, S. (2017). "The Green Roles of HR Professionals: Green Human Resource Management Perspective." *The Cost and Management*, 45(2): 33-41.
- Wehrmeyer, W., (1996). 'Greening People: Human Resources and Environmental Management'. Routledge.
- Willerdig, I. A. V., Silveira, A. C. M., Berchin, I. I., Lapolli, E. M., and Guerra, J. B. S. O. A. (2016). Strategic management for sustainable development and the organizational aesthetic perspective. *Revista Eletrônica de Estratégia and Negócios*, 9(2), 134-166.
- Wong, C. W. Y., Wong, C. Y., and Boon-itt, S. (2018). How does sustainable development of supply chains make firms lean, green and profitable? A resource orchestration perspective. *Business Strategy and the Environment*, 27(3), 375–388.
- Wu, K.-J., Tseng, M. L., Lim, M. K., & Chiu, A. S. F. (2019). Causal sustainable resource management model using a hierarchical structure and linguistic preferences. *Journal of Cleaner Production*, 229 (August), 640–651. <https://doi.org/10.1016/j.jclepro.2019.04.394>
- Yu, W., Chavez, R., Feng, M., Wong, C. Y. and Fynes, B. (2020). 'Green human resource management and environmental cooperation: An ability-motivation-opportunity and contingency perspective', *International Journal of Production Economics*, 219, pp. 224–235.
- Yusoff, Y. M., Nejati, M., Kee, D. M. H. and Amran, A. (2018). 'Linking Green Human Resource Management Practices to Environmental Performance in Hotel Industry', *Global Business Review*, p. 097215091877929.
- Zibarras, L. D. and Coan, P. (2015). 'HRM practices used to promote pro-environmental behavior: a UK survey', *The International Journal of Human Resource Management*, 26(16), pp. 2121–2142.
- Zou, H., Zeng, S., Lin, H., Xie, X., (2015). Top executives' compensation, industrial competition, and corporate environmental performance: evidence from China.