Impact of Green HRM Practices on Firm Performance & Related Outcome Variables

Paul Pratap Alukal & Shreekumar K. Nair

With greater emphasis being placed on environmental sustainability over the past few years, the concept of green human resource management (GHRM) and its implementation in organizations have received a great deal of interest from both academia and practitioners. This paper focuses on the impact of implementation of GHRM practices on a few internal (firm, environmental performance, firm financial performance and organizational citizenship behavior for the environment (OCBE)) and external (social sustainability) outcome variables in organizations from the services sector located in the Mumbai region. This paper focuses on exploring the role that green HRM practices play in shaping the actors and factors both inside and outside the company.

Paul Pratap Alukal is a Fellow Scholar (OB & HR) at the Indian Institute of Management, Mumbai. He is also working as an Assistant Professor at St. Francis Institute of Management & Research. E-mail : Paul.Alukal.2018@iimmumbai.ac.in. ***Shreekumar K. Nair*** is a Professor at the Indian Institute of Management, Mumbai. E-mail: shreekumar@iimmumbai.ac.in

Introduction

The rapid industrial growth in recent centuries has improved global living standards, but it has also led to significant environmental issues (Daily & Huang, 2001). Historically, businesses have prioritized profits over environmental concerns, resulting in resource constraints and environmental crises. However, a shift is occurring towards integrating social and environmental responsibilities alongside financial goals, as highlighted by the triple bottom line (TBL) concept, which evaluates companies based on people, planet, and profits.

Sustainable development, as defined by the Brundtland Commission, involves meeting current needs without compromising future generations' ability to meet theirs (WCED, 1987). Environmental sustainability ensures businesses can thrive long-term while promoting others' growth (Starik & Rands, 1995). Growing global emphasis on environmental preservation is pushing organizations to prioritize conservation (McGuire & Germain,

2015). By the mid-1980s, many companies began focusing on environmental stewardship, recognizing its potential competitive advantage (Ramus, 2001). This led to the emergence of the "greening" of enterprises, impacting various business areas, including supply chain management and human resources.

Green human resource management (GHRM) has played a vital role in addressing environmental concerns and integrating environmental management practices with HR strategies (Daily & Huang, 2001; Renwick et al., 2008). Research in GHRM gained momentum after Wehrmeyer's 1996 study, which highlighted the importance of green HR initiatives. By 2007, environmental management systems (EMS) were widely adopted, driving the development of green HR practices. A key study in 2008 outlined Green HR efforts, using the Ability-Motivation-Opportunity (AMO) Theory to explore various HR functions (Renwick et al., 2008).

Green HRM's role in corporate sustainability is growing, especially in industrialized nations. However, there is limited empirical research on its application in India. This paper aims to fill this gap by examining GHRM practices in India's services sector, offering insights into their adoption and impact. Previous studies have mapped the factors influencing Green HRM, yet more empirical research is needed to explore its outcomes and drivers (Ren et al., 2018).

Building on this assessment, this paper aims to achieve two primary objectives. Firstly, it seeks to identify significant outcomes of implementing GHRM by drawing upon existing research in the field. Secondly, it aims to investigate the impact of the implementation of GHRM practices on these outcome variables within the context of the services sector in India. Thus, the paper addresses two critical gaps in the literature: the lack of focus on the outcomes of GHRM practices and the need for more empirical research on GHRM in developing economies like India.

Theoretical Framework

GHRM, which integrates environmental management with human resource management, has received increasing academic attention in recent years (Renwick et al., 2008). GHRM is defined in various ways, with one definition emphasizing systems designed to foster environmentally conscious workers to support an organization's environmental goals and sustainability (Kennedy & Toffler, 2014). Another perspective views it as policies, procedures, and strategies embedded in HR practices to support long-term business models (Watson & Kavid, 2014), while a broader definition explores the interaction between organizational actions and HR systems impacting the environment (Ren et al., 2018).

GHRM promotes sustainable resource use and environmental sustainability within organizations by integrating eco-friendly practices into HR processes such as hiring, training, and pay parity (Nijhawan, 2014). It leads to im-

proved organizational performance, reduced costs, higher employee engagement, and positive environmental outcomes (Arulrajah et al., 2015; Mathapati, 2013; Wong et al., 2013). Through initiatives like job sharing, virtual meetings, and recycling, GHRM helps reduce carbon footprints (Mandip, 2012).

The Ability-Motivation-Opportunity (AMO) theory is frequently used in empirical research on HRM practices and organizational performance, suggesting that HR strategies improving human capital lead to positive outcomes such as better product quality, reduced waste, and increased profitability (Boselie et al., 2005; Appelbaum et al., 2000). This theory highlights the importance of enhancing employees' abilities, motivation, and opportunities for organizational success.

Impact of Implementation

Organizational environmental performance involves initiatives that positively impact the environment (Jackson & Seo, 2010). GHRM plays a significant role in enhancing environmental performance (Ren et al., 2018). GHRM practices such as green training, green performance evaluation, and green recruitment have been shown to influence environmental outcomes (Govindarajulu & Daily, 2004; Guerci et al., 2016; Jabbour et al., 2010; Pinzone et al., 2016). Investing in GHRM leads to both direct and indirect effects on environmental performance (Paillé et al., 2013). GHRM helps develop employees' green skills and behaviors, improving a firm's overall environmental performance (Pham et al., 2019a). Consequently, firm environmental performance has been identified as an outcome of interest. Therefore, drawing from previous studies, it is proposed that:

GHRM helps develop employees' green skills and behaviors, improving a firm's overall environmental performance.

Hypothesis 1: GHRM Practices have a positive impact on Firm Environmental Performance

Impact of Implementation on Social Sustainability

Social sustainability focuses on fairness, opportunity, health, education, income inequality, and poverty (Aggerholm et al., 2011). It involves managing the impacts of business operations on society, with companies striving to minimize negative impacts and maximize positive ones. The influence of GHRM practices on sustainability (economic, environmental, and social) was studied in manufacturing (Yong et al., 2019). Amrutha and Geetha (2019) found limited research on Green HRM's contribution to social sustainability, particularly compared to environmental and economic sustainability, and called for more research in this area. Hence, social sustainability has been identified as an outcome of interest. So, it is proposed that:

Hypothesis 2: GHRM Practices have a positive impact on Social Sustainability

Impact of Implementation on Firm Financial Performance

Firm financial performance is the quantitative assessment of a company's profitability and financial health (Nelson, 1959). Implementing green practices like GHRM can improve employee outcomes, positively influencing financial performance (Epstein & Roy, 2001; Turban & Greening, 1997). Haddock-Millar et al. (2016) highlighted the importance of 'greening' in enhancing financial performance, while Longoni et al. (2018) studied GHRM's impact on financial performance in Italy. Thus, drawing from the previous studies it is proposed that:

Hypothesis 3: GHRM Practices have a positive impact on firm financial performance

Impact of Implementation on Organizational Citizenship Behavior for the Environment

Organizational citizenship behavior for the environment (OCBE) refers to discretionary behaviors that contribute to effective environmental management but are not formally rewarded (Boiral, 2009). Pinzone et al. (2016) suggested that supervisors can encourage OCBE through interventions like GHRM practices. Ren et al. (2018) argued that GHRM strategies foster discretionary behaviors benefiting the environment. Pham et al. (2019b) used the AMO Framework to explain how HRM practices influence employees' discretionary efforts. Pinzone et al. (2019) found that 'green' training enhances OCBEs, improving environmental sustainability and boosting employee job satisfaction.Thus, drawing from previous studies, it is proposed that:

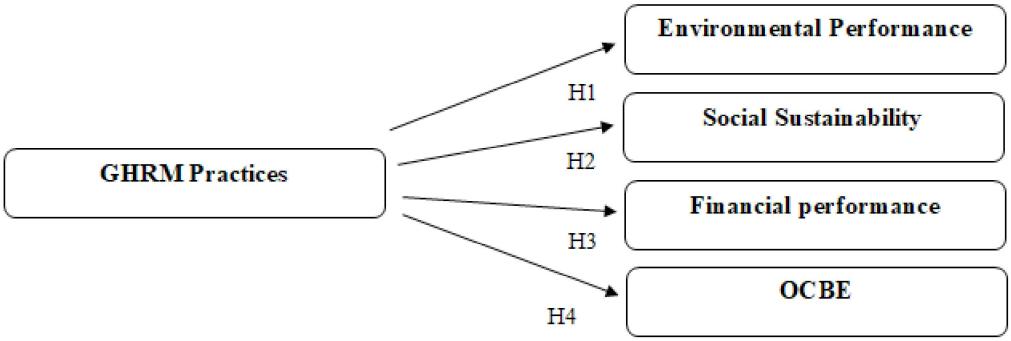
Hypothesis 4: GHRM Practices have a positive impact on OCBE

The conceptual model representing the proposed Hypotheses is given in Fig. 1.

Methodology

This study gathers data from employees in the Indian services sector, focusing on G HRM Practices and other relevant variables. Using a non-experimen-

Fig.1 Proposed Model



Source: Author's workings using MS Word

tal, quantitative approach, the research employs descriptive and explanatory methods, guided by theory to formulate hypotheses (Hair et al., 2003). Explanatory or causal studies aim to validate relationships between variables, focusing on understanding problems or situations to elucidate associations (Saunders et al., 2003). A cross-sectional design is used to collect data at a specific time point via surveys (Creswell, 2009). Judgmental and Snowball Sampling methods were used to gather data from 600 respondents in Mumbai and its suburbs. The study aims to explore the relationship between GHRM Practices and their outcomes.

Data Collection

In 2023, data was collected from 30 companies across three industries in India's services sector, with 10 companies per industry. Table 1 lists these companies. Companies were selected based on their familiarity with GHRM. Two questionnaires were distributed via an online platform to capture all model variables. Each company provided 20 responses, using standard scales and self-report methods. Specifics of these measures are detailed in the following section. The questionnaires were completed and submitted electronically by the selected respondents. Two separate surveys were administered: Survey 1 targeted employees across the 30 companies, focusing on measuring GHRM Practices. Subsequently, Survey 2 was circulated to the same 20 employees within each company after a small time lag, assessing the four outcome variables.

Table 1 Names of Companies – Data Collection

Information Technology	Banking	Hospitality
Accenture	Axis Bank	Accor
Capgemini	Bassein Catholic Co-operative Bank	Four Seasons
Cognizant	Citibank	Hyatt
HCL	Federal Bank	ITC
IBM	HDFC	Leela
Infosys	HSBC	Marriott
LTI	ICICI	Oberoi
TCS	JP Morgan	Ramada
Tech Mahindra	Kotak Mahindra	Taj
Virtusa	Standard Chartered	Trident

Source: Author's workings using MS Excel

The study received 600 responses from employees across 30 companies. Of these, 263 were females (43.83%) and 336 were males (56%), with one respondent not disclosing the gender. The majority of respondents (361) were aged 21-30, followed by 31-40 years (197), 41-50 years (25), 51-60 years (16), and over 60 years (1). Details are provided in Table 2 and Table 3. To mitigate common method bias, we implemented controls within the survey design (Podsakoff et

al., 2003). Concerning the survey design, the two questionnaires were administered independently with a time-lapse, ensuring respondents' attention was not directed toward the specific relationships under investigation in this study.

Table 2 Sample Details – Gender

		Industry			
		Information Technology	Banking	Hospitality	Overall Sample
Gender	**Male**	110	107	119	336
	Female	90	93	80	263
	Prefer not to say	0	0	1	1
Total count		200	200	200	600

Source: Author's workings using MS Excel

Table 3 – Sample Details – Age

		Industry			
		Information Technology	Banking	Hospitality	Overall Sample
Age Category	**21-30**	127	116	118	361
	31-40	66	53	78	197
	41-50	4	18	3	25
	51-60	3	13	0	16
	Above 60	0	0	1	1
Total count		200	200	200	600

Source: Author's workings using MS Excel

Measures

The scales used to measure the different variables are provided in this section. All the scales are shown to have adequate validity and reliability.

GHRM Practices: Various measures or scales have been proposed for measuring GHRM by breaking it into its constituent functions such as green recruitment and selection, green training and development, etc. (Alukal et al., 2022). GHRM practices were measured using the 28-item scale developed by (Shah, 2019). Response was measured on a 5-point Likert scale wherein responses range from 1 (strongly disagree) to 5 (strongly agree). The seven dimensions of the scale (Green Recruitment and Selection, Green Job Design, Green Compensation Management, Green Labor Relations, Green Health and Safety, Green Training and Development and Green Performance Management) are seen as components of GHRM practices. Scale demonstrates adequate internal reliability with $\alpha > .70$.

Environmental Performance: Environmental performance was measured using the six-item scale adapted by Rawashdeh (2018). It is measured on a 5-point Likert scale wherein responses range from 1 (strongly disagree) to 5 (strongly agree). Scale dem-

onstrates adequate internal reliability with $\alpha > .70$.

Social Sustainability: Social sustainability was measured using the five-item scale based on the 15-item sustainability scale adapted from Zhu et al. (2008), Laosirihongthong et al. (2013) and Paulraj (2011). It is measured on a 7-point Likert scale wherein responses range from 1 (not at all) to 7 (to a very great extent). The scale demonstrates adequate internal reliability and validity.

Financial Performance: Financial performance was measured by considering multiple financial indicators. The following financial indicators were used - return on investments; earnings growth; sales growth; and market share growth. Each financial indicator was measured as the value indicated by the respondents compared with their main competitors on a 6-point scale wherein responses range from 1 (much worse) to 6 (much better).

OCBE: OCBE was measured using the ten-item scale developed by Boiral and Paillé (2012). It is measured on a 5-point Likert scale wherein responses range from 1 (strongly disagree) to 5 (strongly agree). Scale demonstrates adequate internal reliability with $\alpha > .70$.

Data Analysis

For testing the proposed model, Structural Equation Modelling (SEM) was employed. For analysis purposes, SPSS (v 25.0) software and AMOS have been used. The tests such as descriptive statistics, reliability test, exploratory factor analysis, confirmatory factor analysis, convergent validity, discriminant validity and structural equation modeling were applied to gather the required information and then the respective interpretations have been added to provide a better understanding of the data.

Descriptive Statistics

Table 4 provides the Descriptive Statistics (Mean, Standard Deviation, Variance, Minimum, Maximum, Skewness & Kurtosis) of the five variables. As the sample size increases, data tends to exhibit a more normal distribution, with complete normality achieved as the sample size further expands (Altman & Bland, 1995; Krithikadatta, 2014). Data is deemed normal if skewness falls within the range of -2 to +2 and kurtosis between -7 to +7 (Byrne 2010; Hair et al., 2010). The values presented in the table adhere to these specified limits. Consequently, the data is deemed normal, facilitating subsequent analysis.

Reliability Analysis

The generally accepted convention is that if Cronbach's alpha value $\alpha > 0.7$, it is accepted as a mark that the scale has good reliability. As can be seen from Table 5, Cronbach's alpha value α was in the range from 0.911 to 0.932 for the five scales, which represents very good reliability.

Exploratory Factor Analysis (EFA)

Exploratory Factor Analysis (EFA) reduces multiple observed variables into

Table 4 Descriptive Statistics

Variable	N	Min	Max	Mean	Std. Dev.	Variance	Skewness	Kurtosis
GHRM	600	3.04	5	4.12	.333	.111	-.407	1.463
EP	600	3.5	5	4.20	.337	.113	.032	.086
S S	600	4.6	7	5.96	.45	.203	-.586	.654
FP	600	4.25	6	5.05	.373	.139	-.285	-.15
OCBE	600	1	5	3.94	.595	.354	-1.574	4.503

Source: Author's workings using SPSS
Note: GHRM – Green Human Resource Management Practices, EP – Environmental Performance, SS – Social Sustainability, FP – Financial Performance, OCBE - Organizational Citizenship Behaviour for the Environment.

Table 5 Summary – Reliability Analysis

Variable	Cronbach's Alpha
GHRM Practices	.925
Environmental Performance	.922
Social Sustainability	.932
Financial Performance	.911
OCBE	.917

Source: Author's workings using SPSS

fewer, unobserved factors, enhancing interpretability and revealing latent structures (Treiblmaier & Filzmoser, 2010). Its goal is to identify latent variables explaining observed variances and covariances (Preacher & MacCallum, 2002). Two measures assess data suitability: the Kaiser Meyer Olkin (KMO) Measure, which indicates good suitability with values above 0.7 (Kaiser, 1974), and Bartlett's test of sphericity, which tests if variables are unrelated. A p-value below 0.05 in Bartlett's test indicates sufficient conditions for factor analysis (Hair et al., 2006). We have used the Principal Component Analysis (PCA) method for extraction and Varimax Rotation. The results showed that the KMO value was > 0.7 and Bartlett's test of sphericity p value < .005 in all the cases, thus indicating that the correlation structure is adequate for factor analysis. In the case of all the five variables, only one factor was extracted and there was no cross-loading.

Confirmatory Factor Analysis (CFA)

Confirmatory Factor Analysis (CFA) is a statistical method utilized to validate the factor structure of a given set of observed variables. It enables researchers to assess the hypothesis that a relationship exists between the observed variables and their underlying latent constructs (Suhr, 2006). CFA serves as a tool to conduct confirmatory tests of measurement theories. The important Model Fit Values that are considered for CFA are the Chi-Square / Degrees of Freedom (CMIN/DF), Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA). Hu and Bentler (1999) suggested the following Threshold values for the Fit Indices as provided in Table 6.

In cases where certain values fail to meet the threshold criteria specified earlier, alternative thresholds can still indi-

Table 6 Threshold Values for Fit Indices - CFA

Measure	Threshold
CMIN/DF	< 3: Good, < 5: Sometimes permissible
CFI	> 0.95: Great, > 0.90: Traditional, > 0.80: Sometimes permissible
GFI	> 0.95
AGFI	> 0.80
SRMR	< 0.09
RMSEA	< 0.05: Good, 0.05-0.10: Moderate, > 0.10: Bad

Source: (Hu & Bentler, 1999)

cate a moderate fit. For instance, values such as AGFI > 0.63, GFI > 0.75, and CFI > 0.88 are deemed sufficient (Shah & Goldstein, 2006). In the present study, we carried out a variable-wise Confirmatory Factor Analysis (CFA) of the model variables.

CFA was carried out for the variables in the model (GHRM practices and outcomes) and also for the measurement model. Table 7 summarizes the CFA Fit indices of the five variables and the measurement model.

Table 7 Summary – CFA Fit Indices

Variable	CMIN/DF	GFI	AGFI	CFI	RMSEA
GHRM Practices	2.220	0.918	0.902	0.921	0.045
Environmental Performance	2.602	0.993	0.970	0.969	0.052
Social Sustainability	2.591	0.997	0.974	0.993	0.052
Financial Performance	1.848	0.998	0.985	0.997	0.038
OCBE	1.696	0.984	0.968	0.994	0.034
Measurement Model	1.611	0.786	0.774	0.881	0.032

Source: Author's workings using Amos

From the values of the fit indices mentioned in Table 7, it can be concluded that there is good model fit for all the cases.

Validity Analysis

The validity of a scale refers to its ability to accurately measure the intended constructs. Convergent Validity and Discriminant Validity are the two key aspects assessed for scale validation. Composite Reliability (CR), Average Variance Extracted (AVE), and Maximum Shared Variance (MSV) are computed for this purpose. Convergent Validity is established when CR is ≥ 0.7, AVE is ≥ 0.5, and CR is greater than AVE. For Discriminant Validity, AVE should exceed MSV for each construct (Hair et al., 2010). The values indicating Convergent Validity and Discriminant Validity for the variables considered in the study are provided in Table 8.

Structural Equation Modeling (SEM)

Structural Equation Modeling (SEM) draws from regression analyses of observed variables and factor analyses of

Table 8 Convergent Validity& Discriminant Validity

Variable	CR	AVE	MSV	Is CR >AVE	Is AVE >MSV	Convergent Validity	Discriminant Validity
GHRM Practices	**0.966**	**0.506**	**0.021**	**Yes**	**Yes**	**Satisfied**	**Satisfied**
Environmental Performance	**0.853**	**0.539**	**0.408**	**Yes**	**Yes**	**Satisfied**	**Satisfied**
Social Sustainability	**0.824**	**0.540**	**0.408**	**Yes**	**Yes**	**Satisfied**	**Satisfied**
Financial Performance	**0.816**	**0.526**	**0.348**	**Yes**	**Yes**	**Satisfied**	**Satisfied**
OCBE	**0.919**	**0.531**	**0.415**	**Yes**	**Yes**	**Satisfied**	**Satisfied**

Source: Author's workings using MS Excel

latent variables. It allows researchers to simultaneously explore interrelated dependence relationships among measured variables and latent constructs, as well as between various latent constructs. By examining the structure of these interrelationships expressed in a series of equations, SEM resembles multiple regression equations (McDonald & Ho, 2002).

SEM is employed to investigate relationships between one or more independent variables and one or more dependent variables. Path Analysis within SEM estimates the magnitude and significance of causal connections between the variable sets to test formulated hypotheses.

Implementation of Green Human Resource Management Practices has a positive and significant relationship with Firm Environmental Performance (EP).

The results of the SEM are provided in Table 9. In the present study, the analysis of path coefficients shown in the above table report that implementation of Green Human Resource Management Practices has a positive and significant relationship with Firm Environmental Performance (EP). This provides support for H1. Implementation of Green Human Resource Management Practices has a positive but non-significant relationship with Social Sustainability. Thus, hypothesis H2 is not supported. Implementation of Green Human Resource Management Practices has a positive and significant relationship with Firm Financial Performance (FP) and Organizational Citizenship Behaviour for the Environment (OCBE). This provides support for H3 and H4 respectively.

Regression Analysis

For the hypothesis H2, the relationship between the implementation of GHRM practices and Social Sustainability did not come out significant. But previous literature suggested that the implementation of Green HR Practices will likely have a positive impact on Social

Table 9 SEM Results

Relationship	Hypothesis	Estimate	SE	CR	P Value	Status
GHRM---->EP	**H1**	**0.511**	**0.025**	**20.043**	***	**Supported**
GHRM---->SS	**H2**	**0.063**	**0.001**	**1.436**	**0.529**	**Not Supported**
GHRM---->FP	**H3**	**0.216**	**0.018**	**12.236**	***	**Supported**
GHRM---->OCBE	**H4**	**0.399**	**0.011**	**37.634**	***	**Supported**

Source: Author's workings using Amos
Note: *** - $p < 0.001$

Sustainability (Yong et al., 2019). Hence, we wanted to test whether this relationship is significant for the data when it is taken industry-wise with a sample size of 200 each. So, the relationship between GHRM practices and Social Sustainability (H2) was tested industry-wise (Hospitality, Banking and IT) using regression analysis.

Hospitality Industry: Impact of GHRM practices on Social Sustainability – p-value: 0.93 (>0.05). So, this relationship did not come out as significant.

Banking Industry: Impact of GHRM practices on Social Sustainability – p-value: 0.005 (<0.05). So, this relationship is significant with a multiple R value of 0.2. So, in the banking industry, the relationship between GHRM practices and Social Sustainability turned out to be significant with a strength of 0.2.

IT Industry: Impact of GHRM practices on Social Sustainability – p-value: 0.08 (>0.05). So, the relationship did not come out as significant.

Discussion

In data analysis, first the Descriptive Statistics (Mean, Standard Deviation, Variance, Range, Minimum, Maximum, Skewness & Kurtosis) were calculated for the five variables of interest. The Skewness and Kurtosis values indicated that the five variables exhibited a normal distribution based on the collected data.

This was followed by the test for reliability of the scales used for collecting the data. The generally accepted convention is that if the Cronbach's alpha value (α) > 0.7, it is accepted as a mark that the scale has good reliability. The Cronbach's alpha value (α) was in the range of 0.911 - 0.932 for the five scales which represents very good reliability. Then, the Exploratory Factor Analysis (EFA) was done. The results showed that KMO value was > 0.7 and Bartlett's test of sphericity p value < .005 in all the cases, thus indicating that the correlation structure is adequate for factor analysis. In the case of all the variables, only one factor was extracted and there was no cross-loading. Then, Confirmatory Factor Analysis (CFA) was carried out. CFA was carried out variable-wise (GHRM practices and outcomes) followed by the entire model. From the values of the fit indices, it can be concluded that there is Good Model Fit for all the cases.

Then, Hypotheses testing was conducted (H1 to H4) using Structural Equation Modeling (SEM. Hypotheses H1 to H4 tested the direct relationships between GHRM Practices and the outcome variables.

The higher the implementation of GHRM Practices in the organization, the better will be the environmental performance of the organization.

It was hypothesized that GHRM practices have a positive impact on firm environmental performance (H1). This hypothesis was accepted ($p<.001$). This indicated that the higher the implementation of GHRM Practices in the organization, the better will be the environmental performance of the organization. Green Practices by definition mean implementing initiatives that are environment friendly. Various authors have acknowledged the impact of different GHRM practices on firm environmental performance (Govindarajulu & Daily, 2004; Guerci et al., 2016; Jabbour et al., 2010; Pinzone et al., 2016). Research has also been done on the direct and indirect impacts that investment in GHRM practices can have on the environmental performance of an organization (Paillé et al., 2013). Researchers have also addressed the positive gains that GHRM practices can provide to the organization in terms of better green knowledge, skills and abilities and pro-environment behaviors (Pham et al., 2019a).

It was hypothesized that GHRM practices have a positive impact on Social Sustainability (H2). This hypothesis was rejected ($p>.05$). The impact of GHRM practices on sustainability (economic, environmental and social) in the manufacturing context had been investigated (Yong et al., 2019). Social sustainability focuses on stakeholder well-being, both inside and outside the organization. The hypothesis may lack support because GHRM practices primarily address environmental aspects of HR functions. For H2, the industry wise regressions analysis was also conducted to see if there is a significant impact for any particular industry. In the hospitality and IT industries, no significant impact could be found while in the banking industry, there was a significant impact of GHRM practices on social sustainability.

It was hypothesized that GHRM practices have a positive impact on firm financial performance (H3). This hypothesis was accepted ($p<.001$). This indicated that the higher the implementation of GHRM practices in the organization, the better will be the financial performance of the organization. This is in line with the suggestions by various researchers that improvement in employee-level outcomes due to the implementation of green practices can also drive the financial performance of the organization (Epstein & Roy, 2001; Turban & Greening, 1997). This also supports the findings in the study which examined the impact of a bundle of GHRM practices on the financial performance of the organization (Longoni et al., 2018). Thus, investing in GHRM practices improves environmental performance and strengthens financial outcomes.

It was hypothesized that GHRM practices have a positive impact on OCBE (H4). This hypothesis was accepted ($p<.001$). This indicated that the higher the implementation of GHRM practices in the organization, the better will be the organizational citizenship behavior of the employees towards the environment. The findings for this hypothesis support the argument that GHRM strategies can encourage discretionary behaviors among the employees which in turn can have a positive impact on the environment (Ren et al., 2018). There have been other instances as well where the impact of GHRM practices on the discretionary behavior of employees was checked and the results came out significant (Pham et al., 2019b; Pinzone et al., 2019). Therefore, GHRM practices positively influence employees' voluntary green behaviors, leading to environmental benefits for the organization.

Conclusion

This paper, based on a multi-respondent survey, explores the impact of the implementation of a bundle of green HRM practices (i.e., green job design; green recruitment and selection; green training and development; green performance management; green compensation management; green health and safety; green labor relations) on various outcome variables (firm environmental performance, social sustainability, firm financial performance and organizational citizenship behaviour for the environment (OCBE)). Findings demonstrate that: (i) The proposed model had a good fit; (ii) Implementation of GHRM practices had a positive and significant influence on firm environmental performance (EP), firm financial performance (FP) and organizational citizenship behavior for the environment (OCBE). (iii) Implementation of GHRM practices had a positive and significant influence on social sustainability (SS) in the banking industry.

This study has a few limitations that could be addressed in future research. Firstly, the cross-sectional design with a short time lag limits the ability to confirm causal relationships. The data is also restricted to three industries within the services sector—hospitality, banking, and information technology—limiting its generalizability. Additionally, data was collected only from the Mumbai region, restricting broader applicability. While efforts were made to reduce Common Method Bias using separate questionnaires, the study may still be affected by it. Future research could address these limitations for more comprehensive findings.

This study makes significant theoretical contributions to management research, particularly in the field of Green HRM in developing economies. While most existing research is conceptual, this study provides empirical evidence on the economic, environmental, and social outcomes of implementing Green HRM practices in such contexts. It also fills a notable gap by exploring the impact of Green HRM on social sustainability, an area often overlooked in previous studies, which primarily focused on the environmental and economic aspects of Sustainability.

Regarding managerial implications, the study highlights the positive relationship between the implementation of Green HRM practices and firm performance, emphasizing that improving environmental performance requires companies to adopt sustainable HRM practices. As organizations face increasing environmental regulations, investing in Green HRM not only enhances environmental outcomes but also boosts brand image, attracts stakeholders and leads to better profitability.

Furthermore, the study shows that Green HRM practices positively influence organizational citizenship behavior for the environment (OCBE), where employees voluntarily engage in pro-environmental actions. By demonstrating commitment to sustainability, organizations encourage employees to adopt similar values, fostering a culture of environmental responsibility.

Future studies could use a longitudinal design to confirm causality in the relationships observed in this study. Expanding the research to include more industries within the Services sector would provide a more comprehensive understanding of GHRM practices. Additionally, comparing GHRM implementation and its impacts on the manufacturing and services sectors could offer valuable insights. Investigating the interaction between GHRM and other domains of green management, such as green supply chain management, green marketing, and green finance, would also be a fruitful area for future research.

References

Aggerholm, H. K., Andersen, S. E., & Thomsen, C. (2011), "Conceptualising Employer Branding in Sustainable Organisations", *Corporate Communications: An International Journal*, 16(2): 105-23.

Altman, D. G., & Bland, J. M. (1995), "Statistics Notes: The Normal Distribution", *British Medical Journal*, 310(6975): 298.

Alukal, P. P., Nair, S. K., & Bishwas, S. K. (2022), "Green Human Resource Management: A Review and Synthesis", *Interdisciplinary Environmental Review*, 22(3-4):211-31.

Amrutha, V. N., & Geetha, S. N. (2019), "A Systematic Review on Green Human Resource Management: Implications for Social Sustainability", *Journal of Cleaner Production*, 247: 119-31.

Appelbaum, E., Bailey, T., Berg, P., Kalleberg, A. L., & Bailey, T. A. (2000), *Manufacturing advantage: Why High-Performance Work Systems Pay off*. Cornell University Press.

Arulrajah, A. A., Opatha, H. H. D. N. P., & Nawaratne, N. N. J. (2015). "Green Human Resource Management Practices: A Review", *Sri Lankan Journal of Human Resource Management*, 5(1)

Boiral, O. (2009), "Greening the Corporation Through Organizational Citizenship Behaviors". *Journal of Business Ethics*, 87(2): 221–36.

Boiral, O., & Paillé, P. (2012), "Organizational Citizenship Behavior for the Environment: Measurement and Validation, *Journal of Business Ethics*, 109(4): 431-45.

Boselie, P., Dietz, G., & Boon, C. (2005), "Commonalities and Contradictions in HRM and Performance Research", *Human Resource Management Journal*, 15(3): 67-94.

Byrne, B. M. (2010), Structural Equation Modeling with AMOS: Basic Concepts, Applications, and Programming. New York: Routledge.

Creswell, J. W. (2009), Research Design: Qualitative and Mixed Methods Approaches. London, Thousand Oaks: Sage Publications.

Daily, B. F., & Huang, S. C. (2001), "Achieving Sustainability Through Attention to Human Resource Factors in Environmental Management", *International Journal of Operations & Production Management*, 21(12): 1539-52.

Epstein, M. J., & Roy, M. J. (2001), "Sustainability in Action: Identifying and Measuring the Key Drivers", *Long Range Planning*, 34(5): 585-604.

Govindarajulu, N., & Daily, B. F. (2004), "Motivating Employees for Environmental Improvement", *Industrial Management & Data Systems*, 104(4): 364-72.

Guerci, M., Longoni, A., & 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): 262-89.

Haddock-Millar, J., Sanyal, C., & 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): 192-211.

Hair, J. F., Babin, B., Money, A. H., & Samouel, P. (2003). Essentials of Business Methods Research. Hoboken, NJ: Wiley.

Hair, J., Black, W. C., Babin, B. J. & Anderson, R. E. (2010), Multivariate Data Analysis (7th ed.). Upper Saddle River, New Jersey: Pearson Educational International.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). Multivariate Data Analysis, New Jersey: Pearson University Press.

Hu, L. T., & Bentler, P. M. (1999), "Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria versus New Alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1):1-55.

Jabbour, C. J. C., Santos, F. C. A., & 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): 1049-89.

Jackson, S. E., & Seo, J. (2010), "The Greening of Strategic HRM Scholarship", *Organization Management Journal*, 7(4): 278-90.

Kaiser, H. F. (1974), "An Index of Factorial Simplicity." *Psychometrika*, 39(1): 31–36. https://doi.org/10.1007/BF02291575

Kennedy, K & Toffler, B (2014), "Sustainable Management and Business Sustainability: Conceptual Models". *International Journal of Business Strategy*, 4(2): 45-67.

Krithikadatta, J. (2014), "Normal Distribution" *Journal of Conservative Dentistry,* 17(1): 96.

Laosirihongthong, T., Adebanjo, D., & Tan, K. C. (2013), "Green Supply Chain Management Practices and Performance", *Industrial Management & Data Systems*, 113(8): 1088-1109.

Longoni, A., Luzzini, D., & Guerci, M. (2018), Deploying Environmental Management Across Functions: The Relationship Between Green Human Resource Management and Green Supply Chain Management", *Journal of Business Ethics*, 151(4): 1081-95.

Mandip, G. (2012), "Green HRM: People Management Commitment to Environmental Sustainability", *Research Journal of Recent Sciences*, 244-52.

Mathapati, C. M. (2013), "Green HRM: A Strategic Facet", *Tactful Management Research Journal*, 2(2): 1-6.

McDonald, R. P., & Ho, M. H. R. (2002), "Principles and Practice in Reporting Structural

Equation Analyses", *Psychological Methods*, 7(1): 64–82. https://doi.org/10.1037/1082-989X.7.1.64.

McGuire, D., & Germain, M. L. (2015), "Testing the Existence of a Green Contract: An Exploratory Study", *Advances in Developing Human Resources*, 17(4): 489-503.

Nelson, R. R. (1959), "The Simple Economics of Basic Scientific Research", *Journal of Political Economy*, 67(3): 297-306.

Nijhawan, G. (2014), "Green HRM–A Requirement for Sustainable Organization", *Indian Journal of Research*, 3(10): 69-70.

Paillé, P., Boiral, O., & Chen, Y. (2013), "Linking Environmental Management Practices and Organizational Citizenship Behavior for the Environment: A Social Exchange Perspective", The *International Journal of Human Resource Management*, 24(18): 3552-75.

Paulraj, A. (2011), "Understanding the Relationships Between Internal Resources and Capabilities, Sustainable Supply Management and Organizational Sustainability", *Journal of Supply Chain Management*, 47(1): 19-37.

Pham, N. T., Thanh, T. V., Tuèková, Z., & Thuy, V. T. N. (2019a), "The Role of Green Human Resource Management in Driving Hotel's Environmental Performance: Interaction and Mediation Analysis", *International Journal of Hospitality Management*, 88: 102392.

Pham, N. T., Tuèková, Z., & Jabbour, C. J. C. (2019b), "Greening the Hospitality Industry: How Do Green Human Resource Management Practices Influence Organizational Citizenship Behavior in Hotels? A Mixed-methods Study", *Tourism Management*, 72: 386-99.

Pinzone, M., Guerci, M., Lettieri, E., & Huisingh, D. (2019), "Effects of 'Green' Training on Pro-environmental Behaviors and Job Satisfaction: Evidence from the Italian Healthcare Sector", *Journal of Cleaner Production*, 226: 221-32.

Pinzone, M., Guerci, M., Lettieri, E., & Redman, T. (2016), "Progressing in the Change Journey Toward Sustainability in Healthcare: the Role of 'Green' HRM", *Journal of Cleaner Production*, 122: 201-11.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003), "Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies", *Journal of Applied Psychology*, 88(5): 879-903. https://doi.org/10.1037/0021-9010.88.5.879.

Preacher, K. J., & MacCallum, R. C. (2002), "Exploratory Factor Analysis in Behavior Genetics Research: Factor Recovery with Small Sample Sizes", *Behavior Genetics*, 32(2): 153–61.

Ramus, C. A. (2001), "Organizational Support for Employees: Encouraging Creative Ideas for Environmental Sustainability", *California Management Review*, 43(3): 85-105.

Rawashdeh, A. (2018), "The Impact of Green Human Resource Management on Organizational Environmental Performance in Jordanian Health Service Organizations", *Management Science Letters*, 8(10): 1049-58.

Ren, S., Tang, G., & Jackson, S. E. (2018), "Green Human Resource Management Research in Emergence: A Review and Future Directions", *Asia Pacific Journal of Management*, 35(3): 769-803.

Renwick, D., Redman, T., & Maguire, S. (2008). Green HRM: A Review, Process Model, and Research Agenda. University of Sheffield Management School Discussion Paper, 1:1-46.

Saunders, M., Lewis, P., & Thornhill, A. (2003). Research Methods for Business Students, Essex: Prentice Hall: Financial Times.

Shah, M. (2019), "Green Human Resource Management: Development of a Valid Measurement Scale", *Business Strategy and the Environment*, 28(5): 771-85.

Shah, R., & Goldstein, S. M. (2006), "Use of Structural Equation Modeling in Opera-

tions Management Research: Looking Back and Forward", *Journal of Operations Management*, 24(2): 148-69.

Starik, M., & Rands, G. P. (1995), "Weaving an Integrated Web: Multilevel and Multisystem Perspectives of Ecologically Sustainable Organizations", *Academy of Management Review*, 20(4): 908-35.

Suhr, D. D. (2006), Exploratory or Confirmatory Factor Analysis? University of Colorado, Paper 200-31 PDF

Treiblmaier, H., & Filzmoser, P. (2010), "Exploratory Factor Analysis Revisited: How Robust Methods Support the Detection of Hidden Multivariate Data Structures in IS Research", *Information and Management*, 47(4): 197–207.

Turban, D. B., & Greening, D. W. (1997), "Corporate Social Performance and Organizational Attractiveness to Prospective Employees", *Academy of Management Journal*, 40(3): 658-72.

Watson, K. & Kavid, T. (2014), "Green HR: An Ideology or Practice in Possibility", *Journal of Business Sustainability*, 6 (2):129-39.

WCED, S.W.S. (1987), "World Commission on Environment and Development", *Our Common Future*, 17 (1): 1–91.

Wehrmeyer, W. (1996), Greening People: Human Resources and Environmental Management, Greenleaf Publishing.

Wong, K. L., Tan, P. S. H., Ng, Y. K., & Fong, C. Y. (2013), "The Role of HRM in Enhancing Organizational Performance", *Human Resource Management Research*, 3(1): 11-15.

Yong, J. Y., Yusliza, M. Y., Ramayah, T., Jabbour, C. J. C., Sehnem, S., & Mani, V. (2019). "Pathways Toward Sustainability in Manufacturing Organizations: Empirical Evidence on the Role of Green Human Resource Management", *Business Strategy and the Environment*, 29(1): 212-28.

Zhu, Q., Sarkis, J., & Lai, K. H. (2008), "Confirmation of a Measurement Model for Green Supply Chain Management Practices Implementation", *International Journal of Production Economics*, 111(2): 261-73.