

Green Human Resource Management and Organizational Sustainability: The Mediating Role of Green Employee Behavior

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ABSTRACT

There is increasing emphasis on organisations to provide environmental, economic and social sustainability, but policies are not enough to change employee behaviour at work. This study aims to investigate the relationship of green human resource management (GHRM) practices to organizational sustainability via green employee behavior. A survey method was used, quantitative, and 280 questionnaires were filled out by employees who work in environmentally friendly organizations and industries. The measurement of GHRM was conducted in three ways: green recruitment, green training, green performance evaluation and green rewards. Direct and indirect relationships were analysed using descriptive statistics, reliability test, correlation analysis and structural equation modeling along with bootstrapping. The results indicated that GHRM significantly affected the organizational sustainability and green employee behaviours; in addition, green employee behaviours significantly affected sustainability. The relationship between GHRM and organizational sustainability was partially mediated by the green employee behavior. The study indicates that the GHRM contributes to sustainability gains primarily through the modification of daily actions of employees, and that the recruitment, training, assessment and reward systems should be aligned with environmental objectives.

Keywords: green human resource management; green employee behavior; organizational sustainability; mediation; structural equation modeling



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INTRODUCTION

There is a shift in focus to assessing organizations by taking into account their environmental, economic, and social performance, in addition to their financial performance. Corporate sustainable development is an ongoing process that involves balancing these three dimensions; research indicates that it grows with the company's abilities and procedures (Bansal, 2005). Given that solutions to the problem of the environment are in the end the responsibility of human choices, scholars have urged organizational researchers to seek ways in which workplaces can foster sustainable behavior on the part of their employees (Ones & Dilchert, 2012).

Human resource management is a natural lever to do so. Green human resource management (GHRM) is the application of HR policies and practices that aim at sustainable use of resources and/or the support of environmental goals in organizations (Renwick et al., 2013). The initial feedback highlighted the main HR functions where environmental management could be integrated into the workforce – recruitment, training, performance management, and rewards (Jackson et al., 2011). Later reviews have identified GHRM as a new and fast-growing field, which requires more evidence on mechanisms and outcomes (Ren et al., 2018), and measurement efforts have led to the development of valid scales that reflect the core practices of GHRM (Tang et al., 2018).

Behavioral is the most common mechanism suggested. Employee Green Behaviour refers to the activities undertaken by employees to decrease the environmental effects of their work such as energy saving, waste reduction, recycling and making suggestions for improvements (Norton et al., 2015). These voluntary acts have been suggested as organizational citizenship behavior toward the environment (OCBE) (Boiral & Paillé, 2012). On the individual level, HRM practices are related to environmental performance through employees' behavior (Paillé et al., 2014); GHRM practices are linked to employees' green workplace behavior through green climate and values (Dumont et al., 2017); GHRM impacts on the eco-friendly behavior in hotels (Kim et al., 2019; Pham et al., 2019). Employer surveys also reveal that HRM is applied in different ways to encourage pro-environmental work behaviour (Zibarras & Coan, 2015).

Finally, behaviour should be relevant to sustainability results. Organizational leaders and systems can transform the entire organization's pro-environmental behavior (Robertson & Barling, 2013) and the collection of daily changes in behavior can benefit resource efficiency, cost savings and stakeholder confidence. Balanced environmental, economic and social performance (GHRM outcome) may therefore be an outcome of the GHRM that works through employee behavior.

Despite this improvement, there is a lack of research examining GHRM, green employee behavior, and the multidimensional concept of organizational sustainability simultaneously in the workplace, and research in developing countries is scarce. This study aimed to fill this gap by examining (a) direct effect of GHRM on organizational sustainability (b) effect of GHRM on green employee behavior (c) mediation of green employee behavior, in bootstrapped indirect effects (Preacher & Hayes, 2008). It's contributing by outlining a behavioural trajectory between HR systems and sustainability outcomes and providing practical advice to those organisations who want to be more sustainable.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Conceptual background

GHRM involves HR practices that match employees with environmental goals (Renwick et al. 2013). This study investigated four areas: green recruitment, growing environmental awareness and skills in the workplace; green performance assessment, incorporating environmental issues into appraisals; and green rewards, the reinforcement and reward of environmentally responsible behaviour (Jackson et al., 2011; Tang et al., 2018). Green employee behavior is defined as employees' involvement in environmentally responsible workplace practices (Norton et al., 2015; Ones & Dilchert, 2012). The sustainability of an organization is defined as its environmental, economic and social sustainability performance (Bansal, 2005). The model is based on the concept that HR systems can be used to shape the behavior of employees, which can be influenced by ability and motivation, and that green HR practices can lead to green behaviors, which can lead to green organizational outcomes (Dumont et al., 2017; Renwick et al., 2013).

The Sustainability of GHRM and Organizations

Green recruitment attracts values with an environmental focus and green training enables staff to reduce waste and energy consumption, environmental evaluation creates a visible commitment to sustainability and green rewards reinforce sustainability (Jackson et al., 2011; Tang et al., 2018). These practices combine to make sustainability a part of the management routine. The results of research at the employee level demonstrate the relationship between HRM practices and environmental performance (Paillé et al., 2014), while the hotel research confirms that GHRM is associated with environmental performance (Kim et al., 2019). Sustainability is multidimensional, and GHRM can help achieve economic outcomes through efficiency, social outcomes through employee engagement and stakeholder trust (Bansal, 2005; Ren et al., 2018). Accordingly:

H1: GHRM has a significant positive effect on organizational sustainability.

GHRM and Green Employee Behavior

HR practices convey to employees what is valued and expected. Dumont et al. (2017) revealed that GHRM practices facilitated green behavior of employees, partly by providing a psychological green climate and by green values of employees. Employees' EOCB at hotels were found to be impacted by GHRM, as demonstrated by Pham et al. (2019), and the impact on employee's eco-friendly behavior was reported by Kim et al. (2019). Zibarras & Coan (2015) found that training, appraisal, and incentives are some of the HRM tools used to encourage pro-environmental behavior as indicated by the survey. The behavior of employees is influenced by personal characteristics as well as the context in which they work (Norton et al., 2015), with HR practices being key components of that context. Hence:

H2: Green employee behavior is significantly influenced by the implementation of GHRM.

Green Employee Behaviour and Organisational Sustainability

Reduce energy use, minimize waste, recycle and suggest ways to improve the environment, organizations save money and the environment, and enhance their reputation with stakeholders (Norton et al., 2015; Ones & Dilchert, 2012). Therefore, individual pro-environmental behaviour lead to organisational outcomes, and systems and leadership that influence individual behaviour influence the organisation's environmental profile (Robertson & Barling, 2013). Because it takes two to tango, discretionary environmental citizenship is especially important, as formal policies cannot anticipate all the actions (Boiral & Paillé, 2012). Therefore:

H3: It has been found that green employee behaviour positively affects organizational sustainability.

The Mediating Role of Green Employee Behavior

Therefore, part of the impact of GHRM should be mediated by behaviour, if GHRM promotes green behaviour, and behaviour promotes sustainability. This is in line with the findings of HRM's influence on environmental performance via employees' behaviors (Paillé et al., 2014) and GHRM's influence on behavior via climate and values (Dumont et al., 2017). Due to the indirect effect being based on two coefficients that are open to an asymmetric sampling distribution, bootstrapped confidence intervals (Preacher & Hayes, 2008) were used to test mediation. Thus:

H4: Green employee behavior acts as a mediator between GHRM and the organizational sustainability.

Conceptual framework

In this conceptual model, GHRM (green recruitment, green training, green performance evaluation and green rewards) is the independent variable, organizational sustainability (environmental, economic and social) is the dependent variable, and green employee behavior is the mediating variable. To look for potential differences between the respondents, demographic characteristics were analyzed.

METHODOLOGY

Research design

This study used quantitative survey method to investigate the contribution of GHRM practices to the organizational sustainability via green employee behavior or not. A quantitative approach was chosen due to the hypothesis testing and estimation of size and significance of direct and indirect effects. The design was cross sectional; all variables were measured at one time.

Population, Sampling, and Sample

The data were collected from 280 employees of environmentally friendly companies and institutions. These organisations were targeted as they were more likely to have had formal green HR practices and be able to report them. Responses were anonymous and participation was voluntary and only the employees who had served at least one year in the organization were included in the study. The sample size was sufficient for the structural model having three latent constructs (Hair et al., 2019).

Instrument and Measurement

A structured questionnaire was used to measure the study variables. The literature search identified four practice domains – green recruitment, green training, green performance evaluation, and green rewards (Jackson et al., 2011; Tang et al., 2018) – and these were used to measure GHRM. Green employee behavior was assessed by the employees' involvement in environment-friendly working practices (Boiral & Paillé, 2012; Norton et al., 2015). The sustainability of the organisations was determined by the environmental, economic and social sustainability indicators (Bansal, 2005). Each item has been rated on a 5 point Likert scale of 1 (strongly disagree) to 5 (strongly agree). Demographic data was also gathered for gender, age, level of education, industry and work experience. A small number of staff members were asked to take part in a pre-test of the questions and ambiguous questions were rephrased.

Reliability, Validity and Common Method Bias

Cronbach's alpha and composite reliability were used to verify reliability, wherein values from 0.70 and above were considered acceptable. The convergent validity was evaluated using factor loads and average variance extracted (AVE) and the discriminant validity was assessed using the Fornell–Larcker criterion and the heterotrait–monotrait (HTMT) ratio (Hair et al., 2019; Henseler et al., 2015). All data were self-reported by the same respondents, so procedural remedies are applied to the data, including anonymity and clear wording, and a full collinearity assessment is done (Podsakoff et al., 2012).

DATA ANALYSIS

The data analysis consisted of descriptive statistics, reliability test, correlation analysis and structural equation modeling to check the direct relationship between the variables. The sample and study variables were summarized with descriptive statistics and frequencies and bivariate associations were examined using Pearson correlations. Demographic characteristics were analyzed using independent-samples t-tests and one-way analysis of variance to determine for possible differences among the respondents. Variance-based structural equation modeling was used to estimate the structural model, and bootstrapping with 5,000 resamples and 95% confidence intervals was used to test the mediation of green employee behavior with 95% confidence intervals that do not contain zero (Preacher & Hayes, 2008; Hair et al., 2019).

ANALYSIS AND RESULTS

Demographic profile

The summary in Table 1 shows the characteristics of 280 respondents. The sample encompassed employees with varying ages, educational backgrounds, industries, and experience, highlighting the value of the data to evaluate sustainability practices across different organizations.

Table 1. Demographic profile of respondents (N = 280)

Characteristic	Category	Frequency	Percentage
Gender	Male	176	62.9
Gender	Female	104	37.1
Age	Under 30 years	82	29.3
Age	30–39 years	124	44.3
Age	40 years and above	74	26.4
Education	Bachelor's or below	119	42.5
Education	Master's	126	45.0
Education	MPhil/PhD	35	12.5
Industry	Manufacturing	118	42.1
Industry	Services	97	34.6
Industry	Energy and others	65	23.2

Characteristic	Category	Frequency	Percentage
Experience	Less than 5 years	74	26.4
Experience	5–10 years	126	45.0
Experience	More than 10 years	80	28.6

The results for group comparisons did not reveal any significant differences between the levels of green employee behavior across genders ($t(278) = 1.21$; $p = .23$) or by work experience ($F(2, 277) = 2.31$; $p = .10$). There were significant differences between green employee behaviour based on education level ($F(2, 277) = 4.12$, $p = .017$); respondents with postgraduate degrees scored slightly higher scores than the others and marginally by industry ($F(2, 277) = 3.05$, $p = .049$).

Reliability and convergent validity

The measurement results are given in Table 2. The Cronbach's alpha and composite reliability (CR) values were all above 0.70, the factor loadings were all above 0.60, and the AVE values were all above 0.50, which means it has satisfactory reliability and convergent validity (Hair et al., 2019).

Table 2. Reliability and convergent validity

Construct	Items	Loadings range	Cronbach's α	CR	AVE
Green HRM	16	0.66–0.83	0.92	0.93	0.56
Green employee behavior	8	0.70–0.84	0.89	0.91	0.58
Organizational sustainability	12	0.67–0.82	0.91	0.93	0.57

Descriptive statistics and discriminant validity

The descriptive statistics of the study and the discriminant validity were examined. The means, SDs, correlations with the square root of AVE on the diagonal, and the HTMT ranges are shown in Table 3. The mean scores were above the midpoint of the scale. The square roots of the constructs were all higher than the correlations with the other constructs, and all HTMT values were under 0.85, demonstrating the discriminant validity (Henseler et al., 2015).

Table 3. Descriptive statistics, correlations, and discriminant validity

Construct	Mean	SD	1	2	3	HTMT range
1. Green HRM	3.69	0.62	0.75			0.60–0.64
2. Green employee behavior	3.76	0.59	0.58	0.76		0.64–0.68

Construct	Mean	SD	1	2	3	HTMT range
3. Organizational sustainability	3.82	0.56	0.55	0.61	0.75	0.60–0.68

Note. Diagonal values are the square roots of AVE. All correlations are significant at $p < .01$.

Structural model and mediation analysis

The structural results for 5,000 bootstrap resamples are shown in Table 4. The results showed that there was a significant positive total effect of GHRM on organizational sustainability ($\beta = 0.55$, $p < .001$) supporting H1 and a strong positive total effect of GHRM on green employee behavior ($\beta = 0.58$, $p < .001$) supporting H2. The results indicated that Green employee behavior was highly associated with organizational sustainability ($\beta = 0.44$, $p < .001$), thus supporting H3. The direct effect of GHRM on sustainability was reduced from 0.55 to 0.30 when the mediator was introduced, but it is still significant. The indirect effect of green employee behavior was significant ($\beta = 0.25$, 95% CI [0.19, 0.32]), and the interval did not contain zero, which further indicated that the green employee behavior was a partial mediator between the organization and the green customer behavior, in support of H4. The indirect effect comprised approximately 45% of the total effect. The model accounted for 34% of the variance in green employee behavior and 43% of the variance in organizational sustainability and had an acceptable standardized root mean square residual of 0.05.

Table 4. Direct, indirect, and total effects

Hyp	Path	β	SE	t	p	95% CI	Decision
H1	GHRM → Organizational sustainability (total)	0.55	0.04	13.75	< .001	[0.47, 0.63]	Supported
H2	GHRM → Green employee behavior	0.58	0.04	14.50	< .001	[0.50, 0.66]	Supported
H3	Green employee behavior → Organizational sustainability	0.44	0.05	8.80	< .001	[0.34, 0.54]	Supported
	GHRM → Organizational sustainability (direct, with mediator)	0.30	0.05	6.00	< .001	[0.20, 0.40]	Significant
H4	GHRM → Green employee behavior → Organizational sustainability (indirect)	0.25	0.04	6.25	< .001	[0.19, 0.32]	Supported (partial mediation)

Note. $R^2 = 0.34$ (green employee behavior); $R^2 = 0.43$ (organizational sustainability). Variance accounted for by the mediator = 45%.

DISCUSSION

The findings were found to be in accord with the results of the study of previous researchers that GHRM helps in sustainability of organization. This is consistent with the evidence from the employees, which indicates that HRM practices are associated with environmental performance (Paillé et al., 2014) and with hospitality studies showing that GHRM is related to environmental outcomes (Kim et al., 2019). The practices of green recruitment, training, appraisal and rewards seem to be evidence of sustainability becoming a desired and incentivised aspect of the job, again reinforcing the notion that HR systems are significant drivers of corporate sustainable development (Jackson et al., 2011; Renwick et al., 2013).

GHRM also exerted a significant influence on green employees' behavior. This is consistent with the results of research that GHRM can encourage employees to do green behavior in the workplace (Dumont et al., 2017) and to give attention to citizenship behavior that is environmentally oriented (Pham et al., 2019). It also aligns with survey findings of an association between HRM tools and pro-environmental behavior (Zibarras & Coan, 2015). As expected, green employee behavior was a strong predictor of sustainability, in line with the idea that individuals' pro-environmental behaviors add up to organizational outcomes (Norton et al., 2015; Robertson & Barling, 2013).

The partial mediation suggests that GHRM has multiple pathways, one of which is employee behaviour. About half of the total effect was mediated through the effect behavior, and the other direct effect was likely due to structural benefits of GHRM (such as enhanced environmental competency in recruitment, better policies, and improved stakeholder reputation) that are not related to discretionary behavior. The discovery further confirms that HR policies are not enough if they are not implemented in reality (Boiral & Paillé, 2012; Ones & Dilchert, 2012). The group differences by education indicate that more-educated employees are more likely to respond to green HR signals, but these differences were small.

CONCLUSION

The present study investigated whether GHRM practices positively affect employees' environmental behaviors which relate to organizational sustainability in the context of employees of green organizations. Results indicated that the evidence directly and indirectly influenced sustainability, increased green employee behaviour and partially mediated the impact of evidence on sustainability. The study makes a contribution by explaining a linkage between HR systems and environmental, economic and social outcomes in one model.

Based on this, organisations are encouraged to incorporate environmental dimension in all employee life cycle stages: recruitment of employees with environmental values; giving regular environmental training; giving environmental targets as part of employee performance appraisal; and rewarding, recognising and celebrating environmentally responsible behaviour. Managers can also help to make it possible for behaviour to happen by making facilities available, structures clear and rules easy to follow and setting up green teams and allowing staff to suggest improvements, while demonstrating sustainable behaviour themselves (Robertson & Barling, 2013). Practices should be reviewed regularly to make sure they are not merely symbolic but are put into action daily. These can be achieved with the help of policy and industry bodies through sustainability reporting frameworks, incentives and certification for green workplaces, and training initiatives for SMEs that are unable to have full-time HR professionals.

There are some caveats to be noted. Causality cannot be inferred from the cross-sectional design and the sample was selected from environmentally conscious organizations, which may not be representative of organizations that are not actively engaged in environmental concerns. Although procedural measures were used, common method bias may have occurred because self-reported data came from a single source and organizational sustainability was measured based on employees' perceptions instead of objective data (Podsakoff et al., 2012). Longitudinal or multi-source designs, and integration of employee surveys with the companies sustainability-related data, could be additionally investigated in future research as well as each GHRM dimension separately and moderation of some variables like green organizational culture, leadership, environmental regulation, and employees' environmental values.

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