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Going Green: Investigating the Relationship between Green HRM Practices and Employee Performance through Moderated Mediation

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Abstract

This study explores the association between green HRM practices and employee performance, mediated by employee green behavior, and moderated by environmental knowledge. The research utilized a convenience sampling method, and 459 respondents from the banking sector of Pakistan participated in survey. The data was analyzed using Structural equation modeling (SEM) in Smart PLS. The findings revealed that green HRM practices have a positive effect on employee performance and are positively mediated by employee green behavior. Moreover, environmental knowledge was found to moderate the association between green HRM practices and green behavior of employees positively. This study has practical implications for organizations that aim to implement green HRM practices. By creating awareness and providing training to employees, organizations can enhance their employees' environmental knowledge and promote green behavior, leading to better employee performance. Moreover, the study's findings highlight the need for organizations to prioritize green HRM practices to achieve sustainability goals. Future research could use longitudinal data and extend the study to other sectors and countries to enhance generalizability. The study's findings have practical implications for organizations seeking to promote environmental sustainability while enhancing employee performance.

Keywords: Green Human Resource Management (GHRM), Employee Performance (EP), Environmental Knowledge (EK), Moderated Mediation, Banking Sector, Pakistan.

Introduction

In recent years, the importance of incorporating sustainable and green practices in organizations has become increasingly evident. Although organizations have been implementing environmental management systems to tackle the challenges posed by climate change and sustainable practices,

these initiatives have proved insufficient. The success of such actions depends significantly on the extent to which employees exhibit pro-environmental behavior at work (Robertson & Barling, 2013). In their quest to promote green and sustainable practices, researchers (de Oliveira, Leal Filho, Mangili, Jabbour, & de Souza Freitas, 2012; Renwick, Redman, & Maguire, 2013) have highlighted the significant role that human resource management (HRM) plays in this regard. Therefore, incorporating green and sustainable HRM practices could potentially enhance an organization's sustainability. Therefore, it is imperative to investigate the underlying factors that promote pro-environmental behavior, which denotes the tendency to participate in actions that support environmental conservation (Saeed et al., 2019). Such behavior has significant advantages in mitigating the adverse effects of climate change (Ahmad, Islam, Sadiq, & Kaleem, 2021).

Green Human Resource Management (HRM) is consists of such practice that aim to incorporate environmental sustainability into HRM policies and practices by making employees ready to engage in pro-environment actions (Renwick et al., 2013). This approach involves not only reducing the organization's carbon footprint but also ensuring the well-being of the environment and employees. Green HRM practices can have several organizational and individual outcomes. For example, green HRM practices in the organization can lead to employee green behavior that can ultimately lead to further individual and organizational outcomes such as increased employee and organizational performance. However, to best yield the outcomes of Green HRM practices, a supportive organizational culture and self-motivation are needed (Chen, Chuang, & Chen, 2018). As employee performance has been a topic of great interest among researchers and practitioners. The importance of comprehending the impact of Green HRM practices on employee performance cannot be overstated, as it is a crucial stride toward establishing a competent Green HRM system within organizations. The primary objective of this scholarly article is to assess whether GHRM can impact work performance of employees or not. Additionally, the research also undertakes to investigate the mediating impact of green behavior and determine the degree to which the employees' environmental knowledge can bolster this correlation.

The present article aims to conduct an in-depth review of the existing literature on green HRM practices, employee performance, environmental knowledge, and employee green behavior. Following this, a conceptual framework will be presented that elucidates the interrelationships among the study variables. The research methodology and data analysis techniques used to test the research hypotheses will then be discussed. In the end, the study's findings and implications will be presented, and recommendations will be made to organizations regarding ways to improve their Green HRM practices as well as environmental knowledge of employee to yield its positive impact on the performance of employees.

Literature Review

Green HRM

Green HRM (GHRM) is relatively a new concept that refers to considering environmental integration into HRM policies and practices. The goal is to ensure that organizations are not only environmentally responsible, but also create a sustainable future for their employees, customers, and the wider community.

Green HRM, as described by Jackson et. al, (2011), pertains to the implementation of HRM practices that promote the sustainable use of resources and foster environmental sustainability within an organization. In a similar vein, Renwick et al., (2013) define GHRM as the incorporation of HRM policies and practices that support the sustainable utilization of economic resources in the organization. These definitions emphasize the crucial role of HRM policies and practices in advancing environmental sustainability. The Green HRM model provides a critical framework for

organizations seeking to balance their economic, environmental, and social objectives. By integrating environmental considerations into HRM practices, organizations can work towards creating a more sustainable future for themselves and the broader society.

The integration of GHRM practices is possible across various functions of HRM, for example, recruitment, compensation, training as well as performance management. To illustrate, in the recruitment process, organizations can prioritize candidates with experience in environmental sustainability or who demonstrate a green mindset. In training and development, companies can provide employees with relevant education on environmental sustainability and encourage them to adopt sustainable practices in the workplace. In performance management, organizations can include environmental sustainability goals and targets in employee performance evaluations. In compensation and benefits, organizations can provide incentives for employees who adopt environmentally sustainable behaviors.

Research has shown that GHRM can have several benefits for organizations, including enhancing their environmental performance, improving their reputation, attracting environmentally conscious customers and employees, and improving employee well-being. For example, Ehnert and Harry (2012) found that the Green HRM practices in a German manufacturing company resulted in significant improvements in environmental performance, as well as employee engagement and satisfaction.

Employee Green Behavior (EGB)

Employee green behavior, also known as environmentally responsible behavior (ERB), refers to the actions taken by employees to reduce negative environmental impacts in the workplace. These behaviors include conserving resources, recycling, and reducing waste.

Individual, organizational, and situational factors have been identified as antecedents of employee green behavior. Individual factors include environmental attitudes, knowledge, and values causing individuals to behave in a green manner (Ahmad et al., 2021; Dawkins & Lewis, 2003; Saeed et al., 2019). While organizational factors including management support, culture and training also result in a positive influence on EGB. Studies have shown that when management is supportive of green initiatives, employees are possibly involved in green behavior. Green training has also been found to be an effective way to increase employee green behavior. (Aragón-Correa & Sharma, 2003; Bansal, 2005; Renwick, Jabbour, Muller-Camen, Redman, & Wilkinson, 2016).

Environmental Knowledge

The term "environmental knowledge of employees" pertains to the awareness and understanding of environmental sustainability issues by the employees (Afsar et al., 2016; Saeed et al., 2019). It encompasses comprehension and familiarity with the natural world and its functioning, including the relationships between living organisms and their physical surroundings. Environmental knowledge covers various topics, such as ecology, geology, climate, biodiversity, environmental policies, and conservation practices.

Environmental knowledge is essential as it empowers individuals and communities to make informed decisions about how they interact with their environment, encompassing sustainable practices and advocating for environmental protection. Consequently, this research proposes that environmental knowledge can act as a moderator between green HRM practices and employee performance. The association's strength is more potent among employees with elevated levels of environmental knowledge.

Green HRM Practices and Green Behavior of Employee

The implementation of GHRM practices can have a psychological impact on employees, motivating them to engage in environmentally friendly behavior. Empirical evidence supports this notion, as studies (Li, Abdalla, Mohammad, Khassawneh, & Parveen, 2023) have found that environmental training and communication, as well as environmental leadership, positively influence employee pro-environmental behavior (Robertson & Barling, 2013; Sabokro, Masud, & Kayedian, 2021). The attitudes and behavior of employees are often reflective of the organizational practices they encounter. As such, when an organization demonstrates a commitment to green initiatives, it can lead to a trickle-down effect in employee behavior. Thus, a hypothesis can be proposed as follows:

H1: GHRM practices positively impact green behavior of employee.

H2: GHRM practices positively impact work performance of employee.

Employee Green Behavior and Employee Performance

It can be postulated that employees who demonstrate pro-environmental behavior, also known as green behavior, are more likely to exhibit higher job performance compared to those who do not exhibit such behavior. This is because the adoption of green behavior is expected to boost employees' motivation, well-being, and job satisfaction, leading to an increase in performance (Dobers, 2009; Kim & Park, 2019). Additionally, organizations that endorse green behavior may have a positive impact on employees' attitudes, which in turn may lead to greater job satisfaction and better job performance (Choi & Oh, 2019; Robertson & Barling, 2013). Consequently, the following hypothesis may be formulated:

H3: There is a correlation between employee green behavior and employee performance.

The Moderating Role of Environmental Knowledge

The objective of GHRM practices is to encourage ecologically sustainable behavior among employees. Past research has shown that GHRM practices have a positive impact on employee green behavior (Renwick et al., 2013). However, the response to Green HRM practices may differ among employees. The level of environmental knowledge possessed by employees may have a significant influence on the efficacy of GHRM practices. Several studies have reported a positive correlation between environmental knowledge and pro-environmental behavior (Fawehinmi, Yusliza, Mohamad, Noor Faedah, & Muhammad, 2020; Yong, Yusliza, & Fawehinmi, 2020). Employees with greater EK are expected to show environmentally sustainable behaviors. Consequently, the value of GHRM practices in enhancing employee's green behavior may depend on the level of environmental knowledge held by employees.

Numerous studies have revealed a correlation between environmental knowledge and pro-environmental behavior (Ahmad et al., 2021; Fawehinmi et al., 2020; Yong et al., 2020) describing that people with greater environmental knowledge are tended to engage more in environmentally sustainable behavior. Consequently, it is plausible that the degree of environmental knowledge possessed by an employee could impact the effectiveness of GHRM practices in promoting green behavior. Considering the literature, we propose the following hypothesis:

H4: The association between GHRM and employee green behavior is moderated by the level of environmental knowledge among employees.

Employee Green Behavior as a Mediator in the Relationship between GHRM and Employee Performance

GHRM practices aim to encourage environmentally sustainable behavior among employees, and research has shown that these practices have a direct impact on employee performance (de Oliveira et al., 2012; Yusliza, Othman, & Jabbour, 2017). However, the precise mechanism through which GHRM policies influence employee performance remains unclear. Previous studies have suggested that there is a correlation between employee green behavior and work performance (Chen et al., 2018; Liao et al., 2016). This may be because employees who engage in environmentally responsible behavior may also exhibit other positive work behaviors, such as punctuality and dependability. Therefore, it is plausible that the association between GHRM and employee performance can be mediated by employee green behavior. The literature also highlights the significance of employee green behavior as a mediator of the relationship between GHRM practices and employee performance.

Research indicates that employee green behavior can positively affect both company sustainability and employee performance. For example, Chen and Chen (2018) found a positive correlation between employee green behavior, job performance, and job satisfaction. Additionally, Kim, Park, and Lee (2017) found that employee green behavior can mediate the association between GHRM practices and organizational civic behavior, which ultimately improves organizational performance. Drawing from the existing literature, we propose the following hypothesis:

H5: EGB will mediate in the association between GHRM and employee performance.

Hypothesized Framework

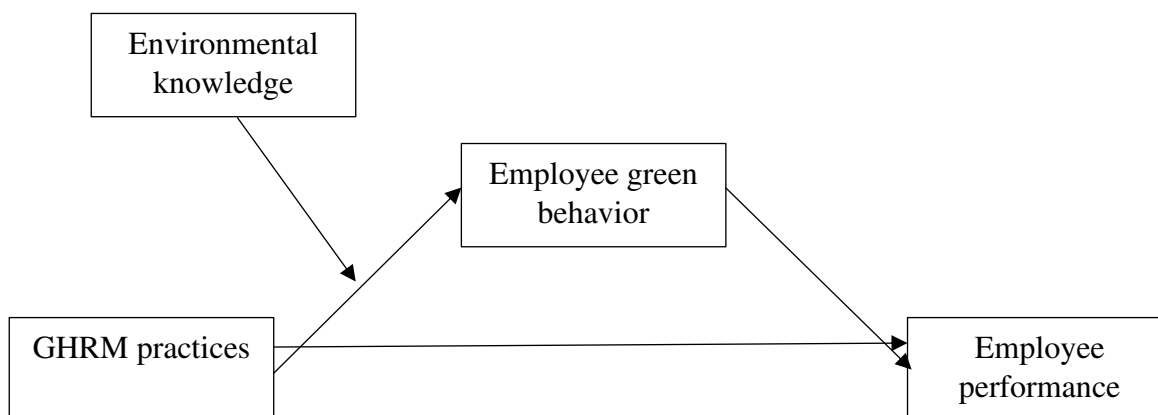


Figure 1: Research Framework

Research Methods

The main purpose of this research is to investigate whether green HRM initiatives affect employee performance, considering the moderator of EK and the mediator of EGB, therefore a quantitative research design was employed, and data collected through questionnaires distributed to employees in the banking sector of Pakistan.

Sample and Data Collection

The current study utilized a convenience sampling approach to select its sample. It consisted of 459 participants at the officer level (minimum OG-III) from the banking industry in Pakistan. The

eligibility criteria required participants to have at least six months of work experience in their current organization and familiarity with green HRM practices.

Data collection for this study was conducted via an online survey, which was administered in two phases. During the first phase, participants received an email containing a cover letter outlining the study's objectives and a link to the survey. In the second phase, non-respondents were sent a reminder email with a link to the survey.

Measure of Variables

The construct of green HRM was measured in this study using a scale developed by Dumont, Shen, & Deng (2017), consisting of six items that were adapted and modified for the present study. The scale has previously been used and validated in a study by Liu, Mei, and Guo (2021). Employee green behavior was measured through a scale comprising of six-items by Bissing-Olson et. al. (2013), and Cronbach's alpha coefficient, of the adopted scale was found 0.79 in this study. The study utilized Fawehinmi et al. (2020) four-item scale of environmental knowledge, with a Cronbach's alpha coefficient of 0.87. Finally, employee performance was measured using a six-item scale developed by Nishii, Lepak, and Schneider (2008). The items having internal consistency below 0.5 were deleted before the final analysis.

Results and Analysis

The measurement model was analyzed in Smart PLS v 4.0 by through reliability and validity tests based on the criteria suggested by Hair et al. (2011). In Figure 2, measurement model indicates individual item reliability and internal consistency. Convergent validity is established when the average variance extracted (AVE) exceeds 0.5, as suggested by Hair et al. (2011). According to the results provided in Table 1, values greater than 0.5 indicate satisfactory convergent validity.

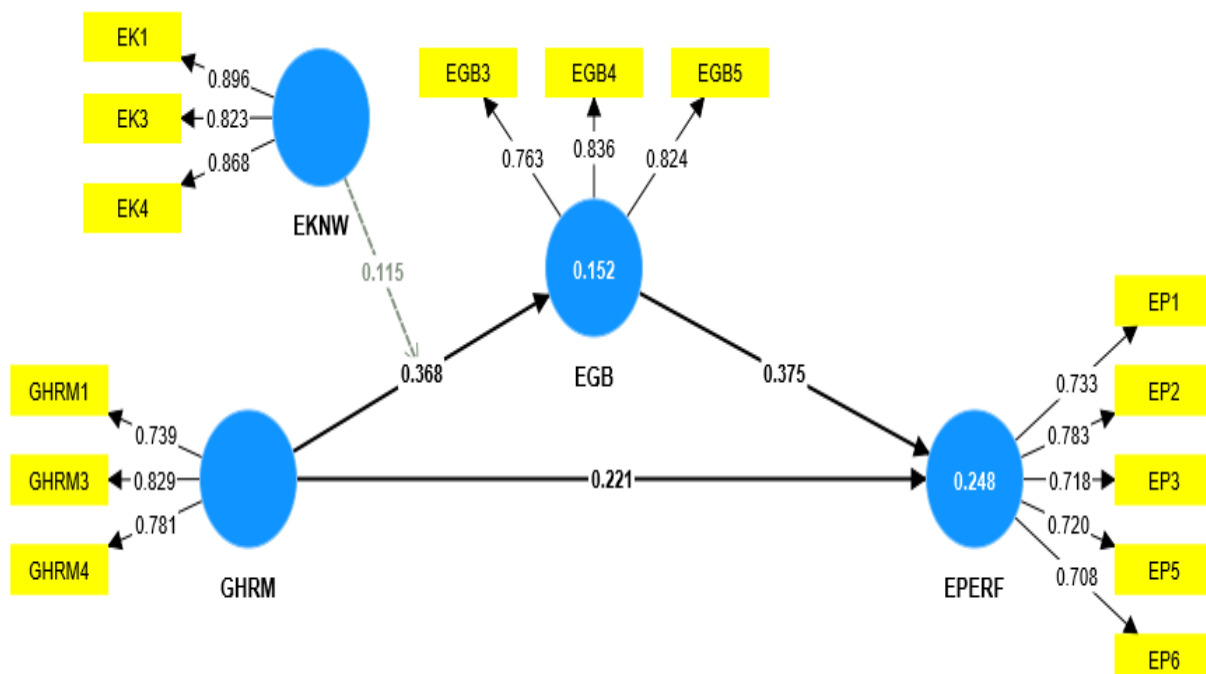


Figure 2: Measurement Model

Convergent Validity	Items	Loadings	Cronbach`s Alpha	Composite Reliability	AVE
Green HRM			0.686	0.827	0.614
	GHRM1	0.739			
	GHRM2	***			
	GHRM3	0.829			
	GHRM4	0.781			
	GHRM5	***			
	GHRM6	***			
Employee Performance			0.786	0.853	0.537
	EP1	0.733			
	EP2	0.783			
	EP3	0.718			
	EP4	***			
	EP5	0.720			
	EP6	0.708			
Environmental Knowledge			0.850	0.897	0.745

	EK1	0.896			
	EK2	***			
	EK3	0.823			
	EK4	0.868			
Employee Behavior	Green		0.734	0.849	0.653
	EGB1	0.896			
	EGB2	***			
	EGB3	0.823			
	EGB4	0.868			
	EGB5	***			
	EGB6	***			

Table 1: Convergent validity

Discriminant validity evaluates the degree of distinction between constructs, which was assessed in this study using the Fornell and Larcker (1981) criterion. The degree of discriminant validity was measured by using the HTMT ratio, as shown in Table 2, and by examining the values in Table 3, which depict the Fornell-Larcker criterion. Both tables indicate that the AVE value is greater than the correlations of each construct, indicating significant differentiation between the constructs.

Table 2 and Table 3 provide insight into the interrelationships among the variables studied in this research, including Green HRM, employee green behavior, environmental knowledge, and employee performance. These tables reveal the associations that exist among the constructs, which are crucial to understanding the impact of Green HRM practices on employee performance through environmental knowledge and employee green behavior.

Discriminant Validity – HTMT Ratio	EGB	EKNW	EPERF	GHRM
EGB				
EKNW	0.128			
EPERF	0.583	0.087		
GHRM	0.498	0.069	0.474	

Table 2: Discriminant validity HTMT ratio

Discriminant Validity – F&L Criterion	EGB	EKNW	EPERF	GHRM
EGB	0.808			
EKNW	0.112	0.863		
EPERF	0.453	0.08	0.733	
GHRM	0.356	-0.012	0.354	0.784

Table 3: Discriminant validity F & L criterion

Structural Model Assessment

Once the validity has been established using a measurement model, the next step is to assess the Structural Model. The Structural Model tests hypotheses by analyzing the direct relationship between the dependent and independent variables. Path coefficients have been analyzed using PLS-SEM shown in Figure 3. The significance of the relationships between the hypotheses was examined through the bootstrapping procedure.

Hypothesis Testing

The results indicate that the association between Green HRM practices and employee green behavior (EGB) is significant and positive (β . 0.368; $t=12.06$; $p>0.01$). Hence, the first hypothesis (H1) is supported. The second hypothesis (H2) is also accepted, as there is a significant and positive

association between employee green behavior (EGB) and employee performance (β . 0.375, $t=7.799$; $p<0.01$). The third hypothesis (H3) is also supported, as there is a significant and positive association between green HRM practices (GHRM) and employee performance (EPERF) (β . 0.221, $t=5.736$; $p<0.01$). The results also revealed a significant role of environmental knowledge as a moderator in strengthening the relationship between green HRM practices and employee green behavior in such a way that the relationship will be stronger if employees are having more environmental knowledge, hence accepting the Hypothesis 3 (H3) ($\beta=0.115$; $t=2.802$; $p<0.005$), which supports the third hypothesis (H4). The relevant results can be seen in Table 4 above.

		Standard Beta	T Value	P Value	Decision
H1	GHRM -> EGB	0.368	12.063	0.00	Supported
H2	EGB -> EPERF	0.375	7.799	0.00	Supported
H3	GHRM -> EPERF	0.221	5.736	0.00	Supported
H4	EKNW x GHRM -> EGB	0.115	2.802	0.005	Supported
GHRM=Green HRM practices, EGB=Employee green behavior, EPERF=employee performance, EKNW=Environmental Knowledge					
Notes: ** $p<0.01$, Results are significant where: T values > 1.96 (p values < 0.01)					

Table 4: Hypotheses testing- Direct path

Specific Indirect Results: Mediation

The findings also supported the H5, revealing the full mediation of EGB in the association between GHRM and EPERF (β . 0.138; $t=6.591.842$; $p<0.01$). further, moderated mediation is also significant (β . 0.043; $t=2.63$; $p>0.01$). The relevant results can be seen in Table 4 above.

		Standard Beta	T Value	P Value	Decision
H5(a)	GHRM x EKNW -> EGB -> EPERF	0.043	2.63	0.009	Supported
H5(b)	GHRM -> EGB -> EPERF	0.138	6.591	0.000	Supported

Table 5: Specific indirect analysis

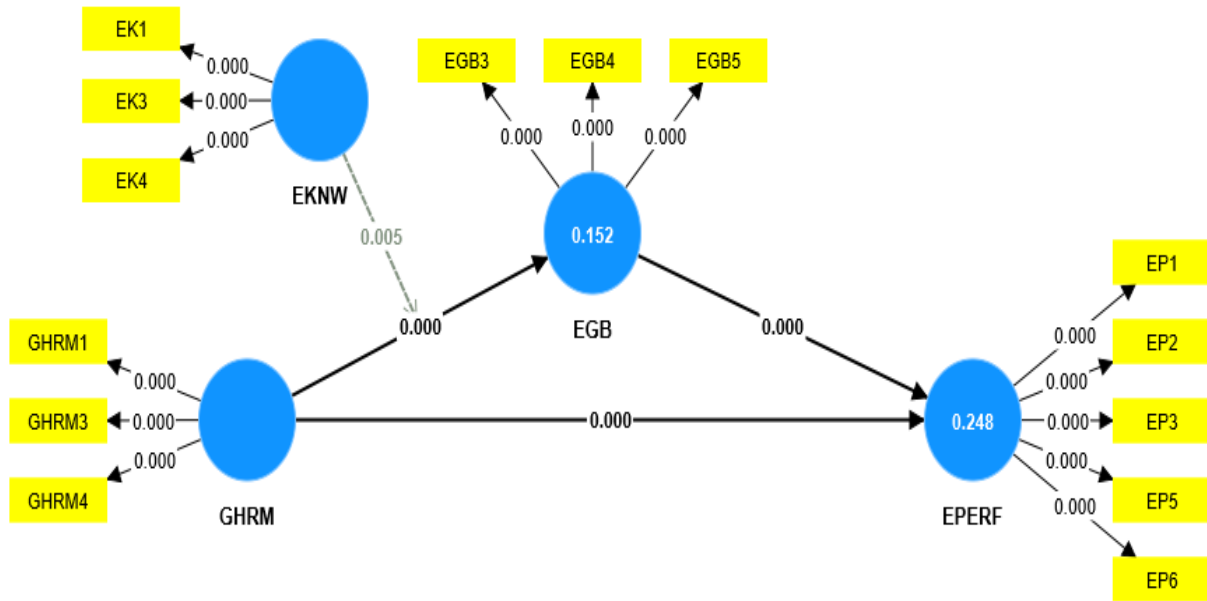


Figure 3: Structural Model

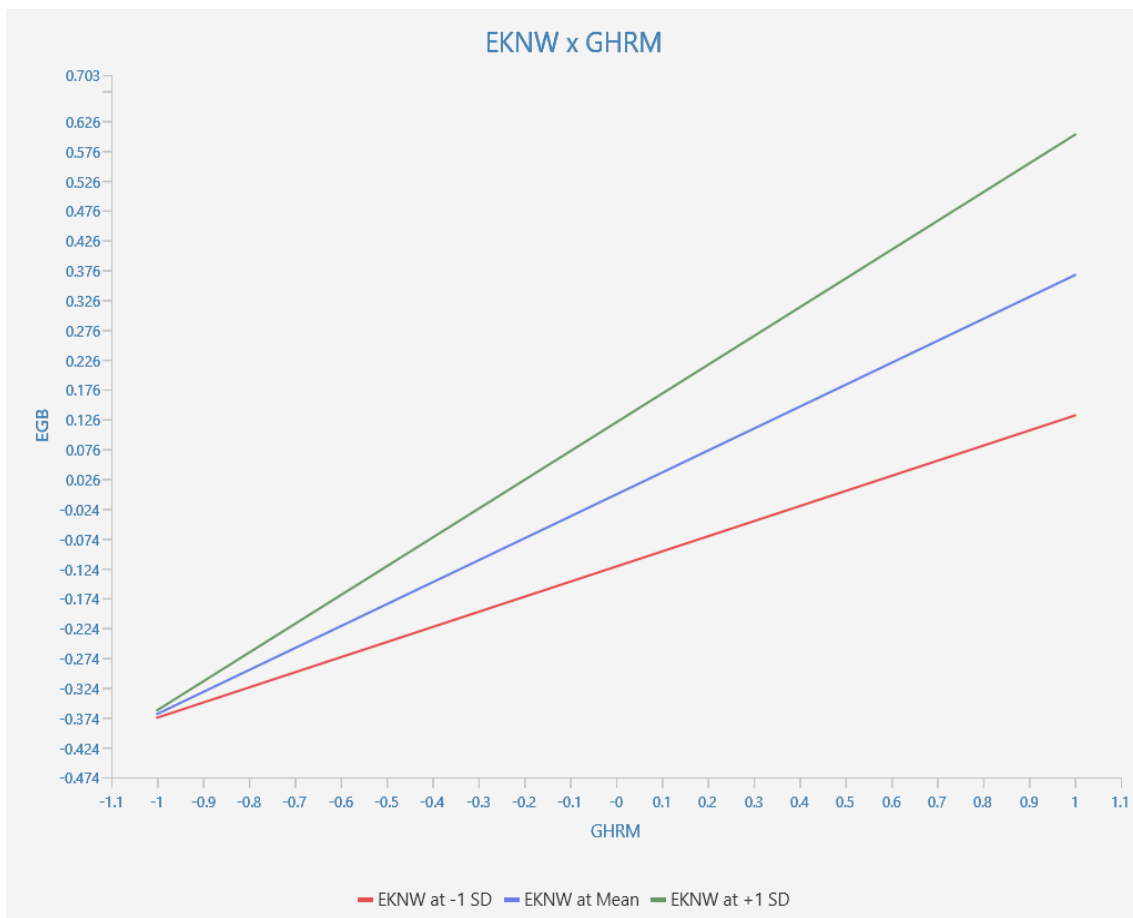


Figure 4: Simple slope analysis

Discussion & Conclusion

Green human resource management (HRM) practices have gained significant attention from scholars and practitioners due to their potential to improve employee green behavior and organizational performance. These practices are designed to promote environmental sustainability in the workplace by integrating environmental considerations into HR policies and practices. However, the effectiveness of these practices is influenced by various factors, including employees' environmental knowledge. This research article investigates the impact of green HRM practices on employee green behavior and employee performance, with a focus on the moderating role of environmental knowledge.

The results of hypotheses testing clearly shows that green HRM practices significantly impact the green behaviour of employees which ultimately impacts the employee work-related performance. The study shows that green HRM practices significantly influence employee green behavior and employee performance. Further, results indicate that employees who perceive that their organization values environmental sustainability are more expected to engage in green behaviors, such as reducing waste and conserving energy. The research findings are consistent with the social exchange theory, which suggests that when employees perceive that their organization values their well-being, they are more likely to reciprocate by engaging in behaviors that benefit the organization. Therefore, organizations that implement green HRM practices are likely to promote a culture of environmental sustainability that encourages employees to engage in green behaviors, leading to improved employee performance.

Furthermore, the study found that environmental knowledge moderates the relationship between green HRM practices and employee green behavior. Specifically, employees with high levels of environmental knowledge are more likely to engage in green behaviors, even when their organization does not value environmental sustainability. This finding suggests that organizations can enhance the effectiveness of their green HRM practices by providing environmental education and training to their employees. By enhancing employees' environmental knowledge, organizations can promote a culture of environmental sustainability that extends beyond the workplace and into employees' personal lives.

Conclusion

In conclusion, this research article demonstrates that green HRM practices significantly influence employee green behavior and employee performance, and that environmental knowledge moderates these relationships. The findings suggest that organizations can improve their performance and promote environmental sustainability by implementing green HRM practices and providing environmental education and training to their employees. Therefore, organizations should consider integrating environmental considerations into their HR policies and practices to promote a culture of environmental sustainability that benefits both employees and the organization.

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