Green HRM and Eco-friendly Behavior of Employees: The Mediating Role of Employee Organizational Commitment

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Abstract: *This study aims to find out the relationship between Green Human Resource Management (GHRM) and Employee Eco-friendly Behavior (EEB) and the mediating role of Employee Organizational Commitment (EOC) in this relationship. Presently, many issues of Green HRM have an impact on organizations, i.e., environmental idea-sharing programs, participation of employees in environment management, use of green performance indicators, and the use of functional teams to implement environmental plans and strategies. There is a positive trend among businesses to start reporting the performance of Green HRM. It has collected data from 242 employees of private commercial banks. A self-administered questionnaire has been distributed among the participants. It has used a bootstrapping procedure to estimate the path coefficient within reflective PLS-SEM. The findings of this research indicate that employee organizational commitment fully mediates the relationship between Green HRM and Employee Eco-friendly Behavior. It accentuates the application of green human resource practices to ensure employee organizational commitment that ultimately results in the environment-friendly behavior of employees*

Introduction

In the competitive business world, environmental sustainability has become a buzzword in recent years. It encourages businesses to implement environmentally friendly procedures. Therefore, the HRM discipline has shifted toward "green human resource management." The Green HRM process focuses on the integration of green practices into the traditional HRM processes of talent acquisition, compensation, employee development, and advancement of the organization's workforce (Mathapati, 2013). It consists of all initiatives to support an organization's environmental management agenda to enable carbon emission reduction and carbon credit generation (Prasad, 2013).

It is an essential component of green HRM that, when implemented, affects the employees' overall eco-friendly behavior inside a business (Fahim et al., 2019). Employee support for sustainable practices is crucial, and environmental performance depends on their dedication (Paille et al., 2014). To create a sustainable workplace, organizations need to comprehend the association

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between Green HRM initiatives, eco-friendly behavior of employees, and organizational commitment (see Figure 1).

Organizational commitment is a psychological state (Dale & Fox, 2008) that shows how much employees identify with a specific firm, its objectives, and their desire to maintain employment relationships with that firm (Robbins & Coulter, 2018). It is significant for organizational collective behavior and employee job performance (Chun et al., 2013; Wright & Boswell, 2002). It has been explored in various studies that organizational commitment increases job satisfaction and citizenship behavior in the workforce. Information about the association between employee green behavior and organizational commitment is limited.

By examining the effect of Green HRM policies on the ecological behavior of employees, this research aims to bridge the gap. Firms can develop strategies to encourage sustainable behaviors and programs among their workers by looking at the underlying linkages through which GHRM efforts impact employees' green behavior. Besides this, a complete understanding of the influence of Green HRM on the organizational commitment of employees will explore constructive insights into the psychological processes that link the GHRM initiative to employees' green behavior.

Figure 1: *The Research Framework*
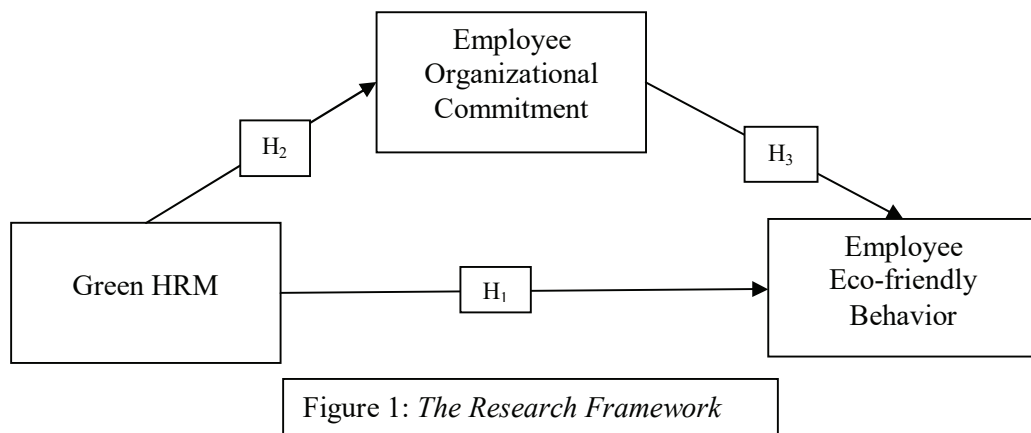
1.1 Theoretical Background

Social identity theory (SIT) is an interactionist social psychological concept of the role of self-conception and associated social beliefs (Hogg, 2016). It provides a framework to describe intergroup behavior grounded on the inherent value persons place on social group involvements (Harwood, 2020). It states that individuals derive their social identity based on the groups they belong (Scheepers, 2019). It assists in explaining the association between a firm and its employees. Peterson (2004) argues that personnel who have a positive perception of the social responsibility of businesses demonstrate a positive relationship between organizational citizenship behavior and employee commitment. Similarly, staff with positive insights into environmental management practices are expected to show a high level of organizational commitment (Yen et al., 2013). Besides this, STI suggests that organizational commitment has a positive connection with behavior (O'Reilly, & Chatman, 1986).

2. Literature review

2.1. Green Human Resource Management

According to Martnez-del-Ro et al. (2012) and Renwick et al. (2013), "green human resource management" (GHRM) is an umbrella term that comprises a variety of people-centered strategies that place a high priority on the enhancement and maintenance of employees' skills, motivation, and opportunities. The notion of green HRM is multidimensional in nature and composed of multiple groupings of best activities (Renwick et al., 2013; Tang et al., 2018). These GHRM best practices cover a variety of HRM tasks, including eco-friendly hiring and selection procedures, green performance reviews, empowering and involving staff in environmental issues, implementing green reward programs, fostering green communication, and encouraging teamwork in support of sustainability objectives (Renwick et al. 2013, Jabbour et al. 2010). Implementation of sustainable environmental strategies may be viewed as an emergent bottom-up process within a firm (Dangelico, 2015). There are two categories of obstacles that hamper GHRM implementation: individual and organizational obstacles. Individual barriers may include a lack of ecological consciousness, limited knowledge of sustainable practices, social norms that do not prioritize sustainability, and time constraints. On the other hand, organizational obstacles may include an absence of commitment and support from management toward ecological issues, nongreen corporate values, and inadequate communication regarding sustainable practices (Yuriev et al., 2018).

2.2. Eco-friendly Behavior

Steg and Vlek (2009) define eco-friendly behavior as any action that either reduces harm to the natural environment or benefits it in some way. It encompasses a broad range of behaviors that individuals can engage in to promote ecological sustainability. According to Alharazin et al. (2020), eco-friendly activity can include both in-role behavior and extra-role behavior. Green activities that are related to an employee's performance appraisal are referred to as in-role environmentally friendly conduct. Contrarily, extra-role eco-friendly conduct describes voluntarily taking eco-friendly measures that are not mandatory and that are not specifically included in an employee's performance appraisal (Aboramadan & Karatepe, 2021). It involves various actions such as utilizing teleconferencing to reduce the need for travel to optimize resource utilization, opting for electronic document editing to avoid wastage, switching off lights before leaving an office to conserve energy, promptly reporting bathroom leaks to conserve water, and using scrap paper to print draft copies to promote recycling (Norton et al., 2015).

2.3. Employee Organizational Commitment

According to Dale and Fox (2008), organizational commitment is a mental or psychological condition that characterizes a staff's relationship with the firm and influences their decision to continue membership. Meyer and Allen (1991) distinguished between three different organizational commitment factors that represent a necessity (continuance commitment), a desire (affective commitment), and a duty (normative commitment) to continue working for the company. Each element has a varied effect on how employees behave while working. The degree

of organizational commitment of an individual is generally acknowledged to have a substantial impact on their attitudes and behavior at work. Strong organizational commitment among employees can have advantageous effects for both the organization and the individual employee (O'driscoll et al., 2006;Riketta& Dick, 2005).

2.4 Green HRM and Employees' Eco-Friendly Behavior

Environmental preservation and sustainability have recently been top priorities for businesses. Organizations are now seeking management practices and business operations that are environmentally sustainable. One approach to achieving this environmental sustainability is by more consistently and frequently involving employees in environmentally conscious actions (Cheema et al. 2019, Saeed et al. 2019). Employees are more likely to engage in green activities when green HRM practices like green training and rewarding green conduct are adopted (Shen et al. 2018). Green HRM within the firm has an impact on the workforce's pro-green actions (Dumont et al., 2017).

As an HR-friendly initiative, GHRM reduces costs, increases efficiency, and improves employee engagement. HRM is considered crucial in fostering employee awareness, which leads to businesses functioning sustainably. The implementation of GHRM practices encourages employees to be involved in eco-friendly activities, leading to collective environmentally friendly behavior in the entire organization (Fahim et al., 2019). Employee understanding of the requirement and urgency to adopt such measures is critical to the effectiveness of GHRM techniques in promoting proper behaviors in the workplace (Dumont et al., 2017). The author of this study suggests the following hypothesis based on the discussion above:

H_1: Green HRM practices have a positive impact on employee eco-friendly behavior.

2.5 Green HRM and Organizational Commitment

The GHRM initiatives foster the commitment of the workforce by creating multiple lines of contracts and facilitating interaction between the organization and employees (Deepti & Anu, 2020). When employers are seen as environmentally friendly in their offers and operations, employees are more likely to adopt sustainable and green behaviors (Likhitkar & Verma, 2017). Besides this, the commitment of employees to the employer increases when their active participation in green activities fulfills their psychological and social needs to protect the environment (Das & Singh, 2016). The reason for this result is that employees working in eco-friendly organizations must modify their principles, mindsets, and attitudes to align with the organization's green objectives and culture (Pinzone et al., 2016).

Providing environmental training to employees gives them environmental understanding and assists them in adopting eco-friendly attitudes and skills. As a result, employees demonstrate a long-term commitment to the environment of the workplace (Perron et al. 2006). According to Ren et al., (2018); green rewards as a form of compensation can boost employee environmental commitment. Yen et al. (2013) concluded that environmental management techniques

significantly affect how committed employees are to their organizations. The current study's proposed hypothesis is the following, which is based on the literature review:

H_2: GHRM has a significant impact on employee organizational commitment.

2.6 Organizational Commitment and Employees' Eco-friendly Behavior

According to Awan et al.'s study (2022), there is a significant correlation between employees' organizational commitment and their eco-friendly behavior. Kim et al. (2019) discovered that employees' perceptions of green HRM initiatives in their workplaces typically increased their engagement with the organization. This study concluded that employing green HRM strategies significantly increases the organizational commitment of the workforce. Ng and Feldman (2011) investigate a favorable relationship between affective commitment and organizational citizenship behavior using a meta-analytical approach. According to Ly (2023), employee organizational commitment is required for employee engagement in pro-green conduct within the organization. Based on past research, the author anticipates that employees with strong organizational commitment have a propensity to engage in a high level of green action. As a result, the authors suggest the following hypothesis:

H_3: Employee organizational commitment has a positive impact on employee eco-friendly behavior.

2.7 Mediating Role of Organizational Commitment

According to the aforementioned reasons, it can be posited that commitment is an important component of the organization and may have the ability to mediate the relationship between Green HRM and EEB (Figure1). The previous study suggests that GHRM may affect employee organizational commitment (Deepti & Anu, 2020), which may then affect employee environmental behavior (Awan et al.'s study, 2022). As a result, the following theory is put forth:

H_4: EOC mediates the relationship between green HRM and EEB.

3. Methodology of the Study

3.1 Data Collection

In Bangladesh, forty-six private commercial banks have formed a green banking unit (Millat et al., 2011). Among these, thirty private commercial banks have been selected for data collection (Rubel et al., 2021). The sample was taken under the following two sets of conditions: 1) The participants are full-time employees working for at least one year in their current organization. 2) The participants who have worked in private commercial banks in Dhaka City (Rubel et al., 2016). Full-time employees were considered for this study because of their commitment to the banks. According to Conway and Briner (2002), psychological contracts and employment status may have an impact on the attitudes that separate part-time employees from full-time employees.

3.2 Sampling Technique

To gather primary data for this research, a non-probability purposive sampling strategy was used (Rubel et al., 2021; Fahim et al., 2019). The non-probability sampling technique provides meaningful and valid results in behavioral science studies or field research (Memon et al., 2017). In the purposive sampling method, the respondents' overall perceptions are quite similar within the organization. As a result, the study might choose samples according to the author's judgment and the participants' willingness (Azhari &Pritasari, 2022). Additionally, the non-probability sampling technique is applicable in the case of an unknown population (Salman & Hassan, 2020).

3.3 Sample Size

This study has selected the banking industry of Bangladesh to conduct the questionnaire survey. The author has sent 350 questionnaires to the employees of private commercial banks through e-mail (Hameed et al., 2020; Zahid et al., 2019). Among these, 242 employees completed their survey with a completion rate of 69.143% (Kim et al., 2019).This rate is slightly higher than recent Neuza et al., 2022 research. The demographic profile of the 242 respondents to this study is summarized in Table 1 below (Kim, 2019). In the final sample, nearly 76.4 percent of respondents were male. There were more than half (52.48%) of respondents who were under 30. Most participants (61.57%) are married.

3.4 Questionnaire Design

To identify exogenous and endogenous variables, this study adopted 19 questions from various established scales (Rubel et al., 2021). Five sections make up the online questionnaire (Kim, 2019).The general rules and declarations relating to the confidentiality of data are included in the first section. The second part contains the demographic information of the respondents. The next three parts contain questions regarding GHRM, employee eco-friendly behavior, and employee organizational commitment respectively (Zahid et al., 2019).

3.6 Measurement

The author composed the questionnaire in the English language (Kim, 2019). Each component of the GHRM, EEB, and EOC variables was measured using a Likert-type scale with responses ranging from "strongly agree (5)" to "strongly disagree (1)" (Ribeiro et al., 2022; Kim, 2019).

3.6.1 GHRM

Based on information from Del Brío et al. (2007), Zibarras and Coan (2015), Spreitzer et al. (2005), Govindarajulu & Daily (2004), Remmen & Lorentzen (2000), and Dumont et al. (2016), the author adopted the six-item scale for green HRM. The test items included "My organization recruits' employees who have environmental awareness." "My organization uses green performance indicators in the performance management system." "My organization fosters employee participation in environmental management."

3.6.2 EEB

The author adopted the seven-item EEB scale from Angle & Perry (1981) and Sumardjo & Supriadi (2022). The sample items were "I have a responsibility to conserve energy." "I switch off the lights when I leave my office for a considerable period." "I use natural ventilation as much as possible."

3.6.3 EOC

The six-item EOC scale was adopted from Fawehinmi et al. (2020), Hsiao et al. (2014), Chou (2014), and Scherbaum et al. (2008). The survey's sample items were "I care about the fate of this organization," "I find that my values and the organization's values are very similar," and "I think of my colleagues at the company as a new family."

3.7 Data Analysis and Presentation

Data analysis and hypothesis testing were done using the PLS-SEM statistical analysis tool (Kim et al. 2019).The respondents' demographic data has been examined using MS Excel.

Table1: Distribution of Respondents

Demographic Characteristics		Frequency	Percentage
Gander	Male	185	76.4
	Female	57	23.6
Age	30 Years or Less	127	52.48
	41 to 35	54	22.31
	36 to 40	36	14.88
	Above 40	25	10.33
Marital Status	Married	149	61.57
	Unmarried	93	38.43

4. Analysis

4.1 Evaluation of the Measurement Model

Within SEM, a two-phase approach is frequently employed, with the first step consisting of a thorough assessment of the measurement model (Anderson & Gerbing, 1988). The integral phase of SEM analysis is crucial as it examines the reliability issues of latent constructs with their accompanying items within the designed PLS-SEM model along with validity assessment. (Hair Jr., 2021).

Reliability

The concept of reliability involves the assessment of internal consistency. The high reliability of a measure is characterized by its capacity to consistently yield the same outcomes in similar settings (Hair Jr., 2021; Roberts & Priest, 2006). For assessing the construct reliability this study

has utilized Cronbach's Alpha with Composite Reliability (CR). The commonly accepted value of Cronbach's Alpha (Forero, 2014) and CR (Hair, 2010) is often defined at or above 0.70. In order to avoid duplication of indications that may compromise the content validity, it is recommended to refrain from surpassing a threshold of 0.95 (Diamantopoulos et al., 2012).

Table 2: Reliability Test for Construct

	Cronbach's alpha	CR (rho_a)	CR (rho_c)
GHRM	0.834	0.845	0.878
EOC	0.784	0.786	0.853
EEB	0.829	0.872	0.865

The findings from the table demonstrate that the measurement model exhibits a reasonable degree of reliability for all the constructs being examined, as indicated by the values surpassing the threshold of 0.70 for both Cronbach's Alpha and CR (rho_c). Moreover, CR (rho_a) falls within the range of Cronbach's Alpha and CR (rho_c). Thus, the result provides evidence for the strength and reliability of the measurement model. It affirms that each underlying construct is consistently and accurately measured.

Convergent Validity

The degree to which the items of a latent construct exhibit strong correlations or convergence with one another is known as convergent validity. (Hair et al., 2022). It is considered to be established when the average variance extracted (AVE) surpasses the threshold 0.50 (Hair Jr., 2021). Hair et al. (2022) suggested eliminating items with low factor loadings if it considerably increases the AVE value. In this research, two items were dropped to attain a satisfactory AVE value.

Table 3: Convergent Validity

	Average variance extracted (AVE)
GHRM	0.548
EOC	0.538
EEB	0.521

The result of this analysis establishes the convergent validity for the constructs used in this study by surpassing the minimum acceptable value of 0.50 for each cases.

Assessment of Discriminant Validity

According to Heseler et al. (2015), discriminant validity shows that each component in the research is unique and not disproportionately related to other constructs. In order to determine discriminant validity the Heterotrait-Monotrait (HTMT) Ratio and the Fornell and Larcker Criterion have been evaluated for this paper.

Fornell and Larcker criterion

The Fornell and Larcker Criterion posits that discriminant validity is deemed to be achieved when the square root of the AVE for a specific construct surpasses its correlation with all other constructs (Fornell & Larcker, 1981).

Table 4: Fornell-Larcker Criterion

	GHRM	EOC	EEB
GHRM	0.740		
EOC	0.248	0.733	
EEB	0.133	0.434	0.722

This table provides evidence that the constructs being examined exhibit satisfactory discriminant validity, as indicated by the fact that the square root of the AVE for each construct is higher than its correlation with other constructs.

Heterotrait-Monotrait (HTMT) Ratio

This paper desires to investigate the HTMT ratio as a means of establishing validity in response to the concerns raised by Fornell and Lacker Criterion regarding the constraints of lower specificity and sensitivity rates (Fornell & Larcker, 1981). According to Henseler et al. (2015),the value HTMT ratio should never be higher than 0.85 for ensuring discriminant validity.

Table 5: Heterotrait-monotrait ratio (HTMT) - Matrix

	GHRM	EOC	EEB
GHRM			
EOC	0.302		
EEB	0.227	0.467	

The HTMT values in the above table are found to be below the threshold of 0.85, denoting that the latent constructs being examined are genuinely distinct and unique from each other. The measuring model demonstrates both reliability and high evidence of validity, enhancing its credibility and establishing a robust basis for further research analysis.

4.2 Structural Model Assessment

The analysis of the study was conducted using a structured approach. It first confirmed the validity and dependability of the constructs. Furthermore, it has employed Partial Least Squares Structural Equation Modeling (PLS-SEM) to assess the structural model and ascertain the path coefficient's relevance. To assess the study hypotheses, a bootstrapping approach using 10,000 sub-samples was carried out. The significance test was designed as a two-tailed test with a predetermined of 0.05 significance level. (Becker et al., 2023; Efron & Tibshirani, 1994; Hair et al., 2022).

As presented in the aforementioned Table 6, the results indicate that hypotheses 2 and 3 were supported. Specifically, the study revealed that GHRM has a positive impact on EOC having statistically significant relationship also (β = 0.248, t= 3.653, p< 0.05) at a 95% confidence level. Similarly, there is a strong and favorable correlation between EOC and EEB.Thus EOC exhibits a positive and significant impact on EEB (β = 0.427, t = 6.683, p< 0.05). However, it is noteworthy that the data did not support hypothesis 1. The study did not reveal any significant relationship between GHRM and EEB (β = 0.027, t =0.301, p = 0.382). This study employed the R^2 value for the dependent variable to indicate the strength of each structural route and the model's soundness (Briones Peñalver, Bernal Conesa, & de Nieves Nieto, 2018), and this value needs to be at least 0.1 (Falk and Miller,1992). In this study, EEB had an R^2 value of 0.589. It suggests that the GHRM and EOC can account for 58.9% of the variation in EEB and the R^2 value of the EOC is 0.18. Therefore, the R2 value suggests that the proposed research model has substantial explanatory power (Cohen, 1988). Finally, the Q2, used in this study, also demonstrates the endogenous components' predictive relevance. For this work, Q2 greater than 0 (which is 0.044 for EOC and 0.095 for EEB) validates the satisfactory' predictive relevance of the model.

Table 6: Direct-Path Effect Hypothesized Model

Path	β	SM	SD	t	P values	Decision
GHRM -> EEB	0.027	0.024	0.090	0.301	0.382	NS
GHRM -> EOC	0.248	0.260	0.068	3.653	0.000	S
EOC -> EEB	0.427	0.436	0.064	6.683	0.000	S

Notes: β = Standardized regression coefficients, t>1.96 at * p<0.05; t>2.58 at **p<0.01; t>3.29 at ***p<0.001; two-tailed test; Supported (S), Not Supported (NS), SM=Sample mean, SD=Standard deviation.

4.2.1   Mediation Effect of Employee Organizational Commitment

For the evaluation of the mediating function of EOC, mediation analysis was done. The results (see Table 7) demonstrates a significant indirect effect of GHRM on EEB through EOC (p <.05) (H_4: β = 0.106, t = 3.276, p = 0.001<.05). The total effect of GHRM on EEB is insignificant (β = 0.133, t = 1.450, p = 0.074 >.05), and including the inclusion of the mediator, the effect of GHRM on EEB is still insignificant (β = 0.027, t = 0.301, p = 0.382>.05). This clarifies the full mediation (indirect only) of EOC between GHRM and EEB. Hence, H_4 was supported. That means the effect of GHRM will only pass through EOC toward EEB**.**

Table 7: Mediation Analysis Results

Total Effect(GHRM -> EEB)			Direct Effect(GHRM -> EEB)			Indirect Effect (GHRM -> EOC -> EEB)				
Co-ef-ficient	T-value	P-value	Co-ef-ficient	T-value	P-value	Co-ef-ficient	T-value	P-value	Percentile Boostrap 95% confidence interval	
									Lower	Upper
0.133	1.450	0.074	0.027	0.301	0.382	0.106	3.276	0.001	0.064	0.166

4. Discussion

The findings of the research presented here enriches the existing body of knowledge in a number of ways. The theoretical framework proposes a positive link between GHRM and EEB. Based on the social identity theory, the findings reveal that GHRM positively correlates with EOC. If the perception of bank employees in Bangladesh is positive, they tend to show a higher level of organizational commitment. The outcomes are like those of other research by Deepti & Anu (2020), Likhitkar & Verma (2017), and Yen et al. (2013). As it concludes that executing green HRM initiatives can contribute to fostering a sense of loyalty, engagement, and dedication among employees, this result has implications for organizations aiming to enhance employee commitment.

Second, this study found that employee organizational commitment has a positive impact on employee eco-friendly behavior. This finding is consistent with the previous results of Awan et al. (2022), Kim et al. (2019), Ng and Feldman (2011), and Ly (2023). When employees are allied with the organization's internal environment, they are interested in taking eco-friendly actions. Environmental practices like energy savings, turning off extra lights, minimizing unnecessary water use, using of natural ventilation, etc. are associated with organizational commitment. It has been observed that employees who are personally connected with the environment have a positive influence on their environmentally friendly behavior.

Thirdly, this study confirmed that employee organizational commitment fully mediates the relationship between green HRM and EEB. Employee organizational commitment to green initiatives has a significant impact on environment-friendly practices. Through green HRM initiatives and eco-friendly behavior, a firm can ensure organizational sustainability. So, the green HRM initiatives cannot be attributed solely to employees' green behavior. Employee commitment to environmental policy has a mediation effect on the green HRM and EEB relationship.

Finally, green HRM-related practices may not have had a substantial impact on EEB because environmentally friendly conduct may go outside the bounds of compulsory job duties and may not be rewarded based on performance appraisals. Put another way, by implementing green hiring, training, and performance evaluation practices in HRM, businesses communicate to staff

members the corporate culture and values that place a high value on environmental conservation. This changes staff members' perspectives on environmental issues and strengthens their EB. These circumstances can cause employees to actively exhibit eco-friendly behavior through employee commitment.

5. Conclusion

This study concluded from the results that green HRM initiatives and practices play an essential role in influencing the EEB through the mediation effect of the EOC. GHRM activities like eco-friendly recruiting, selection, compensation, training, and knowledge sharing have a substantial influence on the organizational commitment of bank employees. Employees of private commercial banks that follow green HR practices are conscious of nature conservation. They work to curtail the use of resources, including paper, water, power, and other natural resources. By examining these relationships, private commercial banks can develop strategies to promote sustainable actions among their employees. The findings provide insights into the psychological processes linking GHRM initiatives to environmentally responsible behavior.

Research Limitations and Future Directions

The research has some drawbacks that may be used as a starting point for future studies. Firstly, the study explores similar findings in the correlation between GHRM and the green behavior of bank employees. This conclusion could not apply to the other case study situations beyond the private commercial banks of Bangladesh. Second, this study does not consider the cultural differences of employees. Future research in various cultural contexts will be required to determine whether the study's findings are culturally unique or not. The study also opens an opportunity to keep looking for a link between employee organizational commitment and employee green behavior.

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