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Does Environmental Managerial Support Foster Green HRM in Actualizing Eco-Helping and Eco-Civic Engagement in the Banking Sector?

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ABSTRACT

Banking organizations are adopting green practices to mitigate their ecologically hazardous impacts. This study aims to investigate the effects of green human resource management (GHRM) on the least explored types of employee ecological behaviors: eco-helping and eco-civic engagement. It does this by drawing on the social exchange theory (SET) and the self-determination theory (SDT). Additionally, it looks at the effects of GHRM in the presence of environmental managerial support (EMS) as a conditional factor. Employing a purposive sampling approach, the research model was validated based on data from a judiciously chosen sample size of 875 respondents who worked for Pakistani Islamic banks, PLS-SEM was employed for conducting statistical analysis. The results revealed that both eco-helping and eco-civic engagement were positively impacted by GHRM, and eco-helping and eco-civic engagement associations with GHRM were positively moderated by EMS. One of a kind in its exploration of the conditional role of EMS on the integrated relationship of GHRM practices with eco-helping and eco-civic engagement, this study adds to the body of knowledge. It also provides evidence from the understudied Islamic banking sector, which is crucial to the transition of nations toward sustainable evolution. We anticipate that the findings of our research will provide both theoretical direction and management insight for services organizations seeking to apply GHRM practices.

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1. Introduction

A country's economy depends heavily on its banks; without them, economic activity would be completely stagnant (Octrina, 2026). Particularly, green banking challenges have been the subject of extensive global discussion in recent years. The transition to a low-carbon economy and climate change pose both direct and indirect risks to banks, but they also offer opportunities (Tekin, 2025). In their capacity as financiers, they help to make this change. Sustainability agendas are increasingly reshaping the financial services sector (Sharma & Rupeika-Apoga, 2025). Green human resource management (GHRM) enhances the sustainable performance of organizations (Alfadel et al., 2025; Faeni et al., 2025; Islam et al., 2025; Jerónimo et al., 2025; Lawter et al., 2025; Vadithe et al., 2025; Van Waeyenberg & Semeijn, 2025). At the same time, GHRM practices have a primary purpose in changing employee behaviour towards making the workplace environment greener (Miah et al., 2024). "Green HRM is the use of HRM policies to promote the sustainable use of resources within organizations and, more generally promotes the causes of environment sustainability" (Marhatta & Adhikari, 2013, p. 2). The idea of "the green" has helped the HRM implement green functions in various forms. GHRM is focused on ecological awareness enhancement, promoting environmentalism, and building cultures that are supportive of the management mandate (Ren et al., 2021). The issue itself is frequently associated with the question of employment policy and HR practices (Piwowar-Sulej, 2021). Social exchange theory (SET), which explains human behavior, can be used while analyzing the role of GHRM on employee green behaviour (EGB). Interactions in the social exchange system are viewed as being a role of two connected variables that arise due to the activity of the other and ground to a strong relationship (Cropanzano et al., 2017). Here, one begins the process of engagement when an employer integrates environmental awareness with human interaction by positively treating employees. This includes equipping them with resources such as knowledge, financial support, and professional growth through green-washed education, incentives, and promotions, respectively. Because of the staff's behavioral tendencies, they promote the ideal environmentally friendly behaviors. However, it should be noted that previous research has generated controversial evidence; for instance, by using data collected from Malaysian higher education institutions, Fawehinmi et al. (2020) failed to discover that GHRM had a positive impact on EGB. Similarly, in a similar regard, Ansari et al. (2021) and Sabokro et al. (2021) expanded efforts in establishing the fact that GHRM, in Pakistan and the Iranian context respectively, had an optimistic and direct impression on the EGB. The broad-based literature on this subject has primarily focused on the relationship between a single type of HR management practice and the EGBs (Ababneh, 2021). Additionally, the amount of research with empirical studies regarding the detriments of ecological feelings as green in-role behavior, extra-role behavior, or innovative behavior, are not considerable (Islam et al., 2021). Therefore, it is essential to probe the causes of green behaviors (Piwowar-Sulej & Kołodziej, 2022). To date, no study has comprehensively examined the crucial role of GHRM in predicting distinct variants of EGBs, such as eco-helping and eco-civic engagement, highlighting a significant gap in the literature that demands urgent scholarly attention. Gupta and Jangra (2024) argued that limited empirical studies has examined the specifics of how management support can enhance the already existing positive correlation between GHRM and work engagement, and recommended that future studies may use moderation variables to explain further the relationship between GHRM and employee outcomes. Jasim et al. (2025) encouraged researchers toward unexplored areas within the field of green behavior adoption research. To this end, the paper that follows aims to comprehend the tangential effects of GHRM on the eco-helping and eco-civic engagement of employees. It makes this an integrated approach, which is more relevant in the sense that it is better at explaining the contextual factors of positive attitudes of employees toward the environment. It is not only the organizations' use of GHRM systems that will lead to environmental improvements but also their incorporation into their internal processes (Ren et al., 2021). Alzubi et al. (2025) implied that it is imperative for banking managers to focus on cultivating an organizational culture that is open to new ideas and ideals and promotes innovation. Supervisors are also accountable for the line supervision of their workers, mild production, and workplace atmosphere. The workers (employees), through their actions, ought to generate a set of expected behaviors (Tuan, 2022). Ramus and Steger (2000) coined the term "environmental managerial support" (EMS). Cantor et al. (2012) define it as "the employee's belief that the supervisor provides subordinates with the resources and

feedback needed to participate in environmental initiatives" (p. 35). As Tuan (2022) emphasized, insufficient studies have been devoted to the issue of the contributing leader's care, focusing on the leaders' assistance exactly geared toward stimulating EGBs. The influence of EMS on EGBs is substantially determined by the self-determination theory (SDT), which talks of factors like work context or management styles boosting or impairing employees' motivation. SDT postulates that welfare, whether it is learning, autonomy, or relatedness, is the result of such factors as the need-motivating drives of employees (Deci & Ryan, 1985). EMS is aimed at the employees; therefore, it pertains to their needs (relatedness), which is the pivotal point of an HRM that improves and encourages employees' engagement (competencies) and decision-making (autonomy) related to pro-environmental solutions (Singh et al., 2020). Moreover, the EMS will go through GHRM, and eventually GHRM will unfold the effect of GHRM on EGBs. Consequently, no study like this has been conducted to logically tease out the implications of the use of EMS in modifying the links between GHRMs and EGBs (i.e., eco-helping and eco-civic engagement) relationships, as per the best knowledge of the authors. Therefore, this study further measures the degree of influence of EMS on relationships between "GHRM–EGBs." At this stage of the argument, it is worth stressing that the research has focused on the indirect effect of these facets by recognizing the centrality of GHRM to EGBs (Al-Ghazali & Afsar, 2021; Li et al., 2023). The majority of research has concentrated on direct reciprocal relationships without conditions, like individual green values (Li et al., 2023), environmental know-how (Saeed et al., 2019), or gender (Chaudhary, 2020). Understanding what moderators are, as revealed in the meta-analysis by Aguinis and Glavas (2012), greatly contributes to a clearer understanding of their roles in the relationship between GHRM and its outcomes. The role of GHRM in determining EGBs is thoroughly developed in the extant literature in the non-banking sector (Fawehinmi et al., 2024; Faezah et al., 2024; Khan et al., 2024) and commercial banking sector of Pakistan (Gul & Zafar, 2024; Iqbal et al., 2018; Iqbal, 2018; Kong et al., 2021; Rubel et al., 2021). However, Islamic banking organizations remained under-examined (Ali et al., 2022). Ben Jedidia et al. (2025) argued that there is a lot of potential for Islamic finance to help accomplish the Sustainable Development Goals. With consistent expansion in recent years, the Islamic banking industry has become one of the most advantageous sectors from the expanding Muslim population globally (Naz & Gulzar, 2022). Ali et al. (2022) argued that GHRM policies are also essential for Islamic banks because they promote work ethics, resource conservation, and responsibility, and are economical for society. Islamic cultural factors, particularly Islamic Work Ethics (IWEs), significantly influence the effectiveness of GHRM practices in promoting eco-friendly behaviors within the Islamic banking sector. IWEs, rooted in the Qur'an and Sunnah principles, emphasize values such as justice, charity, and honesty, which align with environmental stewardship (Salman & Ahmed, 2021). The findings of the study by Abbasi et al. (2012) also provided other Pakistani companies with advice on how to enhance organizational results by incorporating Islamic work concepts into their culture. Furthermore, Nasution and Rafiki (2019) discovered a positive and substantial correlation between the IWEs and organizational attitudes, such as dedication and job satisfaction, among Islamic bank employees. We will, therefore, concentrate on the area that is momentarily unfilled by analyzing the moderating effect that EMS takes on the connection between GHRM and EGBs (i.e., eco-helping and eco-civic engagement) in Islamic banking organizations. The study intends to determine: (1) the role of GRM in determining EGBs (i.e., eco-helping and eco-civic engagement), and (2) the moderating role of EMS between GHRM and EGBs.

In terms of theoretical contribution, this is also the first study to present the moderating relation between GHRM and eco-helping and eco-civic engagement through the interplay of EMS, thereby widening the research framework of GHRM affecting EGBs. This study addresses the questions raised by Jasim et al. (2025) by enhancing the understanding of how green behaviors can be effectively promoted and sustained. Secondly, the other purpose is to confirm the functionality of the two sets of theories, which are the SET and the SDT, by coming up with evidence that supports the idea that they are useful in explaining EGBs. As Fawehinmi et al. (2020) disclosed, the application of the blend of different theories to explain EGBs was only employed in a few research works. To get more clarity on the existing complex workforce relationship dynamics and their antecedents, a view through many lenses should be employed (Iqbal & Piwowar-Sulej, 2023a). Nguyen and Nguyen (2024) argued that volunteerism and readiness are essential components of business growth in the service sector. Thirdly,

the unique context of Islamic banking employees has been under-emphasized, and this study addresses that gap.

The rest of the article is divided into the following sections: The literature review provides a critical overview of the current state of research on a topic and proposes research hypotheses. The methodology outlines the execution of a research flowchart. The discussions continue to show how current results reconcile with extant literature. Lastly, it further provides beneficial theoretical and practical suggestions.

2. Literature Review

2-1. Green Human Resource Management (GHRM) and EGBs (i.e., Eco-Helping and Eco-Civic Engagement)

It is commonly known that GHRMs create a series of positive successes that are associated with EGBs (Din et al., 2025; Fawehinmi et al., 2020; Jasim et al., 2025; Jerónimo et al., 2025; Islam et al., 2025; Li et al., 2025; Li & Li, 2025; Van Waeyenberg & Semeijn, 2025). Li et al. (2025) in a systematic review reinforced the importance of GHRM in predicting EGBs. Implementing criteria that are consistent with green professionalism in the recruitment and employee selection process and including green tasks in an employee role ensures that the organization will hire candidates who will show green competencies and will be more likely to display green behaviors suitable for the employer (Ababneh, 2021). Nevertheless, the workers' gap in environmentally friendly behavior patterns should be bridged by motivating them to contribute more to the green environment around us. It becomes evident from Aboramadan (2022) that employees consider their organizations as objects that should be given back –in this case, a firm as a living organism that should be environmentally friendly. They engage in certain work behaviors that their employer displays in the form of a pro-environmental orientation towards care and protection. The awareness of the issue of the SET, resulting in an employee's sense of reciprocity to contribute to organizational green objectives, may be mentioned, as well. In this context, global HRM is linked to the employer's supportive practices, and the employees are facilitated with various resources and development environments to improve their skills, knowledge, and attitudes (Singh et al., 2020). To mention one, it familiarizes staff with environmental concerns and transforms them into green thinkers, offering them skills that will push them even more in environmental protection (Fawehinmi et al., 2020). The employer is digging into human resources development, which provides in the form of knowledge about environmental awareness. As a consequence, the evaluation of their environmentally friendly behavior under the HR appraisal system is intended to have a positive feedback effect on their sustainability-related behaviors. During annual HR appraisals, employees are ready for constructive feedback and the kind of support needed from the company to reach the desired behaviors. The feedback that this particular study may provide can be in connection with the various types of EGB. Besides, green-based sales and responsive incentives are considered to be systematic ways to encourage employees to take green activities in high spirits and achieve sustainability goals (Ababneh, 2021). The GHRM involvement can also be the opening of more career opportunities for individuals who engage in green jobs (Piwowar-Sulej, 2022). Zafar et al (2024) found green job crafting associated with voluntary EGBs. Eventually, the company that can express its social accountability and implement GHRM (Anaboramadan, 2022) practices via such exposure to employees can expect positive social exchanges embodied by the EGB form. Daily et al. (2009) define organizational citizenship behaviors for the environment (OCB-E) as "discretionary acts by employees within the organization not rewarded or required that are directed toward environmental improvement" (p. 246). These actions improve the organization's environmental performance as a whole. OCB-E, on the other hand, shows a wider dedication to the management of public resources and does not merely encourage ecological sustainability at the organizational level for public entities. Eco-helping and eco-civic engagement are subdimensions of OCB-E, according to Boiral and Paillé (2012). Employees who engage in eco-helping encourage, support, and cultivate pro-environmental and sustainable behaviors within their organization and among their colleagues. At the workplace, eco-helping (EH) is the practice of employees motivating their peers to engage in environmentally friendly practices; eco-civic engagement (ECE) is the term used to describe employees' voluntary involvement in the organization's environmental initiatives (Tsai et al., 2016). Cooperative helping behaviors boost collaboration and interdependence (Van Dyne & LePine, 1998). Examples of eco-

helping include requesting coworkers to take an active part in a firm's environmental projects, urging colleagues to recycle or preserve energy, and educating new hires about environmental processes (Boiral & Paillé, 2012). According to Boiral and Paillé (2012), eco-civic engagement is the voluntary involvement in environmental programs and events that a company supports. Engaging in eco-civic activities helps the organization accomplish its environmental goals and improves its reputation among stakeholders and members as a "green" organization. Participating in volunteer training programs or seminars to learn more about promoting sustainability inside an organization is one example of eco-civic engagement (Boiral & Paillé, 2012). Environmental training, performance appraisal, and green rewards that are part of GHRM practices may help employees support their peers in changing their behavior to become more environmentally friendly, thereby improving eco-helping (EH) at the workplace. Recruiting people with pro-environmental attitudes can encourage eco-helping behavior since new employees will help others engage in environmentally friendly activities. Integrating eco-behaviors into performance appraisals helps promote eco-helping (EH) among the employees, as it reminds them about the significance of green efforts. Likewise, when an organization incorporates sustainability into its HR practices, employees may be more willing to engage in environmental activities outside the workplace, indicating higher levels of eco-civic behavior. In addition to knowledge acquisition, training employees on environmental issues encourages them to participate in external community-based environmental activities, thereby demonstrating eco-civic responsibility. Policymakers and academics can measure the overall health of environmental sustainability efforts by examining the prevalence and efficacy of EGBs, such as recycling, energy saving, and sustainable consumption (Li et al., 2025). Providing incentives for green behaviors ensures that the employees not only practice environmental responsibility at the workplace but also take part in environmental activities in other areas, like cleaning up the community or participating in environmental causes. This leads to the following hypotheses:

H1: GHRM and eco-helping are positively related.
H2: GHRM and eco-civic engagement are positively related.

2-2. Environmental Managerial Support (EMS) as a Moderator

Most companies only believe that implementing green management practices and policies will be enough to encourage staff to adopt environmentally friendly habits. Employees may not all be aware of —or comprehend— the organization's standards on environmental activities, however. Therefore, to further stimulate EGBs, EMS is required (Pellegrini et al., 2018). Gupta and Jangra (2024) found that managerial support channels between GHRM and employee engagement. This can be understood through their autonomy within the framework of SDT, indicating that SDT asserts that the role of EMS is to enhance EGB in one's livelihood. The fact that certain management styles have the power to cultivate motivation in the workforce is undeniable. By the same token, the SDT reveals that meeting the needs for success, interpersonal relations, and personal autonomy are major sources of engagement, motivation, and productivity at work (Deci & Ryan, 1985). The potential for managers to meet employees' needs for relatedness, competence, and autonomy should result in EGBs. They can assist staff members in comprehending and putting into practice green procedures and policies in regular business operations (Cantor et al., 2012). Additionally, supervisors can motivate subordinates to attend ecological education, and they may assume the role of advisers, thereby contributing to the occupational growth of the subordinates. They are instrumental in the success of employee monitoring by giving the employees feedback daily on their achievements. However, they can take numerous steps like including employee involvement in decisions, involving them in discussions about ecological issues, and holding debates about possible solutions (Paill´e et al., 2019), thereby enriching subordinates' sense that they can directly take actions that would bring a change (autonomy). The key factor that contributes to the success of effective communication and engagement of leaders with their employees relies on the ability to maintain trust-based relationships and keep communication open. It shows these programs to include teams and individuals in eco-centric activities (e.g., projects) and may attract people by creating communities centered on a common goal of environmental improvement, which would help build relatedness to other community members. The internal expectation is more powerful than an external requirement. This has caused the employees to be more

self-determined and more likely to be prone to CSR awareness and behavior (Minbaeva et al., 2009). Indeed, managers serve equally valuable functions in augmenting external stimulation (not only through the award of bonuses but also by providing job descriptions so that responsibilities can be performed effectively) (Gkorezis, 2015). Evidently, in the EMS, an employee is encouraged to develop personal relationships with their colleagues (relatedness). This fosters positive interaction and collective progress toward one goal (competencies) and permits to the incorporation of the ecological component into the development of pro-environmental solutions (autonomy). EMS entails availing all the assistance, resources, and morale boosts needed to ensure the employees practice eco-helping. This means that if employees are getting the perception that they are being supported more by managers, then there will be an enhancement of the GHRM impact on eco-helping (EH). Eco-civic participation entails the aspect of the employees engaging themselves in environmental concerns outside the workplace expectation, say, through campaigns for environmentally friendly practices. Therefore, when there is a perception of strong EMS, it enhances the exercise of power over eco-civic engagement by GHRM practices through promoting extra-role environmental behaviors among the employees. Therefore, it is assumed that EMS will magnify the impact of GHRM on eco-helping (EH) and eco-civic engagement (ECE), which is reflected in the following hypotheses:

H3: The relationship between GHRM and eco-helping is positively moderated by EMS.

H4: The relationship between GHRM and eco-civic engagement is positively moderated by EMS.

The following study framework has been presented, taking into account the theoretical background and above-mentioned hypotheses (Figure 1).

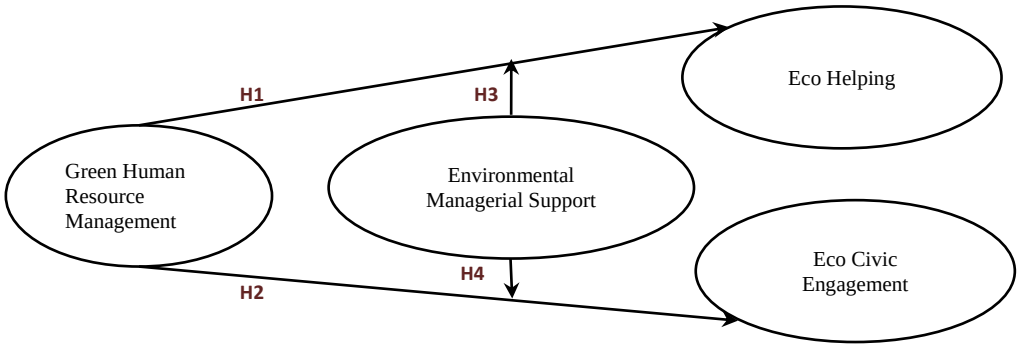

Fig. 1. Research Model

3. Methodology

To actualize the research objectives, a quantitative approach and a cross-sectional survey design were opted for this study. The banking industry in Pakistan employs more than 200,000 employees (AUGAF, 2023). For data collection, a purposive sampling technique was employed to select participants who met specific inclusion criteria, ensuring the relevance and reliability of the data collected. The inclusion criteria required that participants: (1) held full-time employment positions within their respective organizations, (2) were directly engaged in daily operational or managerial activities, and (3) had substantial exposure to or involvement with GHRM practices such as green recruitment, training, performance appraisal, or rewards. Individuals were excluded from the sample if they were employed on a part-time or contractual basis, had less than six months of tenure in the organization, or were not directly familiar with the organization's GHRM initiatives. Kelly (2010) argued that purposive sampling is "used to select respondents that are most likely to yield appropriate and useful information" (p. 317). Hence, this approach was opted to ensure that only informed and contextually relevant individuals contribute to the study's findings. Owing to temporal and financial limitations, the authors hired a research agency to collect participants' data from the Pakistani Islamic banking organizations. This research firm sent a cover letter and a corporate email to the HR departments. Participants were given the assurance that their completed questionnaires would remain confidential and were invited to reply willingly. The questionnaires were sent out electronically (through email and Google Forms) and in printed form, where it was required to maximize the participation rates. The data collection process was also achieved within a period of

about 6 to 8 weeks. According to Iqbal and Piwowar-Sulej (2023a), the average response rate in social science research is 35.70%. After reaching out to 1000 workers in the branch-based banking industry, the research agency obtained 875 completed survey forms, making up a higher sample size for the study than was minimally needed. The participation of the operations departments may have contributed to the very high response rate (87.5%) when compared to the average figures. There were 30% women and 70% men in the sample. The bulk of participants (80%) were front-line workers, with around one-fifth (30%) holding managerial positions. SPSS Version 23 was used to record the data and perform data screening, demographic, and descriptive analysis. Additionally, the authors used SmartPLS 3.0 to perform measurement model and structural model analysis. The research flowchart is shown in Figure 2.

In the survey instrument, the GHRM was calculated using the Dumont et al. (2017) scale. However, to increase the scale's content validity, the authors and an outside expert performed a semantic analysis (Venkatraman & Grant, 1986), which turned up two items that were related to HR training that overlapped. Next, the law of parsimony—using the fewest amount of items required to produce a valid measurement—was applied to improve the scale's face validity (Diamantopoulos & Siguaw, 2006). The HRM sub-functions of job description, HR appraisal, HR training, rewards, and promotion were thus covered by the five items on the scale. The authors also performed confirmatory factor analysis (CFA) to verify the distinctiveness of GHRM based on these five items, while modifying the items from an earlier study under the advice of Hair et al. (2020). Eco-civic engagement and eco-helping were measured using Tsai et al. (2016)'s single and dichotomous items scales, respectively, asking participants to rate from very unlikely (i.e. 1) to very likely (i.e., 5). The measurement scale of six items developed by Paillé et al. (2019) was utilized to evaluate EMS. Since this study was carried out in Pakistan, certain items were revised slightly to increase their precision (based on suggestions made during a pilot study with 13 respondents). A five-point Likert scale was used to measure each of the four continuous variables, with 1 denoting "strongly disagree" and 5 denoting "strongly agree."

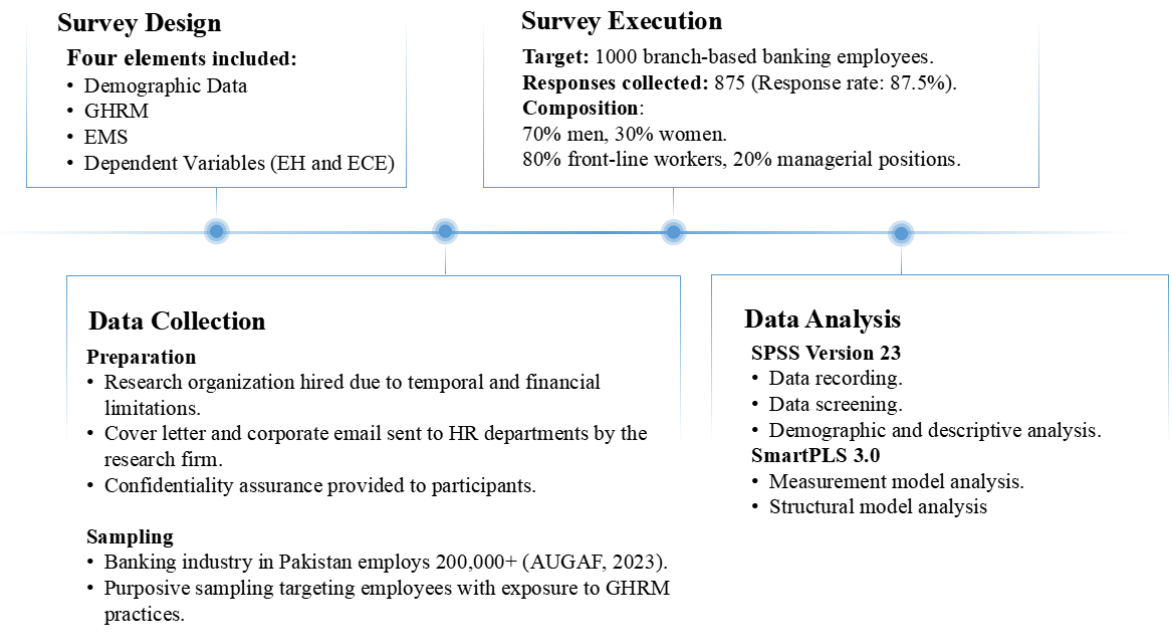

Fig. 2. Research Flowchart

4. Findings

Here, the findings of the study regarding the relationships between GHRM and EGBs (i.e., EH and ECE) are presented. Furthermore, the study also investigated the moderating role of EMS in these relationships. SmartPLS 3.0 software was utilized to perform the Partial Least Squares Structural Equation Modeling (PLS-SEM) for hypothesis testing.

4-1. Measurement Model Assessment

4-1-1. Construct Reliability and Validity

The reliability and validity of the constructs were assessed using Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE), as shown in Table 1.

Table 1. Construct Reliability and Validity

Construct	Items	Cronbach's Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)
GHRM	5	0.87	0.90	0.65
EH	2	0.82	0.88	0.71
ECE	1	0.84	0.89	0.74
EMS	6	0.88	0.91	0.67

Note. *GHRM = Green Human Resource Management, EH = Eco-helping, ECE = Eco-civic Engagement, EMS = Environmental Managerial Support*

All constructs demonstrated good reliability with Cronbach's alpha values above the recommended threshold of 0.70. The composite reliability values were also above 0.70, indicating good internal consistency. The AVE values were above the threshold of 0.50, ensuring convergent validity.

4-2. Discriminant Validity

Discriminant validity was assessed using the Fornell-Larcker criterion and the heterotrait-monotrait (HTMT) ratio. All constructs met the Fornell-Larcker criterion, with the square root of the AVE for each construct being greater than its highest correlation with any other construct. The HTMT ratios were all below the threshold of 0.85, further confirming discriminant validity.

4-3. Structural Model Assessment

4-3-1. Path Coefficients and Hypothesis Testing

The structural model was evaluated by examining the path coefficients and their significance levels. Bootstrapping with 5000 samples was performed to test the hypotheses; results are presented in Table 2.

Table 2. Path Coefficients and Hypothesis Testing

Hypothesis	Path	Path Coefficient (β)	t-value	p-value	Result
H1	GHRM→EH	0.35	4.12	<0.001	Supported
H2	GHRM→ECE	0.30	3.89	<0.001	Supported
H3	GHRM*EMS→EH	0.25	3.45	<0.001	Supported
H4	GHRM*EMS→ECE	0.22	3.21	<0.001	Supported

Note. *B = Standardized regression coefficient (Beta), T = t-statistic, GHRM = Green Human Resource Management, EH = Eco-helping, ECE= Eco-civic Engagement, EMS= Environmental Managerial Support*

4-3-2. Coefficient of Determination (R^2) and Effect Size (f^2)

The R^2 values (presented in Table 3) indicate the amount of variance in the dependent variables explained by the independent variables.

Table 3. Determination (R^2) and Effect Size (f^2)

Dependent Variable	R^2
EH	0.52
ECE	0.48

Note. *EH = Eco-helping, ECE = Eco-civic Engagement*

The effect size (f^2) (executed in Table 4) of the moderating variable (EMS) was also calculated.

Table 4. Effect Size (f^2)

Moderating Effect	f^2
GHRM * EMS→EH	0.15
GHRM * EMS→ECE	0.12

Note. GHRM = Green Human Resource Management, EH = Eco-helping, ECE = Eco-civic Engagement, EMS = Environmental Managerial Support

The R^2 values suggest that the model has moderate explanatory power. The f^2 values indicate that the moderating effect of EMS has a medium impact on the relationships between GHRM and green employee behaviors.

4-4. Moderating Effects

The moderating effects of EMS on the relationships between GHRM and green employee behaviors were further examined. The interaction terms (GHRM * EMS) were significant in all three cases, indicating that EMS positively moderates the relationships between GHRM and EH and ECE.

Moderation plots were generated to visualize the interaction effects. The plots showed that the presence of EMS strengthens the positive relationships between GHRM and green employee behaviors. Specifically, employees exhibited higher levels of EH and ECE when both GHRM practices and EMS were in place. The following is the moderation plot analysis (Figure 3), the solid lines depict the behaviors where EMS occurs, while the dashed lines depict the behavior where there is no EMS, and this shows that EMS moderates these behaviors. Based on the similar evidence above, it was apparent that the presence of both GHRM and EMS would benefit EGBs positively.

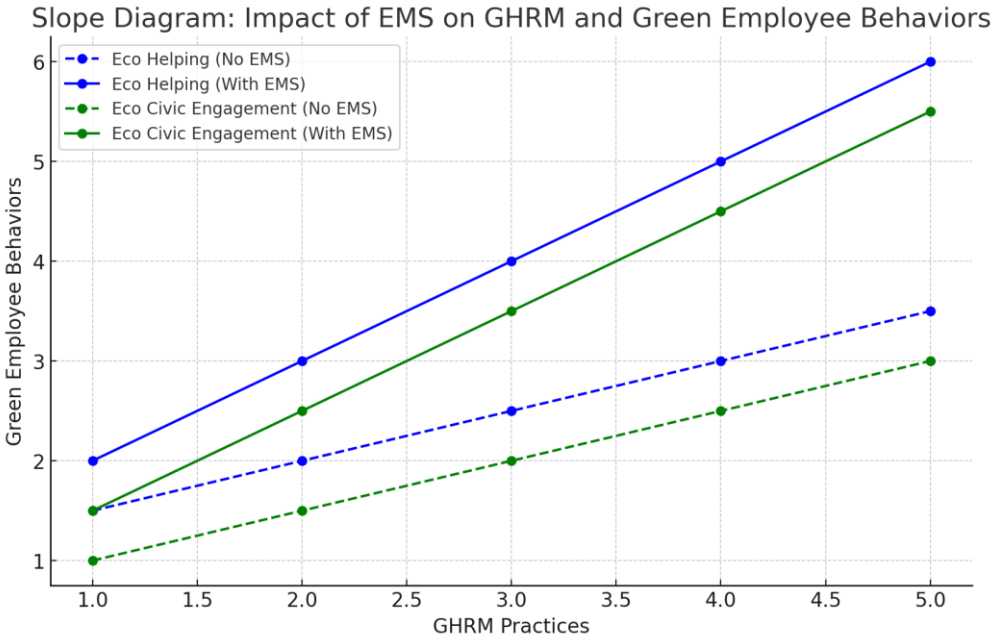

Fig. 3. Plot Analysis

The results of this study support all four hypotheses. GHRM was found to have a positive relationship with EH and ECE. Furthermore, EMS was found to positively moderate these relationships, enhancing the impact of GHRM on EH and ECE. These findings underscore the importance of integrating GHRM practices and EMS to foster green behaviors among employees. This section has provided a detailed analysis of the data using SmartPLS, demonstrating the robustness and significance of the proposed model and hypotheses.

5. Discussion

Data collected from 875 employees in the Pakistani Islamic banking sector confirmed all four hypotheses. Consequently, this study highlighted the significant role of GHRM on both kinds of EGBs (i.e., EH and ECE) as well as the moderating effect of EMS. The results add to the studies that investigate the origins of EGBs.

With reference to H1 and H2, the results show the direct influence of GHRM on two variants of EGB. This discovery runs counter to the findings of Dumont et al. (2017), who revealed only a direct effect of GHRM on innovative behaviors, and Fawehinmi et al. (2020), who demonstrated no significant direct influence of GHRM on EGBs. Nonetheless, our study supports the findings of Saeed et al. (2019) and Ababneh (2021), who demonstrated a direct relationship between GHRM and EGB

(considered as a construct that encompasses both in-role and extra-role behaviors). It corroborates the findings of Aboramadan (2022) and Islam et al. (2021), who revealed a direct association between GHRM and green in-role and extra-role activities. The results of the study are consistent with research from both the banking industry in Pakistan (Gul & Zafar, 2024; Iqbal et al., 2018; Iqbal, 2018; Kong et al., 2021) and abroad (Rubel et al., 2021). This confirms the connections between GHRM and EGBs. Islamic cultural factors, particularly Islamic Work Ethics (IWEs), significantly influence the effectiveness of GHRM in promoting eco-friendly behaviors within the Islamic banking sector. Rooted in Quran and Sunnah principles emphasizing justice, charity, and honesty, IWEs align with environmental stewardship. According to Beckun (1997), IWEs refer to moral concepts that distinguish between acceptable and wrong in an Islamic environment. Ali et al. (2022) highlighted that integrating green intellectual capital and GHRM enhances employee commitment and eco-friendly behavior in Islamic banks. In a corporate setting, Islamic work principles foster learning, creativity, and ultimately organizational success. Abbasi et al.'s (2012) study results likewise provided guidance to other Pakistani firms on how to improve organizational outcomes by integrating Islamic work principles into their culture. Moreover, Nasution and Rafiki (2019) found that the IWEs have a positive and significant relationship with organizational attitudes, i.e., commitment and job satisfaction in employees in the Islamic banks. Recognizing employees' social identity and cultural values is crucial for environmentally friendly policies.

H3 and H4 tested the moderation of EMS between GHRM and EGBs (i.e., EH and ECE). Prior studies concentrated on factors at the organizational level acting as moderators, like CEO leadership (Ren et al., 2021), shared green knowledge (Iqbal & Piwowar-Sulej, 2023b), and managerial environmental care (Song et al., 2020). Even though managers' actions play a significant role in stimulating EGBs (Zhang et al., 2021), no research has, as far as the authors are aware, been done utilizing EMS as a conditional variable between GHRM and EGBs (i.e., EH and ECE), in the context of the banking industry. According to the premise of this study, managers can increase their staff members' internal and external motivation, which ought to lead to the expected behaviors (Rigby & Ryan, 2018). The SDT's primary focus is internal motivation. The SDT states that supervisors should encourage EGBs by meeting the demands of their staff members for competence, relatedness, and autonomy. Previous studies on environmental sustainability explained the connection between pro-environmental employee behavior and managerial support, which affects all forms of EGB (e.g., Aboramadan et al., 2021; Zhang et al., 2021). Managers often believe that they can solely enforce environmentally friendly management policies as a means conducive to change in employees' human behavior. However, this assumption fails to consider the fact that employees need to know the environmental standards practiced by the organization. Consequently, this study shows that EMS has a crucial influence on improving employees' green behaviors since it closes this gap. This is consistent with Pellegrini et al. (2018), who have opined that for real motivation of EGBs, management support is fundamental. According to SDT (Deci & Ryan, 1985), at the workplace, EMS fulfills the three basic psychological requirements of Competence, Relatedness, and Autonomy that are crucial to motivation and engagement. Cantor et al. (2012) further established that when managers provide support to the employees to practice the green policies /procedures, the employees are likely to embrace them as part of their working practices. It is at this capacity that EMS is most evident in the promotion of green in-role behaviors (GIRBs), with supervisors constantly feeding back and assessing the employees' performance in relation to the environmental goals set. In addition, EMS enhances the perception of decentralization since the employees are directly engaged in participating in decision-making procedures regarding environmental concerns and discussions of possible solutions (Paillé et al., 2019). EMS ensures that the employees feel free to take action towards environmentally friendly activities, thereby enhancing the commitment level. Managerial support channels between GHRM and employee engagement (Gupta & Jangra, 2024). This feeling of independence, along with the emergence of confidence-building relationships between managers and subordinates, strengthens the relatedness and cooperative responsibility towards environmental objectives. Therefore, the employees are in a position to practice the EGBs. Managers also have the responsibility of ensuring that there is teamwork and a togetherness spirit in organizations. EMS not only encourages individuals to engage in eco-oriented activities but also helps to create groups with a common mission and the goal of improving the environment. This, in turn, increases employees' relatedness to other colleagues and

increases the perception of competence that is gained from working towards improved environmental outcomes. Based on these results, we can assert that EMS significantly moderated the relationship between GHRM and EGBs (i.e., EH and ECE), in support of H3 and H4. Thus, it is possible to state that the role of managerial engagement in emission-sustainable activities, as well as overall positive moderating effect of EMS on the relationships between GHRM, EH, and ECE, can contribute to the development of sustainable activities in the firm. EMS not only encourages employees' knowledge and commitment toward non-green practices but also ensures an internal encouragement of promptness to the non-green practices; this, in turn, increases employees' self-determination and increases their efficacy to participate in CSR-related exercises (Minbaeva et al., 2009). All in all, by meeting employee competence needs, relatedness needs, and autonomy needs as well, EMS enhances GHRM's positive effects on green employee behaviors. Such managers encourage employees to promote green practices in the workplace, thereby ensuring more proactive, motivated, and environmentally friendly employees. As such, there is a need to have EMS present to ensure that the implementation of GHRM strategies leads to better, sustainable outcomes for the organization.

6. Conclusions

In the face of the increasing tension, which is caused by environmental problems, the number of scholars who research the EGBs' factors is growing (Din et al., 2025; Fawehinmi et al., 2020; Jasim et al., 2025; Jerónimo et al., 2025; Islam et al., 2025; Li et al., 2025; Li & Li, 2025; Van Waeyenberg & Semeijn, 2025). Though GHRM has gathered significant attention, the elaboration and research on the GHRM practices and their effects on employee behaviors are still rare (Islam et al., 2021). As a direct reaction to that, a model was suggested. An additional intermediate element (EMS) was then empirically studied to find how it boosts the link between GHRM and affects the form of EGB (i.e., eco-helping and eco-civic engagement). Pakistani banking sector employees' process shows that the GHRM is positively correlated with both eco-helping and eco-civic engagement, and EMS strengthens those links. Islamic Work Ethics (IWEs) significantly enhance GHRM's effectiveness in promoting eco-friendly behaviors in the Islamic banking sector. Rooted in Quranic principles, IWEs align with environmental stewardship, fostering employee commitment and organizational success, as highlighted by various studies, including those by Ali et al. (2022) and Nasution and Rafiki (2019).

6-1. Theoretical Implications

The theoretical contributions of this study are as follows, as its findings offer a wealth of insights to the body of knowledge in the contexts of GHRM and EGBs. First, it fills a major gap in the literature by thoroughly discussing how GHRM can foresee particular varieties of EGBs, namely, eco-helping and eco-civic engagement. This distinction is important, and prior research has mainly analyzed less-specific divisions of EGBs and has not explored the differences between them. In doing so, the study enhances the comprehension of the processes that underpin eco-helping and eco-civic approaches in GHRM to encourage pro-environmental performance at the workplace. Second, The study extends the current research of Gupta and Jangra (2024), in which EMS is used as a moderating variable to understand the impact of GHRM on employees. Using the lens of leadership support, this study adds to previous work that directly linked GHRM and EGBs by revealing the necessary context that needs to be in place for GHRM to have its positive impact. This theoretical contribution is relevant to SDT, as it shows how the support from management increases the motivation for the employee to participate in practices that are environmentally friendly by meeting the needs of autonomy, competence, and relatedness. In addition, this study demonstrates the effectiveness of the SET and the SDT as theories in understanding the behavior of employees in green management environments. The application of both theories gives more insights into the way the environmental initiatives could be promoted in the workplace to meet the theoretical appeal made by Fawehinmi et al. (2020), suggesting that the use of multiple views in the examination of EGBs is essential. One contribution of this study is proposing EMS as a moderator between GHRM and EGBs, including eco-helping and eco-civic engagement. As it has been mentioned in the literature, except for one work, there has been little empirical investigation of the moderating function EMS may play in this relationship. This advancement helps cause a clearer relationship between GHRM systems and the green behaviors of employees, thereby offering a more realistic relationship where leadership influences these behaviors. Finally, this study

highlights the use of a more-than-one-perspective approach to examining dynamics of the workforce (Iqbal & Piwowar-Sulej, 2023). In doing so, it presents a more complex perspective of the antecedents of EGBs for future studies to adopt similar multi-theory frameworks in other industries and contexts. Altogether, the current research contributes significantly to the theoretical advances by enriching the extant knowledge of GHRM, EMS, and their effects on employees' behaviors while addressing important conceptual and methodological voids in the literature.

6-2. Practical Implications

This research provides useful implications for banking organizations, especially for Islamic banking organizations, to improve environmental sustainability activities through GHRM. Firstly, it has been revealed that there is the possibility of improving eco-helping and eco-civic engagement through adopting and implementing GHRM practices in banks. This implies that financial institutions should ensure green policies are integrated into the HR activities, including staffing, training, appraisal, and compensation, to encourage green work initiatives from the employees. Secondly, through EMS, the impact of organizational environmental initiatives was found to be partially mediated by management, which implies that the implementation of environmental sustainability initiatives must have the support of management. To ensure that the positive effects of GHRM in creating a sustainable culture enhance employees' green behavior, leaders need to be trained in environmental management. Thirdly, Islamic banks can make a competitive advantage from the implementation of GHRM, as the findings of this research illustrate that GHRM has a positive impact on green behaviors of the employees, which are essential for the organization's image of an environmentally friendly bank. Fourthly, the Islamic banks can make policies that are compliant with Islamic teaching and sustainability criteria to promote the practices of eco-helping and eco-civic values among the employees. Fifthly, banks that espouse appreciation of GHRM practices and EMS are more likely to find their employees being more committed to green Initiatives. It means that the identification with the organization's values and objectives associated with sustainability might be enhanced, which might lead to increased organizational commitment. Lastly, modern tools like Green HRM Platforms (e.g., EcoHR, Planetly by OneTrust), Sustainability Apps (e.g., Deed, Pawprint, Giki Zero), AI-Powered Green Suggestion Systems (e.g., IBM Watson AI for Sustainability), Innovation Labs (e.g., via platforms like Qmarkets, IdeaScale), Sustainability dashboards (e.g., Salesforce Net Zero Cloud) and blockchain-based green rewards (e.g., Green Coin, EcoToken platforms), etc., can be utilized to support employee-led sustainability initiatives. Hence, these research outcomes reveal the significance of organizational-level endeavors in banking industries that are advancing toward attainable sustainable evolution for the nations supporting environmental goals, inclusive of the UN-sponsored SDGs. The establishment of these activities benefits not only Islamic banks but also the banking industry as a whole, as they increase the environmental score and raise the social responsibility of banking structures, paving the way for sustainable development in banking.

6-3. Limitations and Further Research Directions

In the present study, there are some obstacles which bring out new scientific problems for future investigation. The first is the context in which the research was conducted. The study was conducted only in one sector (i.e., banking organizations) and was limited to a confined country (i.e., Pakistan). As the research is limited to a single country and Islamic banking organizations, more studies are needed to test the applicability of results cross-culturally. Another limitation is that it is a cross-sectional study, which may not fully capture the effect of GHRM. In this respect, the efficacy of any HRM practices should be expected to reflect on employee behavior over a certain period of time and not instantaneously. One of the areas for improvement here is using the longitudinal approach, which would allow researchers to examine the dynamics in respective types of green governance before and after the GHRM and EMS implementation. Moreover, the model was confirmed with the data obtained from the employees only. Further studies should be conducted, including superiors' opinions about their employees' behavior. The reason why the same single moderator was added to the current study is the fourth item on the list. Future studies may examine other possible factors that are responsible for the GHRM effect on EGBs; for instance, trust in one's supervisor or green values, and the multiple underlying mechanisms. The role of culture-specific leadership (Zaidi et al., 2023; Zaidi

& Jamshed, 2023; Zaidi, Waqas & Mahmood, 2024) and technology-driven leadership (Zaidi, Aslam et al., 2024) can be incorporated into the model. The study model can be enriched by adding more context-specific variables, i.e., religiosity (Zaidi et al., 2022). The role of green HRM practices in attaining SDGs (Zaidi & Jamshed, 2021; Zaidi et al., 2025) can be studied for consolidated green management in banks. Moreover, other untested variants of EGBs can also be incorporated into the current framework.

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