Green human resource management and environmental knowledge: A moderated mediation model to endorse green CSR

Rizwana Hameed[1]*, Nabeel Rehman[2,3], Sajid Tufail[3] and Mehmet Kiziloglu[4]

[1]Institute of Business and Management (IB&M), University of Engineering and Technology Lahore, Lahore, Pakistan, [2]Office of Research Innovation and Commercialization, Lahore Garrison University, Lahore, Pakistan, [3]Institute of Management Sciences (IMS), Bahauddin Zakaraiya University Multan, Multan, Pakistan, [4]Management and Organization Department, Pamukkale University, Pamukkale, Turkey

Firms use green human resource management (GHRM) as an essential business tactic to "go green". The current research analyzes an integrative model by examining the indirect impact of GHRM practices on green corporate social responsibility through a pro-environmental psychological climate and pro-environmental behavior. This study also analyzes the moderating effect of resistance to change (RTC) and environmental knowledge on the relationship between GHRM and green CSR. The data was collected through a questionnaire-based survey of 388 executives working in various organizations under the China-Pakistan Economic Corridor (CPEC). The results were analyzed through Smart PLS-3 and present that both GHRM dimensions have indirect positive effects on green CSR through the intervening role of pro-environmental psychological climate and pro-environmental behavior. The results of the study also indicated that resistance to change (RTC) has a counterproductive effect that can impede firms and their employees from fully incorporating green practices and minimizing their negative environmental impact.

KEYWORDS

GHRM, employee resistance to change, pro-environmental behavior, pro-environmental psychological climate, environmental knowledge, green CSR

1 Introduction

The upsurge in ecological issues worldwide has encouraged firms to increasingly adopt eco-friendly practices. These implementations can benefit organizations that are becoming "green and good enough" (Martínez-del-Río et al., 2012; Elahi et al., 2020). In this regard, the contribution of human resource management is outstanding. Uddin et al. (2021) demonstrated that GHRM is a critical activity in speeding up green campaigns. GHRM is an approach to managing an organization's human resources that emphasizes environmental sustainability and involves integrating sustainability principles into the HRM practices and policies of an organization, to reduce the organization's environmental impact while improving employee wellbeing and organizational performance. Preliminary studies have postulated that organizations should adopt GHRM to encourage and stimulate employee's green behaviors to achieve firms' green

goals (Renwick et al., 2013; Das et al., 2019; Farrukh et al., 2020). Academic investigations have suggested that a firm's HR obligation to ecological concerns resolves its environmental performance (Budhwar et al., 2019; Hameed et al., 2022), considering the way that HR practices allow firms to build convincing human capital to recover ecological performance and ensure sustainable growth (Roscoe et al., 2019; Fawehinmi et al., 2020).

Consequently, different human practices should be transformed to provide thoughtful influence in supplanting uncommon capital in an impactful manner to develop a pro-environmental psychological climate within the firm (Midden et al., 2007; Garavan et al., 2022). Through their social interactions in the workplace, employees perceive the value of the pro-environmental psychological climate using firm approaches, plans, procedures, and measures (Hameed et al., 2021). Similarly, regardless of employees' ability to comprehend essential information concerning the environment and its surroundings, this information adds to their knowledge base. Hence, environmental knowledge and pro-environmental psychological climates are inconceivably consistent (Bamberg, 2003). Together with GHRM practices, this harmonization leads to better ecological outcomes (Afsar et al., 2016; Afsar and Umrani, 2020). As HRM has an added prospect and likelihood to improve a firm's pro-environmental performance, HRM has dual targets (Shah, 2019) to accomplish the corporate goals and meet the employees' projected goals while reducing procedural and social obstructions (Wang and Sarkis, 2017; Aftab et al., 2022).

Similarly, HR plays an important role in corporate social responsibility (CSR) practices in a firm. Most researchers perceive this role as an essential component of CSR practices once socially responsible HRM practices are deliberated (Shen and Benson, 2016). Moreover, different stakeholders have emphasized that organizations must be sufficiently socially and ecologically competent (Hassan and Ibrahim, 2012; Ferraris et al., 2018); thus, a substantial emphasis on CSR is important (Carroll, 2015; Rhee et al., 2018). Voegtlin and Greenwood (2016) assumed that HRM plays a role in how CSR is grasped, shaped, and implemented. Thus, it is critical to raise CSR status in a general setting since multinational companies (MNCs) must shape the host country's CSR standings while building relationships with local people and embodying widespread social commitment. Furthermore, this study explored the moderating effects of RTC and EK on the relationship between GHRM and PEB.

The results of this study make several contributions to the literature on GHRM and green CSR. First, the findings provide empirical evidence of the positive relationship between GHRM practices (green performance management and appraisal and green empowerment) by decomposing green HRM activities into two dimensions and environmental knowledge. Second, they shed light on the importance of employee participation in environmental initiatives to strengthen the relationship between environmental knowledge and green CSR. Furthermore, the results illuminate the green environment and green employee behavior view by empirically and theoretically illustrating how green HRM activities impact a firm's green CSR from a multi-mediating-moderating perspective. This study also examined the role of environmental knowledge and resistance to change as moderators in the association between green HRM practices and the firm's green CSR. Finally, the findings highlight the importance of GHRM

practices in promoting green CSR, which has implications for both academics and practitioners. Overall, this work provides valuable insights into the role of GHRM practices and environmental knowledge in promoting green CSR, which can help organizations to develop effective strategies for sustainable development.

The structure of this paper is as follows. Section 2 provides an overview of previous work. Section 3 presents the research method for this study. Section 4 describes the data analysis and study findings. Section 5 presents the conclusions and the practical implications and limitations of the current study.

2 Literature review and hypotheses

2.1 Stakeholder theory

Stakeholder theory has its underlying foundations during the 1960s organizational literature, although its formalization is generally credited to Freeman by Laplume et al. (2008). In stakeholder theory, *"managers should focus on any group or person who can influence or is influenced by the firm's objective, since that group may forestall [the firm's] achievements."* This theory tends to describe morals and standards in organizational management. Stakeholders have the authority to affect an organization's performance and sustainability from alternate points of view in inconsistent measures (Laplume et al., 2008).

Stakeholder theory unequivocally or obliquely encompasses theory in three distinct types—descriptive/empirical, instrumental, and normative. The descriptive/empirical formulations of the theory portray and clarify how firms or their administrators perform. Therefore, the role of GHRM practices (green recruitment and selection, green training and development, and green reward and compensation) is vital for better personnel comprehension of the job descriptions. The right skill set earned on the job after training leads managers to be green and do their jobs more efficiently and effectively. GHRM practices such as recruitment and selection, performance assessment, pay, and rewards are intended to develop a labor force that comprehends and advances green conduct in the firm (Hameed et al., 2020) as the adequacy of any essential method is subjected to the accessibility and ability of its people (Jackson and Seo, 2010).

Instrumental describes the demands and how to satisfy the internal and external stakeholders to prosper financially, socially, and environmentally to generate value for all concerned parties. The manifestation of the perceived green environment occurs due to the systematization of a corporate ecological approach, which purports that green conduct is worthwhile for the firm and workers. Consequently, workers gain from both corporate ecological procedures and observed green environment to perform in an ecologically responsible manner. Accordingly, a positive pro-environmental psychological climate is indispensable to engendering green behaviors among employees.

The normative perspective refers to the ethical respectability of supervisors. Organizations are equipped to react to stakeholder pressures (i.e., the precise prerogatives of stakeholders based on their explicit benefits and requirements) and benefit from increased performance. Orlitzky et al. (2003)

showed that organizations are appropriately equipped to address their stakeholders' experiences to enhance financial outcomes.

Sroufe (2017) suggested that the demands from stakeholders and intended activities guide and help executives identify, comprehend, and evolve both internal and external environments of businesses. This eventually establishes a strong foundation for the strategic planning of the firm while attaining sustainable growth. Stakeholder demands propel organizations to consider societal, ecological, and wellbeing and security issues and challenges. Organizations can address stakeholders' prerequisites by concentrating on the progress and advancement of significant performance indicators alongside the valuation of the priority of individual indicators. The core concern of firms' CSR practices is to connect with stakeholders and meet their valid demands and desires. The role of GHRM practices is vital; thus, stakeholder theory provides relevance in this context.

2.1.1 Green performance management and appraisal and pro-environmental psychological climates

As suggested by HRM behavioral literature, an employee's work attitude and behavior are influenced by green HRM practices (Wright et al., 2001; Becker and Huselid, 2006; Islam et al., 2019). Previous studies proposed that employee performance outcomes are subjected to such conduct (Wright et al., 2001; Becker and Huselid, 2006). Green HRM affects employee work environments and green attitudes for the following reasons: first, green HRM activities such as transferring information about the business's green projects and concentrating on employee green attributes, recruiting and selection, and training to encourage green traits, are most likely to cultivate green perspectives in employees (Renwick et al., 2013). Employees' social interactions, on the other hand, affect the psychological environment, as they view and observe firm policies, activities, and processes at work (Kuenzi and Schminke, 2009), and shape opinions about the company and its principles (Nishii et al., 2008; Kaya et al., 2010).

The formal recognition and enforcement of green HRM policies and approaches overtly encourage employees regarding the firm's commitment to be green and can ensure requisite employee behavior by following firm sustainability policies. Promotion, performance appraisal, and incentives are required to demonstrate such positive practices, as they inspire employees to engage in and contribute to green practices (Renwick et al., 2013). Green HRM will invigorate employees' engagement with in-job green tasks and elicit extra-role green actions in the workplace. Thus, we propose that:

H1: Green performance management and appraisal positively affect pro-environmental psychological climates.

2.1.2 Green empowerment and pro-environmental psychological climate

The level of autonomy is a decisive factor for gauging its magnitude, which usually varies in an organizational context. The corporate norms as part of the relative organization culture can directly strengthen the indicators of HRM function to workers (Ostroff and Bowen, 2016). The workers receive signs from their surroundings after determining whether to exhibit green behavior.

Therefore, numerous researchers have proposed the use of rewards to encourage employees to participate in firm green initiatives (Jackson et al., 2011; Saeed et al., 2019). However, configuring compensation policies to adequately and transparently reward employees for environmental outcomes is challenging (Fernández et al., 2003). Hicklenton et al. (2019) suggested that a pro-environmental work climate provides its workers with free and fastidious motivation to engage in a pro-environmental psychological climate. Therefore, we propose that:

H2: Green empowerment positively affects pro-environmental psychological climates.

2.1.3 Green performance appraisal and pro-environmental behavior

Green performance management (GPM) proposes a system of evaluating employee performance activities in the environmental management process (Jabbour and Santos, 2008).

Firms increase their capacity by adhering to green HRM norms by training their workers to refine their performance (Govindarajulu and Daily, 2004). Such organizational practices will help green activities by delegating green-mindful people (Jabbar and Abid, 2015). Green performance outcomes must be recognized and directors used to accept responsibility for EM performance. The most generous GPM element for managers and employees is a performance assessment that impacts the strategy and ampleness of progressive rewards and returns. The appropriate use of these methods can persuade employees to continue green conduct and work towards green targets in their work.

Performance management is an essential aspect of GHRM practices to ensure conservation activities and sustainable development, thus evolving green performance management (Gholami et al., 2016; Farrukh et al., 2020). The evaluation of green execution might be needed considering how conduct is assessed to redirect individuals, increase esteem, and adjust equivalents. Based on needs, including PEB, the exhibition evaluation framework will energize allocation among laborers. Accordingly, counting PEB in the performance appraisal system will encourage appropriation among workers.

H3: Green performance management and appraisal positively affect pro-environmental behaviors.

2.1.4 Green empowerment and pro-environmental behavior

HRM behavioral studies reported that HRM practices may affect workers' behavior through psychological mechanisms (Jiang et al., 2012; Garavan et al., 2022). These reports also recommend that these psychological mechanisms (for example, pro-environmental psychological climate and obligations to perform green practices) may overhaul worker performance (Shen and Benson, 2016). Employees differ in their level of judiciousness at the workplace, which impacts their jobs as far as showing adaptable practices according to circumstances (Hoffman and Dilchert, 2012). According to theories, empowerment is influenced by the work setting (Spreitzer, 1996; Quinn and Spreitzer, 1997). Therefore, workers' green practices are affected by GE, which is a psychological process (Tariq, Jan, and Ahmad, 2016) and

psychological empowerment may induce positive practices and viewpoints among workers (McLaren-Thomson, 2016). Furthermore, an individual's behavior and viewpoints might be influenced by operational and psychological empowerment; for instance, burnout, job satisfaction, worker retention, and commitment (Meng et al., 2015; Meng et al., 2016).

H4: Green empowerment positively affects pro-environmental behaviors.

2.1.5 Pro-environmental psychological climate and pro-environmental behaviors

The terms, "green psychological climate" (Zhou and Mi, 2017) "pro-environmental organizational climate" (Norton et al., 2014), "green organizational climate" (Zientara and Zamojska, 2018), and "green work climate," are used interchangeably. The corresponding notion eventually leads to comparable outcomes, including the performance of green product development (Zhou and Mi, 2017; Aftab et al., 2022), pro-environmental behaviors (Zientara and Zamojska, 2018), and employee green behaviors (Norton et al., 2014). The contribution of societal values in constituting workers' conduct is generally recognized (Bamberg and Möser, 2007).

Norton et al. (2014) suggested that the green work environment includes shared insights among employees regarding societal antiquities, which are articulated in environmental sustainability strategies, structures, and procedures, and, likewise, the distinctive behaviors of coworkers within an organization. The authors also debated how a pro-environmental environment advocates shared values even amongst participants who benefit from PEB (Norton et al., 2014). Therefore, we hypothesized that.

H5: Pro-environmental psychological climate positively influences pro-environmental behaviors.

2.1.6 Pro-environmental behaviors and green corporate social responsibility

CSR refers to a firm's social and environmental activities and measures to enhance the wellbeing of all stakeholders (Turker, 2009a). Employees engaged in pro-environmental and socially responsible initiatives are more likely to engage in PEB. These claims can be explained in the context of social identity theory (Ashforth and Mael, 1989). An organization's success can be achieved when the PEB of the employees is compatible with the organizational pro-environmental and beliefs, social responsibilities, goals, and values (Boiral, 2009; Norton et al., 2014; Garavan et al., 2022).

Vlachos et al. (2014) expanded the concept "employees positively responding to CSR" to "employees participating in extra-role behaviors." Workers' impressions of their organization's contributions to environmental CSR practices directly affect their engagement and appreciation of their firm's overall CSR ventures (Vlachos et al., 2014). "Willingness to engage in pro-environmental activities" is an example of employee pro-environmental conduct (Scherbaum et al., 2008; Farrukh et al., 2022). Employees' perceptions of their company's involvement in CSR activities motivate them to participate in the company's CSR programs. Essentially, representative PEB (a kind of extra-job practice) may likewise identify with CSR (Boiral, 2009). This is

also why it is essential to simulate how and when CSR is affected by employees' pro-environmental behaviors.

H6: Pro-environmental behavior positively influences green corporate social responsibility.

2.1.7 Pro-environmental psychological climate and green corporate social responsibility

CSR is typically understood as a "green" behavior focused on responsible environmental stewardship (Dumont et al., 2017), community-based initiatives (Jones, 1980), pro-environmental work climates (Tian and Robertson, 2019), and organizational justice for pro-environmental behaviors, which enhance employees' pro-environmental commitment (Luu, 2018; Farrukh et al., 2020) are significant predictors of employee pro-environmental behaviors. The pro-environmental agenda of an organization not only promotes policies, procedures, and practices regarding environmental sustainability but also signals to employees that ethics and values are central to the organization (Rangarajan and Rahm, 2011; Tian and Robertson, 2019). A green psychological climate not only promotes green behaviors but also inspires employees to demonstrate discretionary, pro-social behaviors (Norton et al., 2017).

H7: Pro-environmental psychological climate positively influences green corporate social responsibility.

2.2 Moderating effects of resistance to change

The reluctance to abandon old habits is one of the common traits of human personality and eventually results in resistance to change among employees (Tichy, 1983; Al-Hajri, 2020). Therefore, a well-organized and effective green administrative system provides support to workers. This occurs when employee perceptions are positive and they are keen to be part of an organization that will improve their value profile (Dechant and Altman, 1994; Al Hashem and Al Shaar, 2022).

Hence, an organization's pro-environmental impression and orientation enhance its appeal to potential candidates (Bauer and Aiman-Smith, 1996). Moreover, organization knowledge management initiatives train workers to extend their understanding of environmental safety. Roy and Thérin (2008) reported that it recovers workers' know-how of assembling information on ecological aspects. However, employees unwilling to adapt and learn new formats and concepts to preserve the environment might negate the green change evolution (Witjes and Lozano, 2016). Clair et al. (1996) suggested that evolving green goals includes deciphering environmental goals into action plans for employees, which relies upon establishing green performance indicators within an organization that emphasize the formation of a set of ecological standards for all workers in the assessment and communication of green strategies. Therefore, performance appraisals are the most effective means for managers and workers to determine the practicality of rewards (Ahmad, 2015).

Jackson and Seo (2010) proposed that rewards would be valuable once a worker's performance was related to the firm's goals. Taylor

et al. (1996) suggested that employees acknowledged green administration culture once firms offered inducements in the form of green rewards. In addition to monetary benefits, non-monetary rewards in terms of public appreciation and encouragement also create a sense of oneness among workers to make them feel honored and privileged to be part of such organizations. Therefore, workers feel more secure and empowered.

As suggested by previous studies, GHRM inside a firm provides a common enticement among workers to further strengthen green empowerment (Gholami et al., 2016) and encourages CSR practices. Similarly, increased resistance to change in a firm unfavorably affects the relationship between GHRM and PEB. Thus, resistance to change makes the connection between green HRM measures and PEB more vulnerable.

Based on the discussion above, the concept of GHRM has attracted significant attention in recent years due to the growing emphasis on sustainable development. However, the success of GHRM practices in promoting pro-environmental behavior among employees may be hindered by resistance to change. The literature suggests that resistance to change negatively moderates the relationship between GHRM practices and employee pro-environmental behavior; thus, organizations must address resistance to change to ensure the success of GHRM initiatives. Therefore, we theorized that.

H8: Resistance to change negatively moderates the relationship between green HRM practices (green performance management and appraisal and green empowerment) and employee pro-environmental behavior.

2.3 Moderating effects of environmental knowledge

Knowledge is a fundamental variable in the effective use of ecological sustainability (Zsóka et al., 2013). Environmental knowledge is information and mindfulness about ecological issues and resolutions. A lack of environmental knowledge may prompt fear and escape from pro-environmental responsibilities (Fryxell and Lo, 2003; Chan et al., 2014; Ali and Kaur, 2021). Green HRM plays a major part in the development of environmental knowledge (Matsuo, 2015). Baumgartner and Winter (2014) reported that green HRM increased ecological mindfulness and information among workers, empowering them to create abilities and certainty to successfully moderate environmental problems, which would help employees grasp and perform eco-friendly behaviors in the working environment.

Information on ecological issues, forms, and solutions increases an individual's anxiety and consciousness to perform his/her job to protect the environment. The workforce's ecological consciousness is a positive combination of ecological knowledge and mindfulness. Barr et al. (2010) proposed that employee green behavior will improve with increased knowledge regarding managing waste and the firm's green policies. Green behavior practices include switching off lights, using bicycles to commute, and trying to use reusable cups (Sorescu et al., 2007). Afsar et al. (2016) reported that environmental knowledge influences worker aims to participate in pro-environmental practices and that passionate firms require a specific level of ecological information and mindfulness. Workers'

participation in embracing eco-friendly practices may increase if the firm ensures the interface of environmental knowledge with green HRM practices (Afsar et al., 2016).

Fernández et al. (2003) proposed that representative mindfulness and aptitudes regarding green practices may enhance the accessibility of green empowerment that urges workers to participate in PEBs. Tariq et al. (2016) reported that green empowerment persuades representatives to participate in green practices, which provides a firm with a competitive edge. Thus, workers with more know-how regarding the firm's green HRM practices and well equipped with required skills will take an interest in preservation practices (Frick et al., 2004).

Based on the discussion above, GHRM practices are increasingly recognized as a means of promoting pro-environmental behavior among employees in organizations. However, the success of GHRM initiatives may depend on employees' environmental knowledge. The literature highlights the importance of promoting environmental knowledge among employees to enhance the effectiveness of GHRM practices for promoting sustainable development. Consequently, an individual's environmental knowledge moderates the association between GHRM practices and the employee's green behavior.

H9: Environmental knowledge positively moderates the relationship between green HRM practice (green empowerment) and pro-environmental behavior.

The conceptual model is depicted in Figure 1.

3 Methodology

3.1 Sample and procedure

The study population was the banking sector. We selected five large-size organizations working under CPEC across Punjab province, Pakistan. In our study, the upper and middle management of the firms were the main informants, as they are the front-line workers responsible for the implementation and compliance of any policy and reform received from the top management. Punjab province was selected because most firms are located in this province. The firms selected for sampling are the largest firms, with 60,311 employees across Pakistan and 37,996 employees across Punjab province.

Structured questionnaires were distributed to collect data. To obtain the desired number of responses, 1,200 questionnaires were emailed, some of which were self-presented. The respondents were also assured of the confidentiality of the survey information. Among 1,200 distributed questionnaires, we received 410 (34.16%); among these, 38 questionnaires were incomplete and eliminated. Therefore, the remaining 380 questionnaires were used as final data. Out of the total 410 questionnaires, 230 were received through email and 180 were self-presented. Table 1 shows the values of descriptive statistics.

3.2 Measures

This study adopted the measurement scale from Jabbour et al. (2010) to measure the green HRM dimensions. Green performance
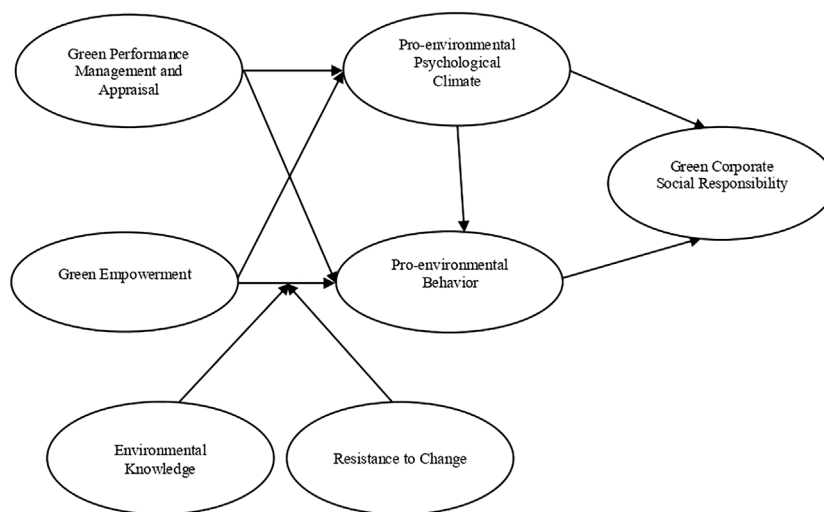
FIGURE 1
heoretical model.

TABLE 1 Descriptive statistics.

	CSRg	EK	GE	GPMA	PEB	PEPC	RTC
CSRg	0.806						
EK	0.434	0.839					
GE	0.618	0.447	0.871				
GPMA	0.533	0.436	0.671	0.852			
PEB	0.706	0.530	0.725	0.681	0.858		
PEPC	0.645	0.487	0.750	0.671	0.709	0.839	
RTC	0.580	0.304	0.640	0.576	0.658	0.646	0.863

TABLE 2 Measurement model.

	Cronbach's alpha	CR	AVE	Factor loading
CSRg	0.945	0.953	0.649	0.704–0.885
EK	0.930	0.943	0.703	0.781–0.883
GE	0.893	0.926	0.758	0.816–0.890
GPMA	0.873	0.913	0.726	0.806–0.895
PEB	0.964	0.968	0.736	0.812–0.910
PEPC	0.894	0.922	0.703	0.755–0.891
RTC	0.829	0.897	0.745	0.810–0.917

CSRG, green corporate social responsibility; EK, environmental knowledge; GE, green empowerment; GPMA, green performance management and appraisal; PEB, pro-environmental behavior; PEPC, pro-environmental psychological climate; RTC, resistance to change.

management and appraisals considered four items and green empowerment was measured by four items (Jabbour et al., 2013). A scale item of five was adapted to measure the pro-environmental psychological climate from Chou (2014). The measures of pro-environmental behavior were extracted from the studies by Kim et al. (2016). Environmental knowledge was measured using seven items adopted by Gatersleben et al. (2002). Resistance to change (RTC) (Dent and Goldberg, 1999) included three items. The measures used for the CSR scale comprised 11 items measuring green CSR in two dimensions adapted from Turker (2009a). The measures used for the CSR were from the scale comprising 11 items measuring green CSR in two dimensions; social CSR with six items and environmental CSR with five items, as adapted from Turker (2009b). A seven-point Likert scale was used to measure all items of the respective measures.

3.3 Measurement model

Data was analyzed using Smart PLS-3. The results of the measurement model in Table 1 present that all the constructs have higher factor loading than the benchmark value of 0.70 (Rehman et al.,

2021; Huo et al., 2022). Second, the validity and reliability of the reflective indicators of the study were assessed using various processes. The results of CR and average variance extracted (AVE) are presented in Table 2 and show that CR values are higher than the threshold value of 0.70 and AVE values are higher than 0.50 (Hair et al., 2011; Nabeel-Rehman and Nazri, 2019) with CR values ranging from 0.897 to 0.968 and AVE values ranging from 0.649 to 0.758.

Furthermore, the Cronbach alpha to verify the internal consistency of the questionnaire shows that all values were greater than the suggested criterion of 0.70, suggesting the adequate reliability of the questionnaire. Assessment of the data normality based on skewness and kurtosis showed a non-normal distribution, with skewness and kurtosis values exceeding the benchmark value of 1.96.

Finally, the heterotrait-monotrait (HTMT) ratios for the analysis of discriminant validity were evaluated (Table 3). These ratios were <0.85, indicating the validity of discriminant reflective constructs (Petter et al., 2007).

TABLE 3 Heterotrait-monotrait ratio (HTMT).

	CSRg	EK	GE	GPMA	PEB	PEPC	RTC
CSRg							
EK	0.438						
GE	0.664	0.465					
GPMA	0.575	0.465	0.757				
PEB	0.731	0.544	0.780	0.741			
PEPC	0.688	0.505	0.839	0.759	0.765		
RTC	0.639	0.312	0.734	0.663	0.726	0.740	

influenced green CSR through the intervening role of the pro-environmental psychological climate and the pro-environmental behavior of employees. The findings supported all of the directly hypothesized relationships. The results directly showed that GE and GPMA significantly influenced the PEB ($\beta = 0.337$, $p < 0.000$ and ($\beta = 0.270$, $p < 0.000$ respectively). Similarly, GE and GPMA significantly influenced the PEPC ($\beta = 0.545$, $p < 0.000$ and $\beta = 0.305$, $p < 0.000$). This study also revealed a significant direct relationship between PEB and PEPC ($\beta = 0.276$, $p < 0.000$). Finally, we observed a significant direct positive relationship of PEB and PEC with the green CSR ($\beta = 0.502$, $p < 0.000$ and $\beta = 0.278$, $p < 0.000$, respectively). Figure 3 shows the moderating effect of KN, while Figure 4 shows the moderating effect of RTC.

TABLE 4 Path coefficients.

	Path coefficient	T statistics	p-values	Decision
GE -> PEB	0.337	4.203	0.000	Support
GE -> PEPC	0.545	7.440	0.000	Support
GPMA -> PEB	0.270	3.539	0.000	Support
GPMA -> PEPC	0.305	4.157	0.000	Support
PEB -> CSRg	0.502	6.264	0.000	Support
PEPC -> CSRg	0.287	3.517	0.000	Support
PEPC -> PEB	0.276	3.495	0.000	Support

FIGURE 2
Structural model.
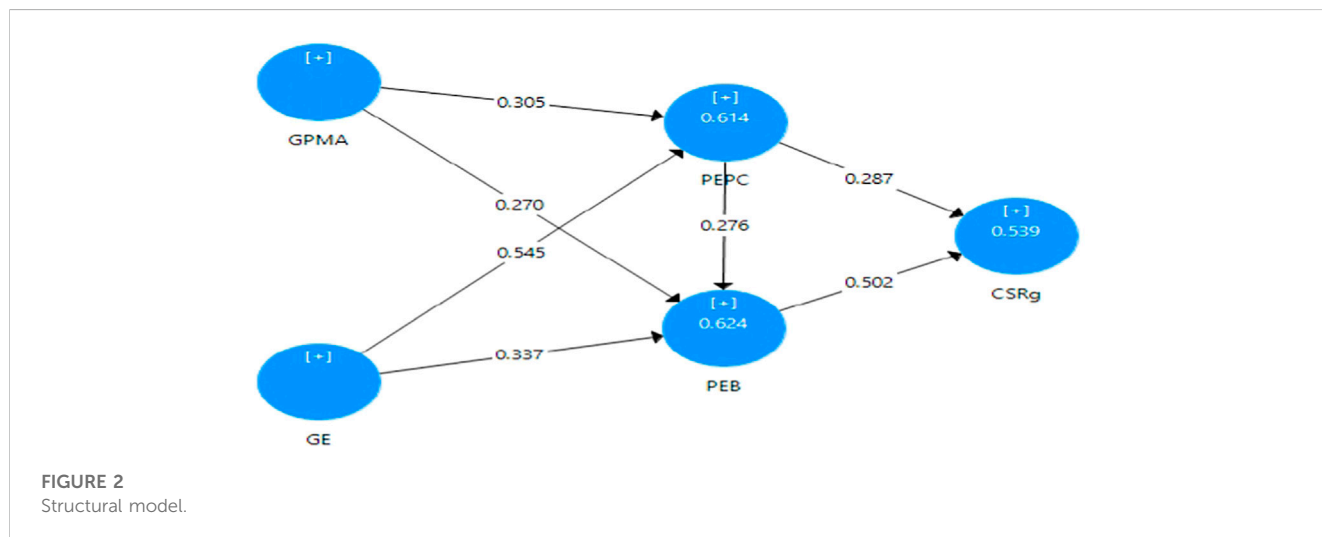
3.4 Structural model

After acceptable findings of the measurement model, the empirical results of the structural model were determined, including the explanatory power, path coefficient values, and path-related significant values (Figure 2). Bootstrapping (5,000 bootstrap samples) was used to evaluate the significance of the paths.

The path coefficient values are shown in Table 4. The results of this study showed that the dimensions of green HRM significantly

3.5 Mediation analysis

This study analyzed the sequential relationship between the constructs, following the mediation process described by Henseler et al. (2015) to examine the mediating role of PEPC and PEB between green HRM and green CSR. The results showed that PEPC mediated the relationship between green HRM practices and green CSR. Moreover, PEB mediated the relationship between green HRM practices and green CSR,
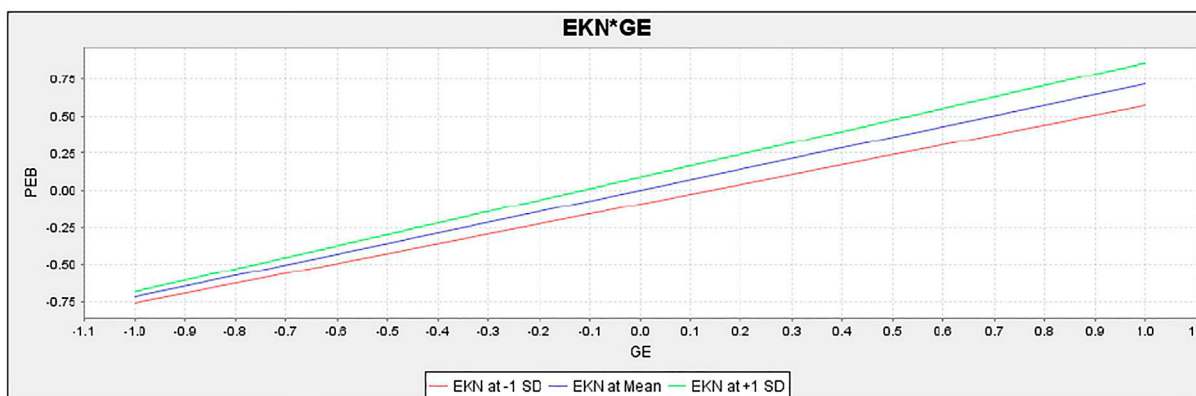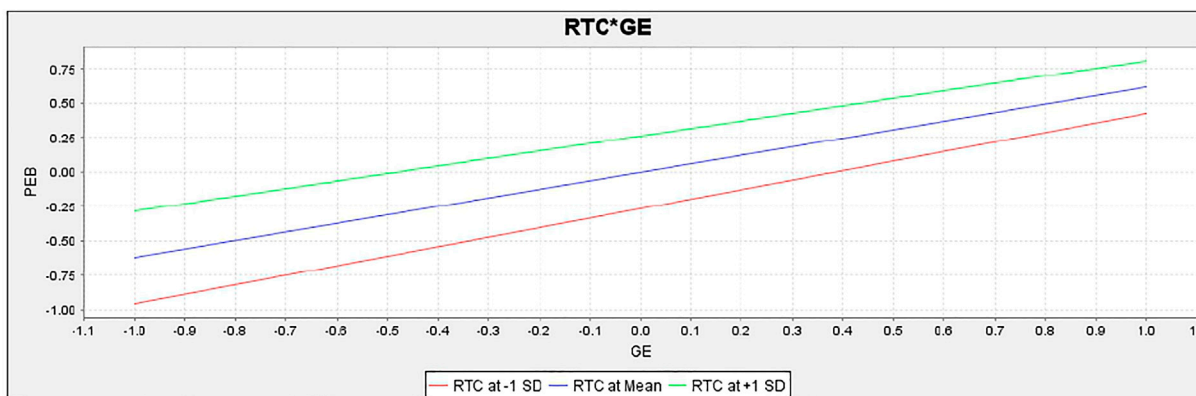
FIGURE 3
Moderating effect of KN.

FIGURE 4
Moderating effect of RTC.

PEPC affected the relationship between green HRM and PEB, and PEB mediated the relationship between green HRM and green CSR. The results of the mediation analysis are presented in Table 5.

In the presence of both mediators, we also studied the basic indirect effects, as shown in Table 6. The path results showed that green HRM significantly affected PEPE, which in turn affected the PEB to influence CSR.

3.6 Moderation analysis

The results of this study showed that RTC has a significant negative moderating effect on the relationship of GE and PEB ($\beta = -0.074$, $p < 0.033$), while EK had no significant moderating effect ($\beta = 0.051$, $p < 0.299$). Therefore, EK neither strengthened nor weakened the relationship of GE with PEB. Hence, the results did not support the hypothesis, as shown in Table 7.

TABLE 5 ediation analysis.

	Path coefficient	T statistics	*p*-values
GE -> PEB -> CSRg	0.169	3.083	0.002
GPMA -> PEB -> CSRg	0.136	2.929	0.003
PEPC -> PEB -> CSRg	0.139	3.364	0.001
GE -> PEPC -> CSRg	0.156	2.960	0.003
GPMA -> PEPC -> CSRg	0.088	2.535	0.011
GE -> PEPC -> PEB	0.151	3.134	0.002
GPMA -> PEPC -> PEB	0.084	2.410	0.016

4 Discussion

In the current research study, we developed and tested a model in which green HRM practices (green performance management

TABLE 6 Specific indirect effects.

	Path coefficient	T statistics	p-values
GE -> PEPC -> PEB -> CSRg	0.076	3.133	0.002
GPMA -> PEPC -> PEB -> CSRg	0.042	2.415	0.016

TABLE 7 Moderating effects.

	Path coefficient	T statistics	p-values
EK*GE -> PEB	0.051	1.018	0.299
RTC*GE -> PEB	−0.074	2.317	0.033

and appraisal and green empowerment) were positively associated with employees' pro-environmental behavior. Pro-environmental psychological climates mediate and environmental knowledge and resistance to change moderate the association between green HRM practices (green performance management and appraisal and green empowerment) and pro-environmental behavior. In addition, pro-environmental behavior mediates the relationship between green HRM practices (green performance management and appraisal and green empowerment) and green CSR.

Green HRM practices influenced employees' pro-environmental behavior. This finding was consistent with those reported by Dumont et al. (2017), in which the pro-environmental conduct of workers was improved in organizations with green HRM practices. Since pro-environmental behavior is not authoritatively evaluated and compensated, these practices are essentially impacted by the individual view of a firm's green climate because of the appropriation of green HRM practices. Recent years have seen increased scholarly interest in the role of HRM' in ecological administration (Jackson and Seo, 2010; Renwick et al., 2013; Farrukh et al., 2020; Ali and Kaur, 2021). The outcomes of the present study indicated that green HRM has an indirect effect, through a pro-environmental psychological climate, on employee pro-environmental behavior. Despite the relationships between green HRM and pro-environmental conduct, the evidence remains inadequate. Furthermore, where environmental awareness and knowledge influenced workers' intentions in the implementation of pro-environmental practices (Al Hashem and Al Shaar, 2022), the present study investigated the moderation of environmental knowledge and awareness upon the correlation between green HRM practices and workers' pro-environmental behaviors. The insignificant moderating effect of environmental knowledge in the current study might be due to the presence of strong employee perceptions due to pro-environment psychological climates resulting from effective green HRM practices, contrary to the findings reported by Saeed et al. (2019).

5 Implications and conclusion

This study provides several theoretical contributions. First, this study investigated the factors that inspire employees to participate in

green practices, which are key to the success of green initiatives (Chan et al., 2014). The findings likewise expand the limited literature on workers' inspiration identified with pro-environmental conduct (Kim et al., 2016; Stekelorum et al., 2019). Second, the pro-environmental psychological climate is the least attended phenomenon and requires further exploration in an organizational setting (Dumont et al., 2017). Third, environmental knowledge affects employees' intention to embrace pro-environmental practices (Safari et al., 2018). Fourth, resistance to change negatively impacts employee pro-environmental practices. Fifth, pro-environmental behavior is positively associated with green CSR practices.

These results have enormous ramifications for supervisors encouraging pro-environmental behaviors. Green HRM activities should initially be integrated into the organization's ultimate goals for sustainable growth. The firm's unconditional support to maintain green behavior at the individual level may benefit from the effective implantation of green HRM practices, a notion that is further strengthened by previous study findings (Guerci et al., 2016; Dumont et al., 2017; Nejati et al., 2017). The administration of the firm should carefully devise job descriptions to attract, educate, retain, and benefit the best employees to better accomplish green goals and effective green CSR.

This study relates in numerous ways to both the government and managers. First, the government must assume a key role in establishing an enabling climate for CSR and providing more incentives to assist organizations in achieving their CSR objectives. The government of Pakistan must also create minimum legal requirements that make companies more accountable and capable of meeting challenges, including eliminating poverty and hunger, identifying relevant and appealing jobs, and promoting human development to ensure long-term growth. Second, managers must understand the role of GHRM in enhancing CSR operations. They might concentrate more on implementing GHRM practices to achieve environmental initiatives, cultivate social relationships with the local community, and derive tangible value by improving corporate reputation among customers. Managers should also be aware of implementing the GHRM theory and use PEPC and PEB as new approaches to developing CSR. Managers should, therefore, define precise meanings for GHRM, PEPC, PEB, and CSR. More funds for the preparation of key personnel involved in CSR initiatives should also be allocated to ensure successful implementation.

Third, managers must focus on activities designed to integrate HRM strategies with CSR policies and successfully execute them. HRM is also required to establish procedures to identify voluntary work and establish standard measures for the training of staff who engage in volunteer activities. Volunteers are more likely to stay if they feel their contributions and dedication are appreciated and rewarded. Managers can enable people to volunteer their time and

skills in community operations to ensure that their society's services are more targeted and effective. Finally, managers must turn CSR strategies into GHRM practices or goals to effectively achieve business objectives. Managers must also consider increasing employee visibility of CSR events, establishing a healthy work atmosphere, and offering more support for employee volunteering.

5.1 Limitations and future research

This study has some limitations, which present future research needs and opportunities. First, the sample in this study was firms working on megaprojects under the China-Pakistan Economic Corridor (CPEC). Thus, research on other sectors and industries can provide different insights and results. Second, this study focused on just one emerging economy, Pakistan. Studies in different emerging economies are needed with the help of other research methodologies. Third, this study focused exclusively on external CSR, which has two dimensions (environmental and social), and ignored internal CSR dimensions. As a result, as Shen and Benson (2016) and Panagopoulos et al. (2016) suggested, further research is needed to understand the effects of GHRM on both internal and external dimensions.

Fourth, although the sample size of this study was sufficient and met the methodological and statistical requirements of the literature, it can be enhanced and check-in from a broader perspective. Fifth, CSR adoption in a firm may depend on other factors, including regulatory and legal requirements; therefore, additional studies are needed to analyze these different factors. Data collection may have been distorted by self-reporting bias, possibly resulting in common method variance (CMV). Thus, future research should utilize more objective measures. Sixth, future studies should investigate other mediators (job satisfaction, green lifestyle, and green commitment) to better understand how green HRM activities impact green CSR. Finally, a longitudinal analysis will provide more significant support for the results of this study.

Data availability statement

The raw data supporting the conclusion of this article will be made available by the authors without undue reservation.

Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent from the participants was not required to participate in this study in accordance with the national legislation and the institutional requirements.

Author contributions

RH contributed to the study conceptualization and writing of the first draft of the manuscript. NR and ST contributed to visualizing and supervising the research. All the authors who contributed to the manuscript read and approved the submitted version.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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