A Systematic Review of Green Human Resource Management: Innovations and Their Impact on Employee Behavior

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Abstract	This study systematically reviews the recent literature on Green Human Resource Management (GHRM) and its influence on employee green behavior (EGB) across various industries from 2015 to 2025. GHRM, which integrates environmental values into HR practices such as recruitment, training, and rewards, is increasingly recognized as a strategic approach to promoting sustainability and pro-environmental actions in organizations. Using a comprehensive search strategy across multiple academic databases and guided by the PCO (Population, Comparison, Outcome) framework, 38 empirical studies were selected and analyzed. Thematic synthesis revealed that the majority of research (81.58%) focuses on employee behavior, while environmental performance, job satisfaction, and organizational performance remain less explored. Key mediators and moderators identified include green organizational commitment, psychological climate, knowledge sharing, and green transformational leadership. The findings highlight that innovative GHRM practices not only foster employee engagement in sustainability initiatives but also contribute to organizational reputation and compliance with evolving environmental standards. However, challenges such as limited resources and resistance to change persist. This review underscores the need for further research on underexplored outcomes and provides practical insights for aligning HR strategies with environmental sustainability goals.
Keywords:	Green Human Resource Management, Employee Behavior, Green HR Practices

INTRODUCTION

Organizations globally are increasingly implementing Green Human Resource Management (GHRM) practices to promote sustainability and engage employees in pro-environmental behaviors (Renwick et al., 2016; Ren et al., 2018). GHRM integrates environmental values into recruitment, training, and performance systems, encouraging voluntary green actions such as reducing waste and advocating for sustainability (Kim et al., 2019; Roscoe et al., 2019). This growing trend reflects a shift in organizational priorities, where environmental responsibility is seen not only as a legal or ethical obligation but also as a strategic advantage. Companies are recognizing that embedding sustainability into HR practices can enhance corporate reputation, attract environmentally conscious talent, and improve overall employee engagement. Moreover, as environmental regulations and stakeholder expectations rise, many firms are proactively adopting GHRM to remain competitive and compliant in a rapidly evolving business landscape.

The population of interest in this research comprises employees across various industries, including manufacturing, technology, services, and retail. Employees play a crucial role in translating organizational sustainability policies into tangible outcomes. Their willingness and ability to engage in pro-environmental behaviors often depend on the HR practices implemented by their organizations.

Research has shown that GHRM significantly influences Employee Green Behavior (EGB), particularly through mechanisms sucaryl as green organizational commitment, green psychological climate, and green identity (Chen et al., 2022; Zhou et al., 2021).

Green knowledge sharing and leadership styles, such as green transformational and spiritual leadership, further moderate or mediate these relationships (Zhang et al., 2021; Li et al., 2023). Moreover, the impact of green attitudes, rewards, and engagement plays a crucial role in motivating sustainability-aligned behaviors (Priyashantha & Yogendran, 2023; Pham et al., 2019). Therefore, it is necessary for the company's strategy to include awareness of this matter to uphold moral values and respect for a healthy environment, which will undoubtedly bring many positive impacts if the company can implement this strategy and further develop its resources. This approach aligns with global efforts to mitigate climate change, reduce waste, and promote social responsibility, benefiting both organizations and the environment

Despite these positive outcomes, the implementation of GHRM remains challenging due to barriers such as limited resources, lack of awareness, and resistance to change (Renwick et al., 2016). While previous studies have emphasized the strategic value of integrating environmental concerns into HR practices, there is a noticeable gap in understanding how employee perceptions, motivation, and organizational culture affect the effectiveness of GHRM.

To address this gap, the present study is guided by several research questions aimed at examining the influence of Green Human Resource Management (GHRM) on Employee Green Behavior (EGB). The main research question explores how Green Human Resource Management (GHRM) influences employee green behavior according to existing studies (1). Follow-up questions examine what mediators and moderators have been identified between GHRM practices and employee outcomes (2). The study further investigates how innovations in GHRM have been explored in relation to employee behavior change (3). Finally, it examines the role of Green Transformational Leadership in strengthening the relationship between GHRM and employee green behavior (4). Through these inquiries, the research seeks to provide deeper theoretical insights for aligning HR strategies with environmental sustainability goals.

METHOD

1.1. Pilot search and research question

A pilot search was conducted to assess the feasibility and effectiveness of the search strategy before initiating the full literature search. This step was essential to ensure that the keywords used were capable of capturing a sufficient number of relevant, high-quality studies related to Green Human Resource Management (GHRM) and its influence on employee behavior. The keywords were carefully selected based on the main themes of the research, including "Green HRM," "Employee Green Behavior," The pilot search helped in refining the use of Boolean operators such as "AND" and "OR" to better connect related terms and improve the relevance of search results. It also guided the team in narrowing down which fields to search (e.g., title, abstract, keywords), ensuring that the selected databases yielded the most comprehensive and relevant publications from 2015 to 2025.

The table below summarizes the pilot search conducted across selected academic databases:

Database	Field Searched	Search string	Time Span
Google Scholar	Title, Abstract, All fields	"Green Human Resource Management" AND "Employee Green Behavior" AND ("Green Knowledge Sharing" OR "Green Organizational Commitment")	2015-2025
ResearchGate	Title,	"Green HRM" AND "Employee Green Behavior"	

Database	Field Searched	Search string	Time Span
	Abstract, Keywords	AND ("Green Leadership" OR "Green Organizational Commitment" OR "Green Innovation")	
ScienceDirect	Title, Abstract, Keywords, Subject Area	Green HRM" AND "Employee Green Behavior" AND ("Sustainable HR practices" OR "Green Motivation")	

The research was guided by the PCO (Population, Comparison, Outcome) framework to craft focused and accountable research questions. The population of interest is employees in organizations implementing GHRM practices. The comparison focuses on innovative implementation of green HR policies such as green training and green reward systems. The expected outcomes are increased employee green behavior, organizational commitment, and knowledge sharing.

1. How does Green Human Resource Management (GHRM) influence employee green behavior according to existing studies?
2. What mediators and moderators have been identified between GHRM practices and employee outcomes?
3. What innovations in GHRM have been explored in relation to employee behavior change?
4. What is the role of Green Transformational Leadership in strengthening the relationship between GHRM and Employee Green Behavior?

2.2 Locating the studies

To gather comprehensive and relevant evidence for this review, a multi-step strategy was used to locate studies that examine the link between Green Human Resource Management (GHRM) and employee behavior. The search focused on widely used academic databases in the fields of human resource management, sustainability, and organizational behavior. The electronic databases selected for the review include Google Scholar, ScienceDirect, and ResearchGate. These databases were chosen for their broad coverage, indexing of high-quality peer-reviewed journals, and accessibility to empirical studies from diverse disciplines. The search targeted articles published between 2015 and 2025, ensuring the inclusion of recent research aligned with current sustainability challenges and HRM innovations. Search strings were developed based on key themes of the study, using Boolean operators to refine the search. Terms such as "Green HRM," "Green Human Resource Management," "Employee Green Behavior," and "Green Organizational Commitment" were used in different combinations depending on the database structure. Each search was adjusted to fit the specific syntax and field options (e.g., title, abstract, keywords) available in the respective databases.

In addition to database searching, manual hand-searching was performed in well-known journals related to sustainability and HRM, including the Journal of Cleaner Production, Sustainability (MDPI), Business Strategy and the Environment, Human Resource Management Journal, and the International Journal of Human Resource Management. These journals were selected based on their relevance to the topic and their frequent publication of studies on green practices in organizations. To further strengthen the search, backward citation tracking was conducted by reviewing reference lists of highly relevant articles to identify earlier foundational works. Likewise, forward citation tracking was done using Google Scholar to find more recent publications that cited key articles. This technique ensured the inclusion of both foundational theories and current developments in the field.

All references retrieved were imported into Mendeley for reference management, while Rayyan.AI was used during the screening process to systematically evaluate article relevance and reduce bias. This combined approach of electronic, manual, and citation-based searching allowed for the thorough

identification of studies to be considered in the review.

2.3 Study selection and evaluation

The study selection process followed a quantitative research approach to ensure the inclusion of high-quality and relevant literature for this review. After retrieving articles through electronic databases, manual hand-searching, and citation tracking, a multi-phase screening process was conducted to filter and evaluate the studies. The inclusion criteria required studies to be published between 2015 and 2025, peer-reviewed, and empirical, whether quantitative, qualitative, or mixed methods. Additionally, studies had to focus on organizations that implemented Green Human Resource Management (GHRM) practices and examined outcomes related to Employee Green Behavior (EGB), Green Knowledge Sharing (GKS), or Green Organizational Commitment (GOC). Studies were excluded if they were purely conceptual or theoretical without empirical data, if they focused on environmental management practices not related to HRM, or if they addressed GHRM but did not examine employee behavioral outcomes.

To evaluate the selected studies, all retrieved articles were first imported into Mendeley for reference management and duplicate removal. Titles and abstracts were then screened using Rayyan.AI to identify potentially relevant studies. This screening was carried out by two independent reviewers to minimize bias and enhance the reliability of the selection process. In cases where disagreements arose between the reviewers, discussions were held to reach a consensus, or a third reviewer was consulted when necessary.

From an initial pool of 200 articles, the screening and evaluation process resulted in 38 empirical journal articles that met all the inclusion criteria and were selected for in-depth review. This rigorous process ensured that the final pool of studies included in the review was both methodologically sound and aligned with the research objectives.

2.4 Analysis and synthesis

To analyze the 38 selected articles, we categorized them based on a specific set of characteristics that were consistent with research goals related to Green Human Resource Management (GHRM). This classification was based on the focus of all research related to GHRM outcomes: employee behavior, environmental performance, job satisfaction, organizational performance, etc. Specifically, employee behavior refers to research that examines behavior in individual environments and influences GHRM practices. Environmental performance includes research linking GHRM to improved sustainability and eco-efficiency. Studies examining the effects of GHRM implementations infrequently or differently. For synthesis, we wanted to identify patterns and connections between these categories to better understand how GHRM practices contribute to the outcomes of different individuals and organizations.

The analysis and synthesis of the reviewed studies employed a thematic method to uncover consistent patterns, connections, and major insights across the literature. Both qualitative and quantitative research findings were explored to evaluate the effects of Green Human Resource Management (GHRM) practices on employee-related outcomes, especially Employee Green Behavior (EGB), Green Organizational Commitment (GOC), and Green Knowledge Sharing (GKS). Recurring themes, such as the role of green training, green rewards, and the mediating or moderating influences of organizational commitment, knowledge sharing, and green transformational leadership were used to group the results.

In quantitative studies, metrics such as effect sizes, correlation strengths, and statistical significance were assessed to determine the robustness of the findings. Qualitative research provided valuable perspectives on employee attitudes, organizational environments, and barriers to implementing GHRM practices. The synthesis brought together both types of evidence to form a well-rounded understanding of how innovative GHRM initiatives influence employee behaviors. When applicable, comparisons across industries and regions were made to highlight contextual differences. This comprehensive approach enabled a deeper exploration of the ways GHRM contributes not only to ecological goals but also to enhancing employee attitudes and actions within organizations.

2.5 Reporting the results

The results of this review were reported systematically, following the structure of the research questions and thematic categories identified during the synthesis process. Both narrative descriptions and summary tables were used to present the results. The narrative highlights key insights, emerging trends, and variations in findings across different contexts and study designs. Tables were used to present study characteristics, including author(s), publication year, methodology, sample, key variables, and main findings. This dual-format reporting enhances clarity, allows for easy comparison, and supports the

transparency and reproducibility of the review process. Where applicable, direct quotes from qualitative studies were included to support thematic interpretations, while statistical data from quantitative studies were summarized to highlight significance and effect sizes. This structured approach ensures that the results are accessible, comprehensive, and aligned with the objectives of the review.

RESULT AND DISCUSSION

Analysis And Synthesis

1.2.   Distribution and statistics

Table 1

Subfileds	Number of Publications	Percentage
Employee Behavior	31	81.58%
Environmental Performance	5	13.16%
Job Satisfaction	1	2.63%
Organizational Performance	1	2.63%
Total	**38**	**100%**

Table 1 presents the distribution of publications across four subfields relevant to this study: Employee Behavior, Environmental Performance, Job Satisfaction, and Organizational Performance. The data clearly show that the majority of research, accounting for 81.58% (31 out of 38 publications), focuses on Employee Behavior, highlighting this area as the primary concern within the literature. Environmental Performance is the next most studied subfield, representing 13.16% of the publications. In contrast, both Job Satisfaction and Organizational Performance are relatively underexplored, each comprising only 2.63% of the total. This distribution suggests that scholarly attention has been predominantly directed toward understanding employee behavior, while other important organizational outcomes such as job satisfaction and overall performance have received comparatively limited focus in recent research.
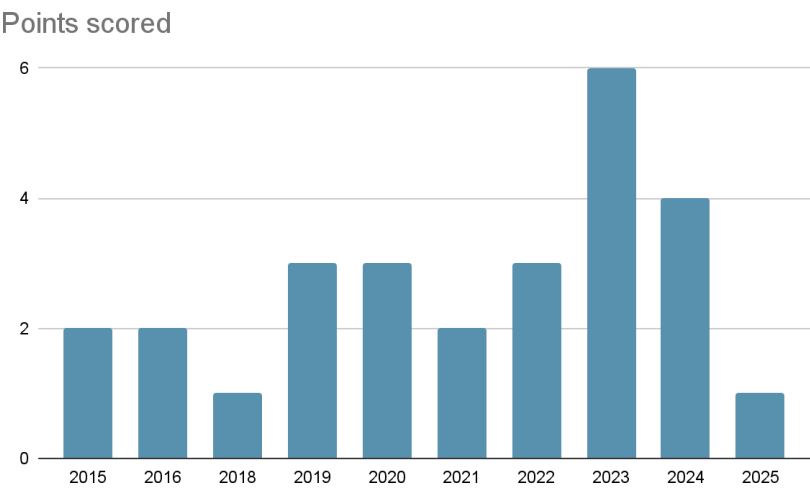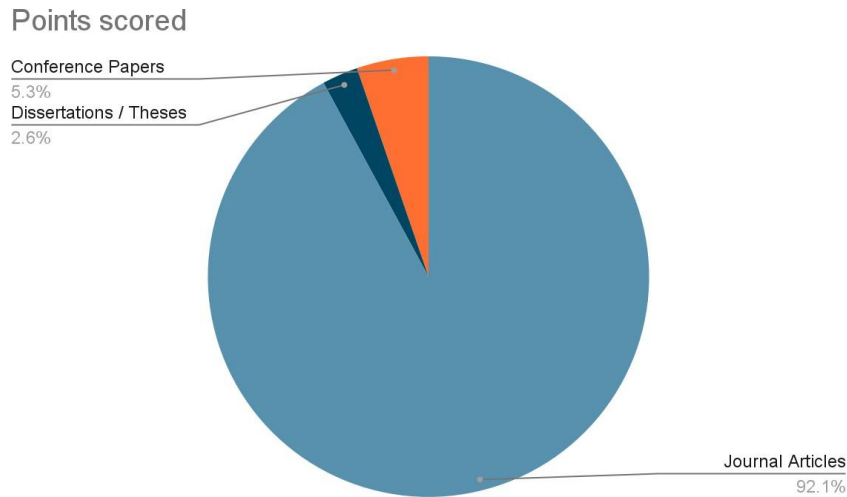

Fig. 1. Time distribution.

Fig. 2. Paper type distribution.

Figure 1 illustrates the time distribution of publications included in this study, spanning from 2015 to 2025. The data reveal a generally increasing trend in research activity over the years, with notable fluctuations. After a relatively steady output from 2015 to 2022, there is a significant surge in publications in 2023, reaching the highest point of six papers. This peak is followed by a slight decline in 2024, with four publications, and a further decrease in 2025. The sharp increase in recent years, particularly in 2023 and 2024, suggests growing scholarly interest and heightened research activity in the relevant fields. Overall, the time distribution indicates that these topics have gained momentum and become increasingly prominent in academic discourse, especially in the last few years.

Based on figure 2, the analysis of the 38 studies reveals that the majority of publications are Journal Articles, with 35 out of the total. This suggests that most of the research on Green Human Resource Management has been published in peer-reviewed journals, which are generally regarded as authoritative and formal sources of scholarly work. In addition, there is 1 Dissertation/Thesis, indicating that some research comes from graduate-level academic work. Moreover, there are 2 Conference Papers, which implies that a portion of the studies was shared at academic conferences, often to present early findings or to engage in scholarly discussions with other experts in the field. In summary, the data shows that journal articles are the dominant form of publication in this area, while dissertations and conference papers make up a smaller share.

Table 2

Field	Subfield	Study
Green Human Resource Management	Employee Behavior	Alegbesogie, 2023; AlKetbi & Rice, 2024; Al-Sabi et al., 2024; Arulrajah & Opatha, 2016; Bombiak, 2019; Cahyadi et al., 2023; Chen & Wu, 2022; Desty Febrian, 2025; El Baroudi et al., 2023; Ercantan & Eyupoglu, 2022; Fayyazi et al., 2015; Iftikar et al., 2022; Karman, 2019; K. Khan et al., 2022; M. H.

		Khan & Muktar, 2020; Khurshid & Ahmad Darzi, 2016; Laeeq, 2021; Meng et al., 2023; Molina-Azorin et al., 2021; Mukherjee et al., 2020; Odhiambo, 2024; Parida et al., 2021; Patwary et al., 2023; Peng et al., 2020; Shafaei & Nejati, 2024; Shafiq et al., 2023; SHOAIB et al., 2021; Tang et al., 2018; Tanova & Bayighomog, 2022; Veerasamy et al., 2024; Xie & Lau, 2023.
	Environmental Performance	Shafaei et al., 2019; Gilal et al., 2019; Jehan et al., 2020; Liu & Zhang, 2022; Yang & Li, 2023.
	Job Satisfaction	Opatha & Hewapathirana, 2019.
	Organizational Performance	Ahmad, 2015.

The *Employee Behavior* subfield within Green Human Resource Management (GHRM) focuses on how green HR practices influence employees' attitudes and actions toward the environment. Several studies have shown that green recruitment and training play a crucial role in shaping employees' environmentally friendly behavior (Khurshid & Ahmad Darzi, 2016; Cahyadi et al., 2023; Chen & Wu, 2022; Desty Febrian, 2025; Veerasamy et al., 2024; Xie & Lau, 2023). Practices such as green recruitment, where companies actively seek individuals with strong environmental values, can foster a workplace culture that supports sustainability (Khurshid & Ahmad Darzi, 2016; Arulrajah & Opatha, 2016). Meanwhile, green training enhances employees' awareness and competencies regarding environmental issues, which in turn promotes ecological behavior at work (Cahyadi et al., 2023; Shafaei & Nejati, 2024; Patwary et al., 2023; Karman, 2019; K. Khan et al., 2022; M. H. Khan & Muktar, 2020). Other research also reinforces the importance of employee involvement in organizational green initiatives through strategic GHRM approaches (Fayyazi et al., 2015; Alegbesogie, 2023; AlKetbi & Rice, 2024; Al-Sabi et al., 2024; El Baroudi et al., 2023).

Furthermore, GHRM approaches have proven effective in increasing employee engagement and motivation to participate in sustainability programs (Mukherjee et al., 2020; Odhiambo, 2024; Peng et al., 2020; Parida et al., 2021). This concept has received attention across various sectors and countries, highlighting the effectiveness of GHRM in embedding environmental behavior into organizational values and culture (Iftikar et al., 2022; Ercantan & Eyupoglu, 2022; Molina-Azorin et al., 2021; Shafiq et al., 2023; SHOAIB et al., 2021; Tang et al., 2018; Tanova & Bayighomog, 2022; Laeeq, 2021; Meng et al., 2023). With the growing urgency of environmental issues, this subfield continues to expand, emphasizing the importance of integrating green strategies into HR management to build sustainable and competitive organizations.

The Environmental Performance subfield looks at how GHRM practices help improve the environmental outcomes of organizations. The studies by Gilal et al. (2019), Jehan et al. (2020), Liu & Zhang (2022), Shafaei et al. (2020), and Yang & Li (2023) collectively underscore the significant role of Green Human Resource Management (GHRM) in enhancing organizational environmental performance. These studies highlight that GHRM practices, such as green recruitment, training, and performance management, positively influence employees' pro-environmental behaviors and attitudes. For instance, Gilal et al. (2019) found that GHRM practices in higher education institutions positively

impact environmental performance through employees' environmental passion. Similarly, Shafaei et al. (2020) demonstrated that GHRM practices enhance organizational environmental culture, leading to improved environmental performance. These findings suggest that GHRM serves as a strategic tool for organizations aiming to achieve sustainability goals by fostering a green organizational culture and encouraging environmentally responsible behaviors among employees.

The Job Satisfaction subfield explores how GHRM practices affect employees' satisfaction with their jobs. Research by Opatha & Hewapathirana (2019) shows that when organizations adopt green practices, employees are often more satisfied with their work. This includes green recruitment, sustainability training, and eco-friendly workplace policies, which contribute to a positive work environment and better job satisfaction. It highlights the connection between environmental sustainability and employee well-being.

The Organizational Performance subfield investigates how GHRM impacts overall organizational success, especially in terms of sustainability and efficiency. Ahmad (2015) examines how green HR practices can improve both the environmental and financial performance of organizations. This subfield shows that organizations that align their HR practices with green initiatives tend to perform better and achieve long-term success while being more sustainable.

Discussion

This section addresses the four specific research questions (SRQs) to offer a comprehensive response to the main research question (RQ) by analyzing the findings from existing studies on Green Human Resource Management (GHRM) and its effects on employee behavior.

SRQ 1: How does Green Human Resource Management (GHRM) influence employee green behavior according to existing studies?

The reviewed studies consistently highlight Green Human Resource Management (GHRM) as a crucial driver for enhancing employee green behavior. Organizations are increasingly integrating sustainability into their human resource practices, and this strategic approach is proving to be effective in shaping employees' environmental behaviors. GHRM encompasses a wide range of HR practices, such as green recruitment, training, performance management, and rewards, all of which play an essential role in fostering environmental awareness and encouraging employees to engage in sustainable actions at work.

A key aspect of GHRM is the green recruitment process, which aims to attract employees who are not only skilled for the role but are also aligned with the organization's environmental values. According to Yang and Li (2023), incorporating environmental values into recruitment processes helps ensure that employees are motivated to contribute to green innovation. By targeting candidates who are already environmentally conscious, organizations can create a workforce that shares common sustainability goals. This proactive approach in recruitment lays a strong foundation for fostering green behaviors within the organization.

Another important practice in GHRM is green training and development. As emphasized by Tang et al. (2017), when organizations offer systematic green HR practices, they cultivate an environmental consciousness among their employees. Green training programs not only raise awareness about sustainability but also equip employees with the skills and knowledge necessary to implement sustainable practices in their work routines. These programs ensure that employees are aware of their individual roles in supporting environmental goals and are motivated to take proactive steps in areas such as resource conservation, waste reduction, and eco-friendly innovations.

Additionally, green performance management systems within GHRM create a framework that tracks and rewards employees for engaging in environmentally responsible actions. Shafiq et al. (2023) showed that GHRM practices can help create a green psychological climate, which refers to an environment that encourages employees to engage in green behaviors by promoting a supportive atmosphere for sustainability. When employees perceive that their organization values sustainability and recognizes efforts towards environmental goals, they are more likely to adopt and internalize these behaviors in their daily activities.

GHRM also plays a pivotal role in fostering green creativity among employees. Shafiq et al. (2023) found that the supportive green psychological climate created by GHRM significantly enhances green creativity, which is the ability of employees to innovate sustainable solutions. Similarly, Khan et al. (2022) argued that GHRM practices contribute to strengthening green commitment, which further amplifies the desire to engage in green behavior. This commitment fosters a sense of responsibility among employees to act in ways that contribute to the organization's environmental objectives.

When green transformational leadership is aligned with GHRM, the impact on employee engagement in green workplace activities is significantly enhanced. According to Peng et al. (2020), green transformational leaders inspire employees by articulating a clear green vision and demonstrating sustainable practices themselves. This leadership style plays a critical role in motivating employees to engage in green behaviors, as they are more likely to follow the example set by their leaders. This synergy between leadership and GHRM practices underscores the importance of creating an organizational culture that actively promotes sustainability.

Furthermore, the concept of green mindfulness, as discussed by Chen and Wu (2022), also plays a vital role in motivating employees to engage in environmentally conscious behaviors. Green mindfulness refers to employees' heightened awareness of the environmental consequences of their actions, which can lead to more intentional and sustainable choices. GHRM practices, particularly those focused on training and awareness campaigns, help cultivate this mindfulness among employees, encouraging them to consider the environmental impact of their decisions and behaviors at work. By promoting green mindfulness, organizations can ensure that sustainability becomes an integral part of the workplace culture, driving employees to consistently make environmentally responsible decisions.

SRQ 2: What mediators and moderators have been identified between GHRM practices and employee outcomes?

The studies reviewed identified several mediators and moderators that help explain how GHRM practices influence employee outcomes. These mechanisms shed light on the factors that enhance or constrain the effectiveness of GHRM in driving pro-environmental behaviors among employees.

One of the most prominent mediators in the relationship between GHRM and employee behavior is green organizational commitment. This term refers to the emotional attachment employees feel towards the organization's environmental goals. Yang and Li (2023) and Khan et al. (2022) both demonstrated that employees who internalize the organization's environmental values are more likely to engage in behaviors that align with these values. When employees feel a strong commitment to the organization's sustainability objectives, their emotional connection translates into tangible actions, such as reducing waste, conserving energy, and actively participating in green initiatives.

Another significant mediator is the green psychological climate, which refers to the shared perception among employees that their organization supports and values environmental sustainability. According to Shafiq et al. (2023), GHRM practices shape this climate by signaling the organization's commitment to environmental values and creating an environment that encourages green behavior. The green psychological climate serves as a cognitive framework for employees, reinforcing the appropriateness and desirability of engaging in sustainable actions. This climate, in turn, mediates the relationship between GHRM practices and employee green behavior, fostering creativity and innovation in the workplace.

Green mindfulness, as discussed by Chen and Wu (2022), also functions as a key mediator in the GHRM-outcome relationship. GHRM practices, such as green training and awareness campaigns, help cultivate green mindfulness among employees. This heightened awareness encourages employees to focus on the environmental impact of their actions, making them more likely to adopt sustainable practices. By fostering green mindfulness, organizations enable employees to be more intentional in their decision-making, further enhancing the positive impact of GHRM practices on green behavior.

Furthermore, Environmental Management Accounting (EMA), as identified by Liu and Zhang (2022), acts as a mediator by bridging the gap between high-level environmental strategies and individual employee actions. EMA refers to the integration of environmental costs and sustainability goals into financial and management accounting systems. By embedding sustainability into HR systems, GHRM helps translate these high-level goals into concrete actions that employees can take in their daily work routines

Leadership style is one of the most critical moderators in the GHRM-employee behavior relationship. Specifically, green transformational leadership plays a pivotal role in moderating the impact of GHRM practices. Green transformational leaders inspire employees by articulating a clear green vision and modeling sustainable behavior. As explained by Peng et al. (2020) and Chen and Wu (2022), when GHRM practices align with green transformational leadership, employees are more likely to engage in green behaviors, as they are motivated by their leaders' example and vision. The positive influence of green transformational leadership strengthens the overall effectiveness of GHRM in promoting sustainability within the organization.

Knowledge sharing is another important moderator. As Yang and Li (2023) and Khan et al. (2022)

noted, promoting a culture of knowledge sharing enhances the effect of GHRM by fostering collaboration and the exchange of sustainable ideas. Employees who share their knowledge and experiences related to green practices are more likely to engage in pro-environmental behaviors, as they can learn from one another and apply best practices across the organization.

At the individual level, green self-efficacy the belief that employees can perform green tasks is a critical moderator. As noted by Li et al. (2023), employees who have high green self-efficacy are more confident in their ability to contribute to sustainability goals. This confidence leads to increased engagement in green behaviors, as employees are more likely to take proactive steps in reducing their environmental impact when they believe their actions can make a difference.

Additionally, spiritual leadership can act as a moderator by instilling a deeper sense of purpose and values in employees. Spiritual leadership fosters a sense of alignment between personal and organizational environmental goals, motivating employees to take responsibility for sustainability efforts (Li W. et al., 2023).

Contextual moderators, such as green office infrastructure (Parida et al., 2021) and employee job satisfaction (Al-Sabia et al., 2024), also play a role in enhancing the GHRM-employee behavior relationship. Green office infrastructure, such as energy-efficient equipment and recycling facilities, makes it easier for employees to adopt sustainable practices. Meanwhile, job satisfaction, which is influenced by the organization's commitment to sustainability, enhances employee engagement in green behaviors, as employees are more likely to contribute to sustainability efforts when they feel satisfied with their work environment.

SRQ 3: What innovations in GHRM have been explored in relation to employee behavior change?

Innovations in Green Human Resource Management (GHRM) have emerged as organizations seek to develop more effective strategies for promoting green behavior among employees. These innovations often focus on integrating sustainability into various HR practices, from recruitment to performance management and rewards systems.

One significant innovation is the integration of green competencies into employee training and development programs. Karman (2024) conceptualized GHRM as an integrated system of HR practices designed to foster a green organizational identity. This system ensures that recruitment, training, performance appraisal, and rewards are all aligned with sustainability objectives. By incorporating green competencies into these HR functions, organizations can ensure that employees are not only aware of sustainability issues but also equipped to implement environmentally friendly practices in their roles.

Additionally, green job satisfaction has emerged as an innovative concept in GHRM. As discussed by Al-Sabia et al. (2024), employees who perceive their organization's environmental practices as responsible are more likely to feel satisfied with their jobs. This satisfaction, in turn, motivates employees to engage in pro-environmental behaviors, such as conserving energy or reducing waste. By recognizing the link between job satisfaction and sustainability, organizations can create a work environment that supports both employee well-being and environmental goals.

Green performance evaluation systems have also become a key innovation in GHRM. Opatha and Hewapathirana (2019) emphasized the importance of defining what "green" means within each HR function, such as recruitment, training, and performance evaluation. By explicitly incorporating sustainability goals into performance evaluations, organizations can better measure and reward employees who contribute to environmental sustainability. This approach ensures that sustainability is a central theme in performance assessments, helping to reinforce the organization's green objectives.

However, the implementation of GHRM is not without challenges. Fayyazi et al. (2014) explored the barriers to GHRM implementation, particularly in environmentally sensitive industries such as oil and gas. They found that despite awareness of green practices, organizational inertia, lack of leadership commitment, and inadequate policy support often hinder the successful adoption of GHRM. This research highlights the need for continuous innovation and adaptation in GHRM practices, particularly in industries where environmental change may conflict with established business practices.

SRQ 4: What is the role of Green Transformational Leadership in strengthening the relationship between GHRM and Employee Green Behavior?

Green Transformational Leadership (GTL) emerged as a pivotal factor in enhancing the relationship between GHRM and employee green behavior. Studies by Peng et al. (2020) and Chen and Wu (2022) illustrated that transformational leaders who model and promote environmental values significantly reinforce the impact of GHRM.

These leaders align individual employee behavior with the organization's environmental goals, fostering an environment that supports sustainable actions. GTL enhances green mindfulness and self-efficacy, creating a culture where employees are more likely to internalize and act on green HR practices.

Moreover, Patwary et al. (2022) suggested that green-inclusive leadership not only supports but also moderates the GHRM-behavior relationship, indicating that leadership is an essential element for maximizing the impact of GHRM initiatives. These findings underscore the importance of leadership in driving sustainable employee behavior and aligning organizational values with pro-environmental goals.

In conclusion, the reviewed studies consistently highlight the multifaceted and impactful role of GHRM in driving employee green behavior. The effectiveness of GHRM is enhanced when integrated with leadership development, organizational culture, and other moderating factors. Future research should continue to explore innovative practices and leadership models to further refine and optimize GHRM strategies for fostering sustainable behavior among employees.

CONCLUSION

This systematic literature review examined how Green Human Resource Management (GHRM) influences employee green behavior, identifying key mediators and moderators, exploring innovations in GHRM practices, and highlighting the role of green transformational leadership. The findings demonstrate that GHRM practices have a direct and substantial positive impact on fostering green behaviors among employees. Mediators such as green organizational commitment, green psychological climate, individual green values, and job satisfaction explain how GHRM translates into sustainable behaviors, while moderators including leadership style, knowledge sharing, and green behavioral intentions further strengthen these relationships. Innovations in GHRM such as the integration of green competencies, green training, and green rewards reflect a growing strategic emphasis on embedding environmental values into core HR functions. Moreover, green transformational leadership significantly amplifies the effectiveness of GHRM by modeling environmental values and enhancing employee engagement in pro-environmental behaviors. Nevertheless, challenges remain in ensuring consistent and widespread application of GHRM practices across industries and organizational levels. Future research should continue to explore these dynamics longitudinally and across different cultural contexts to further advance the strategic role of GHRM in promoting organizational sustainability.

Limitations

Although this study provides broad insights into Green Human Resource Management (GHRM), several limitations must be acknowledged. One major limitation is its full reliance on secondary literature. As a literature review, all findings and analyses are based on previously published studies. This means there is no direct primary data collection from the field, and the accuracy and applicability of the findings are heavily dependent on the quality and context of the reviewed sources.

Another limitation lies in the geographic and industrial scope of the analyzed studies. A large portion of the reviewed research comes from the Asian region, particularly South and Southeast Asia, which have distinct cultural, regulatory, and economic environments. This restricts the generalizability of the findings to other global contexts, such as companies in Europe, the Americas, or Africa. Furthermore, most studies focus on large corporations, leaving the implementation of GHRM in small and medium-sized enterprises (SMEs) underexplored.

Lastly, many of the included studies adopt a cross-sectional approach, meaning data were collected at a single point in time. This research design limits the ability to track behavioral change over time or to assess the long-term impact of GHRM initiatives. Since shifts in employee behavior often evolve gradually and are influenced by numerous organizational and external factors, snapshot studies may not fully capture the enduring effects of GHRM practices.

Further research

To deepen the understanding of GHRM effectiveness, future research should adopt longitudinal methods. This approach would allow researchers to observe how GHRM practices influence employee behavior over time, capturing the gradual development of environmental awareness, commitment, and behavior. Longitudinal studies can also help establish stronger causal links between HR initiatives and sustainable outcomes, which are often overlooked in short-term designs.

It is also important for future research to diversify its geographic and industrial focus. Exploring the implementation of GHRM in underrepresented regions like Africa, Eastern Europe, or Latin America

could provide valuable insights into how local culture and economic conditions influence sustainability practices. Likewise, sectors such as SMEs, informal businesses, and nonprofit organizations deserve more attention, as their structures and capacities for implementing GHRM may differ significantly from large corporations.

Further studies are encouraged to incorporate interdisciplinary approaches by connecting GHRM with fields such as organizational psychology, digital transformation, and employee well-being. Emerging topics like green leadership, sustainable workplace culture, and the effects of remote work on environmental behavior present rich opportunities for exploration. Lastly, future research could benefit from evaluating the economic value of GHRM through cost-benefit analysis to demonstrate that sustainability in HR is not only ethically and socially beneficial but also financially rewarding for organizations.

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