
Green Human Resource Management and Organizational Sustainability in the Digital Era: A Systematic Literature Review

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Abstract

Objective – This study seeks to elucidate how Green Human Resource Management (GHRM) advances organizational sustainability in the digital era, with particular emphasis on identifying the principal organizational and behavioral mechanisms by which this contribution is realized.

Design/Methodology/Approach – This study employs a systematic literature review (SLR) using the PRISMA framework. Through the identification, screening, eligibility, and inclusion stages, 18 peer-reviewed journal articles published between 2021 and 2026 were selected for analysis.

Findings – GHRM contributes to organizational sustainability through green innovation, employee green behavior, environmental commitment, and employee engagement. Green innovation emerged as the dominant mediating mechanism, while digital transformation strengthened sustainability outcomes by supporting innovation, knowledge sharing, and sustainability-oriented decision-making.

Implications – The study concludes that organizational sustainability is achieved through the interaction of GHRM, green innovation, employee behavioral mechanisms, and digital transformation. Future research should develop more integrated models to explain these relationships.

Keywords: Green Human Resource Management (GHRM), Organizational Sustainability, Employee Green Behavior, Digital Transformation, Green Organizational Culture.



INTRODUCTION

Organizational sustainability has become a strategic necessity, propelled by rising environmental issues, increasing stakeholder demands, and a growing focus on Environmental, Social, and Governance (ESG) principles. To ensure long-term competitiveness and adaptability, organizations are increasingly expected to strike a balance between financial performance, environmental responsibility, and social well-being. At the same time, the rapid progress of digital technologies, including artificial intelligence (AI), big data analytics, cloud computing, and Industry 4.0, has significantly altered the operational and strategic decision-making processes of organizations.

These developments present both opportunities and challenges for organizations striving to attain sustainability objectives, necessitating management approaches that effectively incorporate environmental responsibility alongside digital transformation (Calvin *et al.*, 2023; Forum, 2025; Hoque & Lee, 2025; Huang *et al.*, 2025). In this context, Green Human Resource Management (GHRM) has emerged as a vital organizational strategy for promoting sustainability initiatives. GHRM refers to the integration of environmental objectives into a range of human resource management practices, including recruitment and selection, training and development, performance assessment, incentive systems, and employee engagement (Renwick *et al.*, 2013). By implementing these practices, organizations can foster environmental awareness, develop green competencies, and encourage sustainability-focused behaviors among their employees. As a result, GHRM is increasingly recognized not just as an environmentally focused HR practice but as a strategic organizational capability that aids in achieving long-term sustainability objectives. (Amrutha & Geetha, 2020).

The growing importance of GHRM has attracted considerable scholarly attention. Previous studies consistently demonstrate that GHRM positively influences environmental performance, sustainable performance, and organizational competitiveness (Al-Shammari *et al.*, 2022; Alenzi *et al.*, 2023; Mustafa *et al.*, 2023; Wang & Makhbul, 2024). Moreover, green innovation has been recognized as a significant means by which Green Human Resource Management (GHRM) improves sustainability results. (Aftab *et al.*, 2023; Kanan *et al.*, 2023; Zahrani, 2024). Numerous studies highlight the significance of employee behavioral factors, including environmentally responsible behavior, commitment to environmental initiatives, and employee engagement, in strengthening the link between Green Human Resource Management (GHRM) and organizational sustainability (Abdelrahim *et al.*, 2024; Chiarini & Bag, 2024; Najam Shaikh *et al.*, 2025). Collectively, these findings suggest that GHRM contributes to sustainability through multiple organizational and behavioral pathways rather than through direct environmental management practices alone.

Despite the notable increase in scholarly interest in this field, several critical gaps remain. A significant portion of the existing literature focuses on specific sustainability outcomes, such as environmental performance, sustainable performance, and green innovation, which restricts a holistic understanding of the role of Green Human Resource Management (GHRM) in promoting organizational sustainability. Furthermore, mediating factors like green innovation, employee green behavior, environmental commitment, and organizational culture are often studied in isolation, hindering the formulation of a comprehensive explanation of the relationship between GHRM and sustainability. Additionally, while digital transformation is increasingly acknowledged as an essential organizational capability, its role in strengthening the link between organizational sustainability and Green Human Resource Management (GHRM) has not been sufficiently explored. Consequently, current knowledge is fragmented across digital contexts, mediating mechanisms, and theoretical

perspectives. The digital era introduces additional complexity to sustainability management. Recent studies suggest that digital technologies, artificial intelligence, and digital capabilities can strengthen sustainability oriented organizational processes by facilitating knowledge sharing, environmental monitoring, innovation activities, and sustainability oriented decision making (Ciptomulyono *et al.*, 2026; Liu *et al.*, 2024; Ma *et al.*, 2023; Najam Shaikh *et al.*, 2025; Ogbeibu *et al.*, 2024; Setyadi *et al.*, 2025). Nevertheless, empirical evidence that combines GHRM, organizational sustainability, and digital transformation is still quite scarce. Consequently, a thorough synthesis is necessary to elucidate how organizational capabilities, employee behavioral mechanisms, innovation processes, and digital transformation work together to enhance sustainability outcomes.

Based on these gaps, this study addresses the following research questions:

RQ1: What are the dominant organizational and behavioral factors that explain the contribution of GHRM to organizational sustainability?

RQ2: How do green innovation and employee behavioral mechanisms mediate the relationship between GHRM and organizational sustainability?

RQ3: To what extent does digital transformation strengthen the contribution of GHRM to organizational sustainability in the digital era?

This research enhances the current body of literature by providing a comprehensive view of the connection between Green Human Resource Management (GHRM) and organizational sustainability in the context of the digital era. Unlike earlier studies that mainly concentrate on specific sustainability outcomes or separate mediating factors, this review amalgamates evidence from organizational capabilities, employee behavioral mechanisms, green innovation, and digital transformation. Furthermore, the study highlights dominant theoretical frameworks, recurring thematic trends, methodological developments, and new avenues for research.

This review provides a comprehensive understanding of how Green Human Resource Management (GHRM) contributes to organizational sustainability amid digital transformation. Consequently, this study aims to synthesize the current literature on GHRM and organizational sustainability in the digital age through a systematic review conducted in accordance with the PRISMA framework. By identifying key factors, mediating mechanisms, theoretical perspectives, and thematic patterns, this review seeks to enrich the understanding of sustainability-focused human resource management and provide practical insights for organizations aiming to improve their sustainability performance in an increasingly digital environment.

METHODS

In this systematic literature review, the process of selecting primary sources for analysis was conducted in strict accordance with the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework, as depicted in Figure 1. The implementation of this framework was deemed crucial to ensure transparency, methodological rigor, and replicability throughout the entire article selection process (Page *et al.*, 2021). By adhering to this standardized protocol, each candidate article underwent a structured, sequential filtering process, ensuring that only studies of demonstrable relevance and scholarly quality were retained for inclusion in the review.

The PRISMA framework consists of four sequential phases: identification, screening, eligibility assessment, and inclusion. In this study, the PRISMA framework was methodically utilized to identify and assess relevant scholarly articles that explore Green Human Resource Management (GHRM) and its role in promoting organizational sustainability in the digital age. The structured approach of the framework allowed for the accurate identification of relevant studies while

simultaneously facilitating the exclusion of publications that did not meet the established inclusion criteria. This thorough filtering process ultimately enhances the credibility, validity, and thematic consistency of the literature included in this review.

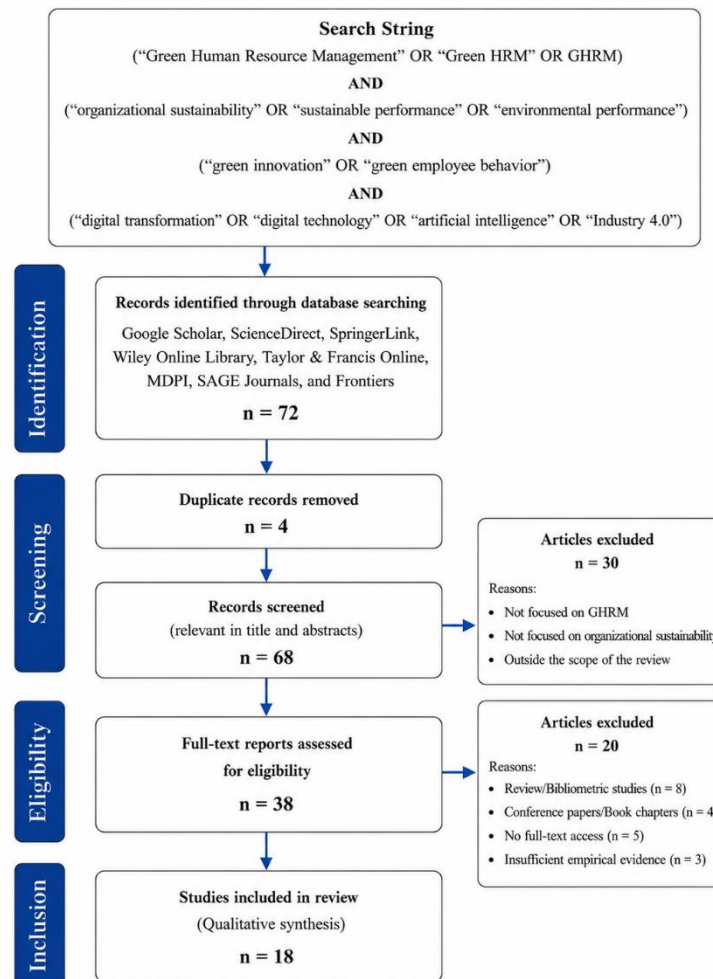


Figure 1. PRISMA Framework

The literature search was conducted systematically through various recognized academic databases and publisher platforms, including Google Scholar, ScienceDirect, SpringerLink, Wiley Online Library, Taylor & Francis Online, MDPI, SAGE Journals, and Frontiers. Only peer-reviewed journal articles published between 2021 and 2026 were deemed eligible for inclusion.

The identification of relevant literature was carried out systematically using structured keywords and Boolean operators to ensure both precision and comprehensiveness in the retrieval process. The search string employed in this review was constructed as follows ("Green Human Resource Management" OR "Green HRM" OR GHRM) AND ("organizational sustainability" OR "sustainable performance" OR "environmental performance") AND ("green innovation" OR "green employee behavior") AND ("digital transformation" OR "digital technology" OR "artificial intelligence" OR "Industry 4.0")

The selection of studies was guided by the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework, a widely recognized protocol for ensuring transparency and rigor in systematic review reporting. At the identification stage, a total of 72 articles were retrieved from all designated databases and platforms. Following the removal of duplicate records ($n = 4$), 68 articles remained and were subsequently subjected to title and abstract screening. At this stage, 30 articles were excluded on the basis that they did not address GHRM as a core construct, failed to examine organizational sustainability, or fell outside the predefined scope of the review.

The final set of 38 articles underwent a thorough full-text assessment to evaluate their eligibility. During this phase, 20 articles were excluded based on several criteria, namely studies classified as review or bibliometric papers ($n = 8$), conference papers or book chapters ($n = 4$), articles with inaccessible full texts ($n = 5$), and studies lacking sufficient empirical evidence ($n = 3$). As a result, 18 articles met all predetermined inclusion criteria and were incorporated into the final review. The complete article selection process is presented in Figure 1.

To ensure the quality, relevance, and methodological consistency of the selected studies, a detailed set of inclusion and exclusion criteria was formulated before the screening process commenced. These criteria served as essential guidelines for the article selection process at every phase of the systematic review, ensuring that only studies that clearly aligned with the primary research objectives were deemed eligible for retention and further detailed analysis.

Table 1. Inclusion and Exclusion Criteria

Criteria	Inclusion Criteria	Exclusion Criteria
Publication Year	Articles published between 2021 and 2026	Articles published before 2021
Language	Articles written in English	Articles written in languages other than English
Document Type	Peer-reviewed journal articles	Conference papers, book chapters, reviews, editorials, notes, dissertations, and reports
Accessibility	Full-text articles available	Full text unavailable
Research Focus	Studies related to Green Human Resource Management (GHRM), organizational sustainability, and digital transformation	Studies unrelated to the research topic
Relevance	Studies addressing the research objectives and questions	Studies with insufficient relevance to the research objectives

As outlined in Table 1, the criteria for inclusion in this review were limited to peer-reviewed journal articles published in English between 2021 and 2026. Studies that did not specifically examine the relationship between Green Human Resource Management (GHRM), organizational sustainability, and digital transformation were excluded from consideration. The stringent application of these established criteria ensured that the final body of literature consisted solely of relevant, methodologically rigorous studies, providing a solid and dependable basis for fulfilling the defined research objectives. To provide an overview of the publication sources included in the final dataset, the selected studies were categorized by journal and publishing platform. This classification highlights the concentration and expansion of academic research on GHRM and organizational

sustainability across leading academic publishing venues, thereby offering a contextual understanding of the current landscape of the literature in this domain.

Table 2. Distribution of Articles

Publisher	Number of Records Identified	Number of Articles Included
MDPI	18	5
Wiley	13	3
Elsevier	10	2
Taylor & Francis	8	2
Frontiers	7	2
Springer Nature	5	1
SAGE	4	1
Conscientia Beam	3	1
Engineering Economics	1	1
Total	72	18

As illustrated in Table 2, MDPI emerged as the most prolific contributing publisher, accounting for the largest share of articles in the final corpus ($n = 5$), followed by Wiley with 3 publications. Elsevier, Taylor & Francis, and Frontiers each contributed two articles, respectively, whereas Springer Nature, SAGE, Conscientia Beam, and Engineering Economics each furnished a single publication. This distributional pattern suggests that scholarly discourse on GHRM and organizational sustainability in the digital era is disseminated across a broad and diverse spectrum of academic publishing outlets, with a discernible concentration among journals that maintain a dedicated focus on sustainability-oriented research themes.

RESULTS AND DISCUSSION

Descriptive Analysis

The data presented in Table 3 indicate a substantial growth in scholarly attention to GHRM and organizational sustainability over recent years. Approximately 83% of the reviewed articles were published between 2023 and 2026, indicating increasing scholarly attention toward sustainability-oriented human resource practices and their role in addressing environmental challenges. This trend also reflects the growing integration of sustainability concerns with innovation, digital transformation, and technological advancement within organizational settings. Although the final corpus consists of 18 articles, the selected studies provide substantial empirical coverage and analytical depth. The reviewed articles encompass diverse geographical settings, including China, Pakistan, Indonesia, Saudi Arabia, Egypt, Palestine, Jordan, Qatar, Vietnam, Malaysia, Italy, and Nigeria. This geographical diversity enhances the external validity of the review findings and enables broader insights into the implementation of GHRM across different economic and institutional contexts. Furthermore, the studies span sectors such as manufacturing, energy, hospitality, higher education, and small and medium-sized enterprises (SMEs), suggesting that the relevance of GHRM extends across multiple organizational contexts.

In addition, the reviewed studies involve a considerable number of respondents, ranging from employees and managers to organizational leaders. Sample sizes vary from 58 respondents to more than 500 participants, providing a substantial empirical foundation for analysis. Rather than emphasizing the number of studies alone, this review focuses on the consistency of findings across different countries, industries, and organizational contexts. The repeated appearance of similar

relationships among GHRM, green innovation, employee behavior, and sustainability performance across the reviewed studies strengthens the robustness of the synthesized conclusions. The findings indicate that quantitative research designs predominated among the reviewed studies, with Structural Equation Modeling (SEM), particularly PLS-SEM, emerging as the most frequently employed analytical approach. This suggests that contemporary GHRM research has progressed beyond simple direct-effect testing and increasingly focuses on examining mediating and moderating mechanisms. Variables such as green innovation, green employee behavior, environmental knowledge, organizational culture, environmental strategy, digital technology, artificial intelligence, and digital transformation frequently appear as intervening factors linking GHRM with sustainability outcomes.

Another notable finding is the increasing incorporation of digital transformation and technology-related variables into GHRM research. Several recent studies highlight the importance of digital technology, artificial intelligence, digital capabilities, and digital transformation in strengthening sustainability-oriented organizational capabilities. This emerging trend suggests that organizational sustainability is no longer viewed solely through environmental management practices but also through the organization's ability to leverage technological resources and digital innovation to support sustainability objectives. Therefore, the intersection between GHRM, digital transformation, and organizational sustainability represents an important emerging research stream that warrants further scholarly attention. Overall, the findings of the reviewed literature indicate that GHRM has evolved from a traditional environmental management practice into a strategic organizational capability that enhances sustainable performance by fostering innovation, shaping employee behavior, and facilitating digital transformation. These patterns provide the foundation for developing an integrated theoretical framework explaining the relationship between GHRM and organizational sustainability in the digital era.

Integrated Theoretical Framework

The literature reviewed indicates that capability-oriented theoretical frameworks, particularly the Resource-Based View and the NRBV, play a significant explanatory role in elucidating the relationship between GHRM and sustainability. These frameworks collectively assert that GHRM is a strategic organizational capability that systematically develops environmental knowledge, green competencies, and sustainability-focused resources, ultimately leading to improved sustainability outcomes for organizations (Mustafa *et al.*, 2023; Najam Shaikh *et al.*, 2025; Ogbeibu *et al.*, 2024). Supporting this organizational-level explanation, employee-centered theoretical frameworks, including the AMO Theory, SET, and SCT, collectively contend that sustainability outcomes depend on the extent to which employees display environmental commitment, active participation, and pro-environmental behavioral tendencies (Chiarini & Bag, 2024; Haile & Singh, 2026; Najam Shaikh *et al.*, 2025). The reviewed literature consistently highlights green innovation as a key mediating mechanism through which GHRM contributes to organizational sustainability. Findings drawn from numerous studies suggest that GHRM nurtures the development of environmental awareness and green capabilities, which subsequently drive green product and process innovation, ultimately producing enhancements across the environmental, social, and economic dimensions of sustainability performance (Aftab *et al.*, 2023; Al-Shammari *et al.*, 2022; Kanan *et al.*, 2023; Wang & Makhbul, 2024; Zahrani, 2024). This pattern suggests that GHRM's contribution to organizational sustainability is predominantly indirect, operating largely through innovation-related mechanisms rather than direct causal pathways.

Table 3. Characteristics of Selected Studies

Author (Year)	Location	Sample	Method	Key Findings
Mustafa et al. (2023)	Pakistan	223 SMEs	PLS-SEM	GHRM enhances competitive advantage through green innovation.
Al-Abbadi & Abu Rumman (2023)	Jordan	268 employees and managers of e-business firms	Survey Analysis	GHRM and innovation improve sustainable performance.
Haile & Singh (2026)	Ethiopia	359 manufacturing employees	PLS-SEM	Employee green behavior improves environmental performance.
Kanan et al. (2023)	Palestine	58 manufacturing firms	PLS-SEM	Green innovation mediates sustainability outcomes.
Setyadi et al. (2025)	Indonesia	300 employees in energy sector	SmartPLS	Digital transformation strengthens sustainability performance.
Ogbeibu et al. (2024)	Nigeria	461 managers from 177 manufacturing firms	Time-lagged survey	Organizational STARA capability enhances environmental sustainability through GHRM practices.
Ma et al. (2023)	China	450 manufacturing firms	PLS-SEM	Digital transformation improves sustainable performance through GHRM.
Liu et al. (2024)	China	Publicly listed manufacturing firms	OLS	Digital technology positively influences green innovation through the allocation of green human resources.
Chau et al. (2024)	Vietnam	Business organizations	PLS-SEM	Technological advancement mediates the relationship between GHRM and sustainable business development.
Alenzi et al. (2023)	Qatar	216 private companies	PLS-SEM	GHRM positively affects sustainable performance.
Abedelrahim et al. (2024)	Egypt	400 hospitality employees	Regression Analysis	Green behavior improves environmental performance.
Najam Shaikh et al. (2025)	Pakistan	427 manufacturing SMEs	PLS-SEM	AI and GHRM enhance environmental sustainability.
Zahrani (2024)	Saudi Arabia	405 university employees	PLS-SEM	Green innovation improves environmental performance.
Ciptomulyono et al. (2026)	Indonesia	Academic staff in universities	PLS-SEM	GHRM and green innovation mediate the relationship between digital technology and university sustainability.
Wang & Makhbul (2024)	Malaysia	SMEs	Cross-sectional survey	Green innovation strengthens sustainable performance.
Chiarini & Bag (2024)	Italy	540 managers	Mixed Methods	Green training improves green performance.
Aftab et al. (2023)	Pakistan	410 manufacturing managers	PLS-SEM	Green innovation enhances environmental performance.
Al-Shammari et al. (2022)	Saudi Arabia	335 SMEs	SEM	Green innovation partially mediates the relationship between GHRM and sustainable performance.

A notable trend identified across the reviewed studies is the increasing integration of digital transformation, artificial intelligence, and digital technologies as key elements within GHRM and organizational sustainability frameworks. These technological advancements have been shown to substantively enhance the effectiveness of GHRM by enabling real-time environmental monitoring, facilitating the diffusion of organizational knowledge, stimulating innovation, and supporting sustainability-oriented decision-making processes (Chau et al., 2024; Ciptomulyono et al., 2026; Liu

et al., 2024; Najam Shaikh et al., 2025). Drawing upon this synthesis of theoretical and empirical insights, this review proposes that organizational sustainability is realized through two interrelated and mutually reinforcing pathways: an organizational pathway, operating through the development of green capabilities and innovation processes, and a behavioral pathway, operating through employee engagement and green behavioral orientations. Digital transformation serves as a cross-cutting enabling mechanism that strengthens both pathways, thereby offering a more holistic and theoretically grounded account of how GHRM contributes to organizational sustainability in the contemporary digital era.

GHRM as a Driver of Sustainable Performance

The findings from the literature consistently indicate that GHRM significantly enhances organizational sustainability. Regardless of industry or geographical context, the literature generally supports the argument that environmentally oriented human resource practices enhance sustainability performance by aligning employee competencies, organizational values, and environmental objectives. Research carried out in Qatar, Saudi Arabia, Malaysia, Vietnam, and Palestine consistently indicates that organizations implementing green recruitment, training, performance evaluation, and reward practices are more capable of attaining superior environmental and sustainability outcomes (Al-Shammari et al., 2022; Alenzi et al., 2023; Chau et al., 2024; Mustafa et al., 2023; Wang & Makhbul, 2024).

Table 4. Dominant Theoretical Perspectives

Theory	Main Focus	Representative Studies
Resource-Based View (RBV)	GHRM develops valuable organizational resources that enhance sustainability performance	(Mustafa et al., 2023; Najam Shaikh et al., 2025; Ogbeibu et al., 2024)
Natural Resource-Based View (NRBV)	Environmental capabilities create a sustainable competitive advantage	(Mustafa et al., 2023)
Ability-Motivation-Opportunity (AMO) Theory	GHRM influences sustainability through employee ability, motivation, and opportunity	(Haile & Singh, 2026; Mustafa et al., 2023)
Social Exchange Theory (SET)	Employees reciprocate organizational green initiatives through positive environmental behavior	(Chiarini & Bag, 2024)
Social Cognitive Theory (SCT)	Environmental behavior is shaped through learning and organizational interaction	(Najam Shaikh et al., 2025)
Digital Capability Perspective	Digital transformation strengthens the effectiveness of GHRM and sustainability initiatives	(Liu et al., 2024; Ma et al., 2023; Ogbeibu et al., 2024; Setyadi et al., 2025)

However, the reviewed studies also reveal that the relationship between GHRM and sustainability is not simply direct in nature. Instead, GHRM serves as a strategic organizational mechanism that creates favorable conditions for sustainability-oriented capabilities and behaviors.

By cultivating environmental awareness, enhancing green competencies, and reinforcing organizational commitment, GHRM enables the embedding of sustainability principles into both routine operational activities and long-term strategic endeavors. These findings suggest that GHRM extends beyond a conventional environmental management practice and functions as a strategic organizational capability that promotes sustainable development and long-term organizational sustainability. The consistency of these findings across countries and sectors indicates that GHRM's contribution extends beyond specific organizational contexts. As a result, GHRM establishes itself as a fundamental component in achieving environmental, social, and economic sustainability, underscoring the view that human resource management occupies a central position within contemporary sustainability strategies.

Green Innovation as the Key Mediating Mechanism

The literature examined consistently identifies green innovation as a crucial mechanism by which GHRM promotes organizational sustainability. While the positive link between GHRM and sustainability outcomes is well documented, the results suggest that this connection is often mediated by innovation-driven processes that link GHRM to organizational performance and sustainability. Consequently, green innovation emerges as one of the most important avenues for translating sustainability goals into concrete organizational results. The examined studies suggest that GHRM supports the cultivation of environmental awareness, green competencies, and sustainability-driven organizational cultures, which in turn promote both green product and green process innovation. By applying environmentally oriented recruitment, training, performance management, and incentive systems, organizations establish conditions that motivate employees to develop and execute environmentally responsible innovations. As a result, green innovation improves resource efficiency, reduces environmental impacts, and enhances overall sustainability performance (Aftab *et al.*, 2023; Al-Shammari *et al.*, 2022; Kanan *et al.*, 2023; Wang & Makhbul, 2024; Zahrani, 2024).

Another important discovery is that the mediating role of green innovation is consistently validated across sectors and geographic contexts, underscoring its broad significance in strengthening the link between GHRM and organizational sustainability. This consistency indicates that innovation serves as a universal link between GHRM and sustainability, irrespective of the organizational environment. Therefore, organizations aiming to enhance sustainability performance should not only adopt GHRM practices but also ensure that these practices foster innovation-driven environments. Overall, the findings indicate that green innovation represents more than a complementary outcome of GHRM. Rather, it functions as a strategic link that converts sustainability-oriented human resource practices into concrete environmental, social, and economic benefits. This recurring pattern underscores the necessity of aligning innovation strategies with GHRM initiatives in order to optimize organizational sustainability outcomes.

Employee Behavioral Mechanisms

Another consistent theme emerging from the reviewed literature is the significance of employee behavioral mechanisms in elucidating the relationship between GHRM and organizational sustainability. While capability-based perspectives emphasize organizational resources and innovation, many studies highlight that sustainability outcomes ultimately depend on employees' willingness to engage in environmentally responsible behaviors. The studies reviewed consistently demonstrate that GHRM impacts sustainability by promoting environmentally friendly employee behavior, enhancing environmental awareness, fostering environmental commitment, and increasing employee engagement. By implementing green recruitment practices, providing

environmental training, conducting performance evaluations, and establishing reward systems, organizations motivate employees to actively participate in sustainability initiatives and to integrate environmental considerations into their daily work. As a result, employees become central agents in converting sustainability-oriented policies into tangible organizational practices (Abdelrahim *et al.*, 2024; Aftab *et al.*, 2023; Chiarini & Bag, 2024; Najam Shaikh *et al.*, 2025). A significant finding from the literature is that employee behavior often serves as a mediating mechanism between GHRM and sustainability outcomes. The reviewed studies suggest that organizations may implement comprehensive GHRM practices; however, sustainability benefits are unlikely to be realized unless employees internalize environmental values and actively support sustainability objectives. This finding highlights the importance of aligning organizational sustainability strategies with employee attitudes, competencies, and behavioral commitment. Overall, the literature demonstrates that sustainability is determined not only by organizational systems and resources but also by employees' active involvement. Consequently, employees' behavioral mechanisms serve as an important conduit through which GHRM contributes to organizational sustainability, underscoring the central role of human capital in achieving long-term environmental and sustainability objectives.

Digital Transformation and Sustainability in the Digital Era

A notable trend identified in the studies analyzed is the growing influence of digital transformation on enhancing the connection between GHRM and organizational sustainability. While previous research primarily focused on environmental management practices and employee behavior, contemporary studies emphasize the significance of digital technologies, artificial intelligence, digital capabilities, and Industry 4.0 in promoting and advancing sustainability efforts.

The reviewed studies indicate that digital transformation amplifies the effectiveness of GHRM by strengthening knowledge dissemination, environmental monitoring, organizational learning, and innovation processes. Digital technologies enable organizations to collect and analyze environmental data more efficiently, support sustainability-oriented decision making, and facilitate collaboration among employees and stakeholders. Consequently, digital capabilities strengthen the organization's ability to implement sustainability-oriented HR practices and achieve long-term sustainability objectives (Chau *et al.*, 2024; Ciptomulyono *et al.*, 2026; Liu *et al.*, 2024; Najam Shaikh *et al.*, 2025; Ogbeibu *et al.*, 2024). Another important finding is that digital transformation rarely operates independently. Instead, digital technologies frequently interact with green innovation, employee behavior, and organizational capabilities. Several studies indicate that organizations achieve stronger sustainability outcomes when digital technologies are integrated with GHRM initiatives rather than implemented as isolated technological investments. This finding suggests that sustainability in the digital era requires the simultaneous development of technological capabilities and human resource competencies.

Furthermore, the reviewed literature reveals that digitalization remains an emerging research stream within the broader GHRM and sustainability domain. Although recent studies increasingly incorporate artificial intelligence, digital technology adoption, and digital innovation networks into their analytical frameworks, empirical evidence remains relatively limited compared with studies focusing on green innovation and employee behavior. This indicates that the intersection between GHRM, digital transformation, and organizational sustainability continues to offer substantial opportunities for future research. Despite the growing prominence of digital transformation within sustainability discourse, the review found that only a limited number of studies explicitly integrated digital technologies into GHRM sustainability frameworks. This finding suggests that digital transformation remains an emerging rather than a mature research stream

within the GHRM literature. Consequently, the relatively limited empirical evidence highlights an important research gap and indicates substantial opportunities for future studies to investigate the interaction between digital capabilities, GHRM practices, and organizational sustainability. The studies collectively indicate that digital transformation enhances GHRM's role in promoting organizational sustainability by strengthening both organizational and behavioral mechanisms. On an organizational scale, digital technologies promote innovation, knowledge management, and environmental oversight. On an individual level, digital platforms foster employee learning, engagement, and sustainability-focused collaboration. Therefore, the results imply that digital transformation serves as a strategic facilitator, increasing GHRM's influence on organizational sustainability outcomes.

Discussion

The findings of this review affirm that GHRM has evolved considerably beyond its conventional role as an environmental management practice, emerging instead as a strategic organizational capability with demonstrated contributions to sustainability performance. Across the reviewed literature, GHRM consistently advances organizational sustainability by developing environmental competencies, sustainability-oriented organizational cultures, and meaningful employee engagement. This pattern reinforces the well-established argument that sustainability objectives cannot be realized through technological or operational measures alone, but require the deliberate embedding of human resource practices within the broader sustainability agenda. A central contribution of this review is the identification of green innovation and employee behavioral mechanisms as the two primary pathways mediating the GHRM sustainability relationship. Green innovation enables organizations to create and execute environmentally sustainable products and processes at the organizational level, while ensuring that employee behavioral factors facilitate the internalization and integration of sustainability objectives into daily organizational practices. Collectively, these pathways indicate that sustainability performance arises from the interplay between organizational capabilities and individual behavioral orientations, rather than from the implementation of GHRM in isolation. The review further highlights the growing significance of digital transformation within this relationship. Digital technologies, artificial intelligence, and organizational digital capabilities are shown to reinforce sustainability-oriented processes by enhancing knowledge sharing, innovation, environmental monitoring, and decision-making. Digital transformation is therefore best understood not as an independent sustainability driver, but as an enabling mechanism that amplifies the effectiveness of existing GHRM practices. Collectively, these findings propose that organizational sustainability in the digital era is most effectively achieved through the integrated development of human, organizational, and technological capabilities. This viewpoint advances the existing literature by providing a more detailed understanding of how GHRM contributes to sustainable organizational performance in contemporary contexts.

CONCLUSION

This systematic literature review examined the relationship between GHRM and organizational sustainability in the digital era by evaluating 18 peer-reviewed journal articles published between 2021 and 2026. The results indicate that GHRM significantly enhances organizational sustainability by fostering environmental competencies, promoting sustainability-oriented organizational cultures, and encouraging employee engagement across various organizational settings. The analysis indicates that the impact of GHRM on sustainability results is mainly indirect. Green innovation is identified as the most common mediating factor, while

employee behavioral aspects, including environmental commitment, green employee behavior, and employee engagement, play crucial roles in connecting GHRM with sustainability performance. These results suggest that the success of GHRM depends not only on the implementation of green HR practices but also on the organization's ability to convert these practices into innovation and significant behavioral transformation. Another important finding is the increasing role of digital transformation in strengthening sustainability-oriented organizational processes. Digital technologies, artificial intelligence, and digital capabilities were found to enhance knowledge sharing, innovation activities, environmental monitoring, and sustainability-oriented decision making. Consequently, digital transformation serves as a supportive mechanism that enhances GHRM's role in promoting organizational sustainability. This review contributes to the literature by proposing an integrated perspective in which organizational sustainability is achieved through the interaction of organizational capabilities, employee behavioral mechanisms, green innovation, and digital transformation. The findings highlight that sustainability in the digital era requires organizations to develop human, organizational, and technological capabilities simultaneously. Future research is encouraged to explore this relationship through longitudinal studies, cross-country comparisons, and more comprehensive investigations of emerging digital technologies within sustainability-oriented human resource management practices.

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