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EVOLUTION OF HUMAN RESOURCE MANAGEMENT COMPARING TRADITIONAL AND GREEN APPROACHES – A SYSTEMATIC REVIEW

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ABSTRACT

Green Human Resource Management (GHRM) has become a crucial organisational approach for embedding sustainability into HR functions, encompassing recruitment, training, performance appraisal, and reward systems. By aligning these practices with environmental objectives, GHRM is expected to positively influence both employee well-being and organisational performance. However, the evidence remains fragmented, with some studies highlighting paradoxical outcomes such as emotional exhaustion. To address this gap, the present study systematically reviewed empirical research to evaluate the impact of GHRM on employee well-being, engagement, pro-environmental behaviours, and organisational sustainability outcomes in comparison with traditional HRM. A comprehensive literature search was conducted across PubMed, Scopus, Web of Science, and ScienceDirect up to May 2025. Eligible studies were identified using SPIDER criteria, and data were extracted independently by two reviewers. The methodological quality of included studies was assessed using the Joanna Briggs Institute (JBI) appraisal tool and CASP checklists. Eighteen studies conducted across Asia, Europe, and Africa were included. Overall, the findings indicated that GHRM positively influences employee wellbeing, job satisfaction, engagement, organisational commitment, and voluntary workplace green behaviours. Mediating mechanisms such as psychological ownership, environmental commitment, organisational culture, and green behaviour were identified, while factors including transformational leadership, individual green values, and supervisory support acted as moderators. Importantly, some studies highlighted negative outcomes, particularly emotional exhaustion, when green initiatives were implemented without adequate organisational or managerial support. This review confirms that GHRM plays a significant role in enhancing both employee and organisational outcomes, but also reveals notable gaps in the literature. Current evidence is predominantly cross-sectional, geographically limited, and concentrated within specific sectors. Future research should adopt longitudinal and multi-method designs across diverse contexts to clarify causal relationships, strengthen generalisability, and address potential risks such as employee burnout associated with sustainability-driven HR practices.

Keyword: Green HRM, Traditional Approaches, Green Approaches, Mechanisms

1. INTRODUCTION

In the past two decades, sustainability has become an essential organizational priority, driven by global concerns over climate change, resource depletion, and corporate social responsibility [1]. Organizations are increasingly expected to integrate sustainability into core strategies, not only through technological innovations but also via human resource practices that foster environmental stewardship [2]. Against this backdrop, Green Human Resource Management (GHRM) has emerged as a pivotal construct, referring to the alignment of HR policies and practices with environmental objectives, encompassing areas such as green recruitment, training, performance appraisal, and reward systems [3].

The significance of GHRM lies in its ability to shape employee attitudes and behaviors in ways that contribute to both environmental and organizational performance[4]. Empirical research has demonstrated that GHRM enhances employee engagement, wellbeing, and pro-environmental behaviors, thereby linking

individual-level outcomes to broader sustainability goals [5][6] (Jabbour & de Sousa Jabbour, 2016; Chen et al., 2021). Moreover, organizational outcomes such as improved environmental performance, competitive advantage, and reputational capital have been attributed to GHRM practices, particularly when mediated by factors like green organizational culture, environmental commitment, and leadership support [7].

However, the existing literature also highlights paradoxical effects. While GHRM encourages voluntary workplace green behaviors and commitment, it may simultaneously generate unintended stressors, such as role overload and emotional exhaustion, especially in resource-constrained environments [8]. These mixed findings underscore the need for further investigation into the contextual and psychological mechanisms that shape GHRM outcomes. Leadership styles, cultural values, and organizational support structures have been identified as potential moderators that determine whether GHRM initiatives foster positive engagement or create undue pressures [9].

Although Green Human Resource Management (GHRM) has been widely examined over the last decade, the literature remains fragmented in terms of outcomes, contexts, and theoretical integration. Existing research has primarily been conducted in Asian and service-oriented industries, such as banking, hospitality, and healthcare, with limited exploration in Western and technologically advanced sectors [10][11]. Moreover, most studies employ cross-sectional and self-reported designs, limiting causal inference and the generalizability of findings [8], [12]. While positive effects of GHRM on eng ssgement, wellbeing, and pro-environmental behaviors are evident, fewer studies have systematically addressed its paradoxical outcomes, such as increased emotional exhaustion and role overload [8]. These inconsistencies highlight the need for a comprehensive synthesis of current evidence.

The aim of this study is to systematically assess the impact of GHRM on employee wellbeing, engagement, pro-environmental behaviors, and organizational performance in comparison to traditional HRM. The objectives are:

(1) to evaluate how GHRM influences individual and organizational outcomes;

(2) to identify mediating and moderating mechanisms that shape these effects;

(3) to examine contextual differences across sectors and regions;

(4) to highlight research gaps and future directions.

2. METHODS:

This study was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)[13] guidelines for conducting systematic reviews and meta-analyses. Compliance with the principles of the Declaration of Helsinki further reinforced the ethical foundation of this review. This review exclusively analyzed secondary data from existing studies and, therefore, qualifies for exemption from informed consent or institutional review board approval

2.1.Search Strategy:

The search strategy was developed by two authors (XX and YY) according to the specified criteria. A comprehensive search of the PubMed, Scopus, and Web of Science databases was independently conducted for eligible studies published up to May 2025. Discrepancies were resolved through consensus with a third author (ZZ). The search strategy combined keywords and Boolean operators to capture variations of Green Human Resource Management (GHRM), employee outcomes, and organizational performance. Keywords included terms related to “green human resource management,” “sustainable HRM,” “employee wellbeing,” “engagement,” “burnout,” “commitment,” and “organizational performance.” Synonyms and subject-specific indexing terms were adapted for each database.

Table 1: Search Strategy employed

Database	Search String
PubMed	("green human resource management" OR "GHRM" OR "sustainable HRM") AND ("employee wellbeing" OR "employee engagement" OR "burnout" OR "organizational performance" OR "pro-environmental behavior" OR "commitment")
Web of Science	TS=("green human resource management" OR "sustainable HRM") AND TS=("employee wellbeing" OR "engagement" OR "burnout" OR "organizational performance" OR "green behavior" OR "commitment")
Scopus	TITLE-ABS-KEY("green human resource management" OR "sustainable HRM") AND TITLE-ABS-KEY("wellbeing" OR "engagement" OR "burnout" OR "performance" OR "green behavior" OR "commitment")
ScienceDirect	("green human resource management" OR "sustainable HRM") AND ("wellbeing" OR "engagement" OR "burnout" OR "performance" OR "green behavior" OR "commitment")

2.2.Study Selection:

The eligibility criteria for this review were structured using the ***SPIDER framework*** (Sample, Phenomenon of Interest, Design, Evaluation, and Research type) to capture the diversity of empirical work on Green Human Resource Management (GHRM). Studies were eligible if they included employees, managers, or organizational leaders across industries, without restrictions on age, gender, or job role, while those focusing solely on students, trainees, or hypothetical case vignettes were excluded. The phenomenon of interest was the implementation of GHRM practices and their influence on employee-level outcomes, such as wellbeing, job satisfaction, engagement, burnout, pro-environmental behavior, and organizational commitment, as well as organizational-level outcomes, including sustainability performance, environmental outcomes, and green culture. Traditional HRM studies without an environmental or sustainability dimension were excluded. Empirical designs using quantitative, qualitative, or mixed-methods approaches were considered, whereas conceptual papers, reviews, book chapters, and dissertations were excluded to ensure methodological rigor. To be included, studies needed to report measurable outcomes linked to GHRM; articles lacking primary data or outcome assessment were excluded. Only peer-reviewed journal articles published in English were considered. The selection process involved two stages: initial title and abstract screening, followed by full-text review of potentially eligible studies. Two reviewers independently assessed each article against the inclusion and exclusion criteria, and disagreements were resolved through discussion with a third reviewer to ensure objectivity. This structured approach ensured that the synthesis was based on methodologically sound and relevant studies, providing reliable insights into the relationship between GHRM, employee outcomes, and organizational performance.

2.3. Data Collection and Quality Evaluation:

Data extraction and quality evaluation were conducted systematically to ensure accuracy and reliability of findings. Following the finalization of eligible studies, two independent reviewers extracted key data using a predesigned standardized form, which captured information on study characteristics (author, year, country, sample size, sector, and population), methodological features (study design, recruitment strategy, and analytical approach), and outcomes of interest related to Green Human Resource Management (GHRM), including employee wellbeing, engagement, pro-environmental behavior, job satisfaction, and organizational sustainability performance. Any discrepancies in data extraction were resolved through consensus or consultation with a third reviewer. To assess the methodological rigor of the included studies, a structured quality appraisal was conducted using the Joanna Briggs Institute (JBI) critical appraisal checklists and Critical Appraisal Skills Programme (CASP) checklist tailored to the specific study design (qualitative, cross-sectional, or case study). Each domain, such as clarity of research aims, appropriateness of methodology, data collection

rigor, ethical considerations, and validity of findings, was independently scored by the two reviewers. Studies were then rated as low, moderate, or high risk of bias based on cumulative judgments across domains. This dual approach of systematic data collection and structured quality evaluation ensured that the synthesis relied on credible, methodologically sound evidence, strengthening the reliability and applicability of the review findings.

2.4. Results:

A systematic search was conducted across multiple electronic databases, including PubMed (n = 26), Scopus (n = 483), Web of Science (n = 994), and ScienceDirect (n = 784), yielding a total of 2,287 records. An additional 79 records were identified through websites (n = 26) and citation searching (n = 53). After removing 257 duplicates, 2,030 unique records were screened. Of these, 1,057 records were excluded at the title and abstract stage due to irrelevance. A total of 973 reports were sought for retrieval; however, 428 could not be retrieved, leaving 545 reports for full-text assessment. During eligibility screening, 528 reports were excluded for reasons including wrong outcomes (n = 296) or different interventions (n = 232). From other sources, 79 reports were screened, of which 48 were not retrieved, and 31 underwent full-text review. Nineteen were excluded for irrelevant interventions and 12 for irrelevant outcomes. Ultimately, 17 studies met the inclusion criteria and were incorporated into the review. This rigorous selection process ensured that only studies directly addressing the impact of Green Human Resource Management (GHRM) versus traditional HRM on employee well-being and burnout were included.

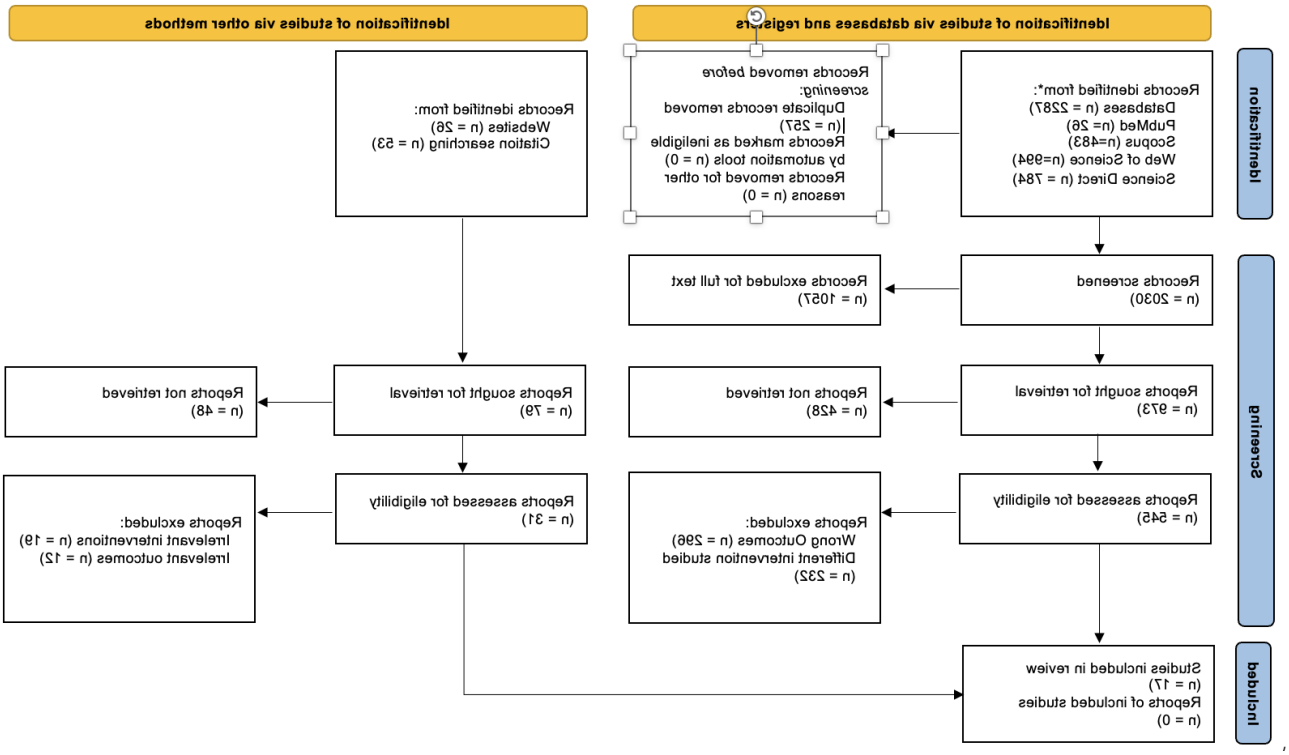

Figure 1: PRISMA Flow Chart

2.5. Characteristic Table:

The included studies span a diverse range of countries, sectors, and methodological approaches, offering a comprehensive understanding of the impact of Green Human Resource Management (GHRM) on employee and organizational outcomes. Geographically, research was conducted across Asia (China, Pakistan, India, Indonesia), Europe (Spain, Portugal, Turkey), Africa (Ghana), and the Middle East, reflecting both developed and emerging

economies. Sample sizes varied considerably, from small exploratory studies (e.g., Rathore, 2025; n=45) to large-scale surveys (e.g., Iftikhar et al., 2021; n=489 employees and 24 managers), ensuring both depth and breadth of evidence. The populations studied ranged from sector-specific groups such as healthcare workers, hotel employees, and winery staff, to broader managerial and cross-industry samples. Outcomes measured primarily focused on employee-level variables, including wellbeing, engagement, green behavior, creativity, and psychological constructs such as ownership and environmental commitment. Several studies extended to organizational-level outcomes, such as sustainable performance, green organizational culture, and firm environmental performance. Mediation and moderation effects were widely tested, with constructs like transformational leadership, green values, and supervisory support frequently explored. Overall, the studies consistently demonstrated that GHRM enhances employee engagement, wellbeing, and pro-environmental behaviors, while also contributing to broader sustainability and organizational performance outcomes, though some studies highlighted potential trade-offs, such as emotional exhaustion. This breadth underscores the multifaceted influence of GHRM across cultural and organizational contexts

Table 2: Characteristics of the included studies

Author (Year)	Country	Sample Size	Inclusion Population	Outcomes Measured	Key Findings
Noor et al. (2023)[12]	Indonesia	Not specified (bank employees)	Employees from the green banking sector	Employee Engagement (affective, cognitive, behavioral)	GHRM significantly improved **employee engagement**, especially when combined with transformational leadership. Demonstrates that GHRM contributes to workplace engagement and indirectly supports employee wellbeing.
Baykal & Bayraktar (2022)[14]	Turkey	255	Manufacturing sector, white-collar employees	Work engagement, psychological ownership	GHRM increased work engagement; psychological ownership mediated the relationship. Supports social identity theory.
Martinez-Falco et al. (2024)[7]	Spain	196	Wineries	Sustainable performance (SP), Employee Wellbeing (EW), Work Engagement (WE)	GHRM positively influenced sustainable performance; EW and WE partially mediated the effect. First study to show mediation in Spanish wineries.
Yuan et al. (2024)[8]	China	Not specified	Employees in Chinese organizations	Voluntary workplace green behavior (VWGB), emotional exhaustion, environmental commitment	GHRM positively affected VWGB via environmental commitment, but also decreased VWGB via emotional exhaustion; supervisory support mitigated emotional exhaustion effects.
Gyensare et al. (2023)[15]	Ghana	249	SMEs	Subjective well-being, Employee green behavior (EGB), Resource commitment	GHRM positively influenced EGB; EGB mediated GHRM's effect on subjective well-being; resource

					commitment strengthened the effect.
Chen et al. (2021)[16]	China	358	Oil and mining industry	Voluntary workplace green behavior, green creativity	Perceived GHRM positively affected VWGB and green creativity; mediated by green psychological climate and harmonious environmental passion.
Din et al. (2025)[17]	Pakistan	402	Healthcare sector, nurses	Employee well-being, engagement with environmental initiatives, employee green behavior, individual green values	GHRM positively influenced green behavior, well-being, and engagement; green behavior mediated effects; individual green values moderated outcomes.
Noor et al. (2023)[12]	Indonesia	363 green bank employees	Banking sector employees	Employee engagement, transformational leadership	GHRM improved employee engagement. Transformational leadership moderated effects. Specific practices (recruitment, training) had varied effects on engagement dimensions.
Bangwal et al. (2025)[18]	India	281 employees	Hospitality (hotels)	Pro-environmental behavior (task-related & proactive), environmental commitment	GHRM promoted pro-EB and enhanced environmental commitment; findings supported AMO and social exchange theory.
Ahmad et al. (2023a)[19]	Pakistan (Lahore, Rawalpindi, Multan)	232 managers (medium & large firms)	Managerial employees	Green organizational culture, pro-environmental behavior, green values	GHRM practices positively impacted green organizational culture, which mediated pro-environmental behavior. Green social capital and values also supported behavior change.
Iftikhar et al. (2021)[20]	Pakistan	489 employees + 24 managers	Hotel industry	Green service recovery performance (GSRP), employee environmental commitment	Employee environmental commitment mediated GHRM–GSRP link; transformational leadership moderated GHRM–EEC relationship.
Yin (2023) [21]	Not specified (case studies: Nakilat, Ctrip.com)	Not specified	Employees in organizations implementing GHRM	Job satisfaction, organizational social evaluation, environmental performance	GHRM positively influenced job satisfaction, social evaluation, and environmental performance. Aligns with soft HRM

					principles and fosters a culture of sustainability.
Rathore (2025)[22]	Not specified	45	Employees across different industries	Employee motivation, job satisfaction, organizational commitment	Positive correlation between GHRM practices and employee outcomes. Environmentally responsible HR initiatives enhance motivation, satisfaction, and commitment.
Elshaer et al. (2023)[23]	Not specified	328	Employees from five-star hotels	Brand citizenship behavior (BCB), organizational pride, individual green values	GHRM positively affected BCB, mediated by organizational pride; individual green values moderated the relationship. Employees with strong green values exhibited more BCB.
Ren & Hussain (2023)[24]	China	306	Manufacturing company employees	Employee environmental performance, firm environmental performance	GHRM positively affected employee and firm environmental performance. Employee environmental orientation partially mediated effects; higher involvement amplified benefits.
Freire & Pieta (2022)[25]	Portugal	120	Employees in ISO 14001 certified industrial companies	Job satisfaction, organizational citizenship behavior (OCB), organizational identification	GHRM influenced OCB through mediation by job satisfaction and organizational identification, demonstrating positive impacts on employee attitudes and behaviors.
Yuan et al. (2021)[26]	China	396	Employees in various organizations	Voluntary workplace green behavior (VWGB), Employee environmental commitment, Emotional exhaustion, Supervisory support	GHRM positively influenced VWGB through environmental commitment, but also increased emotional exhaustion, which reduced VWGB. Supervisory support mitigated the negative impact of GHRM on emotional exhaustion and VWGB. Highlights both positive and potentially adverse effects of GHRM on employee well-being.

Risk of Bias Assessment on the included Cross-sectional Studies:

The risk of bias assessment using the JBI checklist revealed that the majority of the included studies

demonstrated methodological rigor, particularly in their clear inclusion criteria, adequate description of study settings and populations, and valid measurement of both exposures and outcomes. Almost all studies provided consistent and standardised criteria for outcomes such as employee wellbeing, engagement, and pro-environmental behavior, ensuring comparability across contexts. Similarly, the use of validated scales and established constructs (e.g., employee engagement, green organizational culture, or environmental commitment) strengthened the reliability of findings. However, a recurring limitation across studies was the inconsistent handling of confounding factors. While some studies (e.g., Baykal & Bayraktar, 2022; Martinez-Falco et al., 2024; Chen et al., 2021) identified and partially adjusted for confounders, many others either did not specify potential confounding variables or failed to statistically account for them. This gap is important, as workplace outcomes such as wellbeing and burnout are likely influenced by broader organizational, cultural, and individual factors. Consequently, the lack of control for confounders introduces a moderate level of bias. Statistical analysis was generally appropriate and aligned with study aims, with most studies employing regression modelling, mediation, or moderation analyses to test theoretical pathways. Nevertheless, the absence of longitudinal or experimental designs in the majority of included studies limited causal inference, increasing the overall risk classification from low to moderate. In summary, most studies were judged to have a **low–moderate to moderate risk of bias**, driven mainly by confounder-related limitations rather than flaws in measurement or analysis. This suggests that while findings provide valuable insights into the impact of GHRM on wellbeing and burnout, results should be interpreted cautiously, particularly in relation to causal claims.

Table 3: Risk of Bias on the included cross sectional studies

Study	**Clear inclusion criteria**	**Detailed description of subjects & setting**	**Valid/reliable measurement of exposure**	**Objective/standard criteria for outcomes**	**Identification of confounders**	**Strategies to deal with confounders**	**Valid/reliable outcome measurement**	**Appropriate statistical analysis**	**Overall Risk**
Noor et al. (2023) **)[12]**	Yes	Yes	Yes	Yes	No	No	Yes	Yes	**Moderate**
Baykal & Bayraktar (2022) [14]	Yes	Yes	Yes	Yes	Partial	Partial	Yes	Yes	**Low–Moderate**
Martinez-Falco et al. (2024) [7]	Yes	Yes	Yes	Yes	Partial	Partial	Yes	Yes	**Low–Moderate**
Yuan et al. (2024) [8]	Yes	Yes	Yes	Yes	No	No	Yes	Yes	**Moderate**
Gyensare et al. (2023) [15]	Yes	Yes	Yes	Yes	Partial	Partial	Yes	Yes	**Moderate**
Chen et al. (2021) [16]	Yes	Yes	Yes	Yes	Partial	Partial	Yes	Yes	**Low–Moderate**
Din et al. (2025)[17]	Yes	Yes	Yes	Yes	Partial	Partial	Yes	Yes	**Low–Moderate**
Bangwal et al. (2025) **[18]**	Yes	Yes	Yes	Yes	No	No	Yes	Yes	**Moderate**

Ahmad et al. (2023) **[19]**	Yes	Yes	Yes	Yes	No	No	Yes	Yes	**Moderate**
Iftikhar et al. (2021) **[20]**	Yes	Yes	Yes	Yes	Partial	Partial	Yes	Yes	**Low–Moderate**
Elshaer et al. (2023) [23]	Yes	Yes	Yes	Yes	Partial	Partial	Yes	Yes	**Low–Moderate**
Ren & Hussain (2023)[24]	Yes	Yes	Yes	Yes	Partial	Partial	Yes	Yes	**Moderate**
Freire & Pieta (2022)[25]	Yes	Yes	Yes	Yes	Partial	No	Yes	Yes	**Moderate**

RoB assessment on the included Qualitative Studies:

The risk of bias (RoB) assessment of the qualitative and exploratory studies indicated a moderate-to-high overall risk, primarily due to methodological limitations. Yin (2023) demonstrated clear research aims, appropriate methodology, and rigorous data collection, with findings well aligned to research objectives. However, the study only partially addressed reflexivity, raising concerns about potential researcher influence on interpretation. In contrast, Rathore (2025) was judged to carry a high risk of bias owing to its very small sample size (n=45), lack of justification for research design, and limited detail on recruitment and data collection procedures. Reflexivity was not considered, and ethical reporting was unclear, further undermining credibility. Although both studies provided valuable insights into the relationship between GHRM and employee outcomes, these methodological weaknesses limit the strength and generalisability of their findings. As such, results from these studies should be interpreted cautiously and considered supportive rather than conclusive evidence.

Table 4: Risk of Bias assessment on the included Qualitative studies

Study	**Clear research aims**	**Appropriate methodology**	**Research design justified**	**Recruitment strategy appropriate**	**Data collection rigorous**	**Reflexivity considered**	**Ethical issues addressed**	**Clear statement of findings**	**Value of research**	**Overall Risk**
Yin (2023) [21]	Yes	Yes	Yes	Yes	Yes	Partial	Yes	Yes	Yes	**Moderate–High**
Rathore (2025) [22]	Yes	Partial	No (very small n=45, exploratory)	Partial	Partial	No	Unclear	Yes	Partial	**High**

Employee Wellbeing and Burnout

The relationship between Green Human Resource Management (GHRM) and employee wellbeing has been a growing focus of recent empirical studies, reflecting the dual potential of sustainable HR practices to enhance positive outcomes while also introducing new pressures. Several studies demonstrate that GHRM practices positively contribute to employees' subjective wellbeing, job satisfaction, and organizational commitment. For example, Din et al. (2025) found that GHRM improved nurses' wellbeing and engagement with environmental initiatives, with green behavior acting as a mediator. Similarly, Gyensare et al. (2023) reported that GHRM enhanced subjective wellbeing in SMEs, mediated

by employee green behavior and strengthened by resource commitment. Broader attitudinal outcomes, such as job satisfaction and organizational commitment, have also been positively linked to GHRM, as highlighted in Rathore (2025) and Freire and Pieta (2022), suggesting that environmentally responsible HR practices foster a sense of organizational identification and loyalty.

However, the evidence also indicates that GHRM can create unintended stressors. Yuan et al. (2021, 2024) identified a paradoxical effect: while GHRM promoted voluntary workplace green behavior through environmental commitment, it simultaneously heightened emotional exhaustion, which in turn reduced such behaviors. Importantly, supervisory support was found to buffer the negative impact of GHRM on exhaustion, suggesting that organizational context plays a critical role in shaping outcomes. Complementing this, Yin (2023) demonstrated that GHRM enhances job satisfaction and social evaluation, reinforcing its potential to improve employee wellbeing when embedded in supportive organizational cultures.

Work Engagement and Employee Commitment

Work engagement and employee commitment represent critical outcomes of Green Human Resource Management (GHRM), as sustainable HR practices are increasingly recognized for their ability to foster deeper employee involvement and loyalty. Noor et al. (2023) demonstrated that GHRM significantly enhanced employee engagement in Indonesia's green banking sector, particularly when combined with transformational leadership, which moderated the relationship by amplifying affective, cognitive, and behavioral engagement dimensions. Similarly, Baykal and Bayraktar (2022) found in the Turkish manufacturing sector that GHRM not only increased work engagement but also did so through the mediating role of psychological ownership, lending support to social identity theory by showing that employees internalize organizational sustainability values.

Expanding this evidence, Martinez-Falco et al. (2024) reported that in Spanish wineries, GHRM had a positive effect on sustainable performance through the partial mediation of employee wellbeing and work engagement, highlighting engagement as a critical mechanism linking HR practices to organizational sustainability. In the healthcare context, Din et al. (2025) found that GHRM fostered engagement with environmental initiatives among nurses, with green behavior serving as a mediator and individual green values moderating the strength of this relationship. These findings underscore that engagement outcomes extend beyond work-related enthusiasm to encompass active participation in environmental initiatives.

More broadly, Rathore (2025) confirmed positive correlations between GHRM practices and employee motivation, job satisfaction, and organizational commitment across diverse industries, suggesting that sustainable HR initiatives consistently promote employee alignment with organizational goals. Collectively, the evidence illustrates that GHRM enhances engagement and commitment by shaping employees' psychological connections to their organizations, while contextual factors such as leadership style, cultural values, and sectoral characteristics determine the magnitude of these effects.

Green and Pro-Environmental Behaviours:

A central outcome of Green Human Resource Management (GHRM) is the promotion of pro-environmental behaviors among employees, both in task-related and discretionary domains. Chen et al. (2021) demonstrated in China's oil and mining sector that perceived GHRM positively influenced voluntary workplace green behavior (VWGB) and green creativity, with these effects mediated by a green psychological climate and harmonious environmental passion. Similarly, Gyensare et al. (2023) highlighted that in Ghanaian SMEs, GHRM enhanced employee green behavior (EGB), which subsequently mediated improvements in subjective wellbeing, particularly when supported by strong resource commitment.

In the hospitality sector, Bangwal et al. (2025) found that GHRM encouraged both task-related and proactive pro-environmental behavior, mediated by environmental commitment, providing empirical support for the Ability-Motivation-Opportunity (AMO) and social exchange frameworks. Complementing this, Ahmad et al. (2023a) demonstrated that GHRM

fostered a green organizational culture, which mediated pro-environmental behavior among managerial employees, while green social capital and individual green values further strengthened this relationship.

Additional evidence highlights context-specific pathways. Iftikhar et al. (2021) found that employee environmental commitment mediated the link between GHRM and green service recovery performance in the hotel industry, with transformational leadership acting as a moderator. Elshaer et al. (2023) similarly reported that GHRM enhanced brand citizenship behavior in the hotel sector, mediated by organizational pride and moderated by individual green values. Yet, Yuan et al. (2021, 2024) revealed a dual mechanism in Chinese organizations: while GHRM fostered VWGB through environmental commitment, it also elevated emotional exhaustion, which diminished VWGB unless supervisory support was present.

Mediating and Moderating Mechanisms

The relationship between Green Human Resource Management (GHRM) and employee outcomes is rarely linear; instead, it is shaped by a range of mediating and moderating mechanisms that explain variability across organizational contexts. Ahmad et al. (2023a) highlighted that green organizational culture serves as a key mediator between GHRM practices and pro-environmental behavior among managerial employees, while green social capital and individual values further strengthened this effect. Similarly, Iftikhar et al. (2021) demonstrated that employee environmental commitment mediated the link between GHRM and green service recovery performance in the hotel industry, with transformational leadership moderating the relationship by enhancing employee commitment to environmental goals.

Research has also emphasized the importance of leadership and organizational support as moderators. Noor et al. (2023) showed that transformational leadership amplified the impact of GHRM on employee engagement, underscoring the role of leadership in reinforcing sustainable HR initiatives. Yuan et al. (2021, 2024) offered a more nuanced view, reporting that while GHRM encouraged voluntary workplace green behavior via environmental commitment, it also increased emotional exhaustion, which in turn reduced green behaviors. Supervisory support mitigated these negative effects, highlighting the protective role of supportive managerial practices.

Further, Din et al. (2025) found that green behavior mediated the influence of GHRM on wellbeing and engagement among nurses, while individual green values moderated these outcomes, strengthening the positive effects of GHRM. Elshaer et al. (2023) also identified organizational pride as a mediator between GHRM and brand citizenship behavior, with green values enhancing the strength of this relationship.

Organizational and Performance Outcomes

Beyond individual-level effects on wellbeing, engagement, and pro-environmental behaviors, Green Human Resource Management (GHRM) has demonstrated significant organizational-level impacts, particularly in relation to sustainability and performance outcomes. Martinez-Falco et al. (2024) showed that in Spanish wineries, GHRM positively influenced sustainable performance, with employee wellbeing and work engagement partially mediating the relationship. This finding highlights how individual attitudes and behaviors, shaped by GHRM, can collectively translate into improved organizational sustainability metrics. Similarly, Ren and Hussain (2023) reported that in Chinese manufacturing firms, GHRM enhanced both employee and firm-level environmental performance. Their study identified employee environmental orientation as a partial mediator, suggesting that fostering individual green orientation is critical to achieving broader organizational environmental objectives.

Yin (2023), using case studies from Nakilat and Ctrip.com, further reinforced these insights by demonstrating that GHRM enhances not only environmental performance but also job satisfaction and organizational social evaluation. This suggests that GHRM not only strengthens sustainability credentials but also improves external perceptions of organizations, thereby supporting reputational capital. Complementing this, Ahmad et al. (2023a) found that GHRM practices promoted a green organizational culture, which mediated the relationship with pro-environmental behaviors. This indicates that GHRM fosters cultural alignment, enabling

organizations to embed sustainability values into their core operations and strategy.

3. DISCUSSION:

The findings from the included studies collectively highlight the multifaceted impact of Green Human Resource Management (GHRM) on employee and organizational outcomes. At the individual level, GHRM consistently enhanced wellbeing, job satisfaction, engagement, and organizational commitment [15], [17], [25], [27]. It also promoted pro-environmental behaviors and creativity across diverse sectors, with mediation through factors such as environmental commitment, green behavior, and psychological ownership [14], [16], [19]. Engagement outcomes were reinforced by transformational leadership and individual green values, underscoring the role of contextual moderators [12], [23].

At the organizational level, GHRM improved sustainability performance, environmental outcomes, and green organizational culture, demonstrating its ability to translate employee-level practices into collective gains [7], [21], [24]. However, evidence also revealed a paradox: while GHRM encouraged voluntary workplace green behavior, it could simultaneously increase emotional exhaustion, highlighting the risk of unintended stressors [8], [26]. Supervisory and leadership support were critical in mitigating these effects. Overall, the evidence demonstrates that GHRM fosters a culture of sustainability, strengthens employee alignment, and enhances organizational reputation, though attention to potential pressures on employees remains essential for maximizing positive outcomes.

The present synthesis reinforces and extends existing literature on the role of Green Human Resource Management (GHRM) in shaping both employee-level and organizational outcomes. Consistent with earlier reviews [1], [28], the findings confirm that GHRM enhances employee wellbeing, engagement, and pro-environmental behaviors by embedding sustainability principles into HR practices. For instance, the observed positive associations between GHRM and wellbeing [17], [29] align with prior studies highlighting that green HR practices foster psychological safety, meaningfulness, and job satisfaction [30]. Similarly, the mediating role of psychological ownership and environmental commitment resonates with social exchange and social identity theories, which posit that employees reciprocate sustainable organizational practices with greater engagement and commitment [31].

At the organizational level, the evidence that GHRM enhances sustainability and environmental performance [7][24] parallels prior meta-analyses suggesting that sustainable HR practices contribute to firm-level environmental and reputational outcomes [32], [33]. Importantly, the paradoxical finding that GHRM can also increase emotional exhaustion [8], [26] reflects emerging critiques that sustainability initiatives may place additional burdens on employees [2], thereby complicating the assumed linear benefits of GHRM. This underscores the importance of supportive leadership and supervisory practices, echoing studies that emphasize leadership's moderating role in mitigating stress while promoting green initiatives [34](Zhang et al., 2019).

Overall, the findings support the growing consensus that GHRM is a critical lever for integrating sustainability into organizational strategy. However, they also highlight the need for balanced implementation that fosters employee wellbeing while minimizing unintended stressors, advancing calls for a more nuanced and context-sensitive understanding of GHRM.

4.RESEARCH GAPS:

Although the evidence from this review highlights the growing role of Green Human Resource Management (GHRM) in shaping employee wellbeing, engagement, pro-environmental behaviors, and organizational sustainability, several research gaps remain. First, most studies relied on cross-sectional survey designs [12], [15], [17], limiting the ability to establish causal relationships. Longitudinal and experimental studies are needed to clarify the directionality of the observed associations and the sustainability of effects over time. Second, while mediating mechanisms such as green behavior, psychological ownership, and organizational pride were frequently explored, moderating factors such as cultural context, sectoral differences, and leadership style have been inconsistently examined, leading to limited understanding of when and for whom GHRM is

most effective. Third, the paradoxical findings of Yuan et al. (2021, 2024)[8], [26] highlight potential unintended consequences of GHRM, such as emotional exhaustion, yet few studies systematically assess negative employee outcomes. This creates a significant gap in understanding the boundary conditions under which GHRM may become counterproductive. Fourth, most research has been concentrated in Asian contexts (China, Pakistan, Indonesia) and specific industries such as banking, hospitality, and healthcare, with little evidence from Western economies, SMEs, or high-tech sectors. Finally, the literature has primarily focused on employee-level outcomes, while organizational-level impacts such as innovation, competitiveness, and long-term sustainability performance remain underexplored. Addressing these gaps would deepen theoretical development and provide more robust, context-sensitive guidance for practitioners implementing GHRM.

5. LIMITATIONS

This review has several limitations that should be acknowledged. First, the included studies were predominantly cross-sectional in design, which restricts causal inference regarding the relationships between GHRM practices, employee outcomes, and organizational performance. Longitudinal or experimental approaches are needed to better establish causality and examine the sustainability of effects over time. Second, there is a strong geographical concentration of evidence, with most studies conducted in Asian contexts (e.g., China, Pakistan, Indonesia), limiting the generalizability of findings to Western economies, SMEs, or technologically advanced industries. Sectoral bias was also evident, with a focus on banking, hospitality, and healthcare, leaving other sectors underrepresented.

Third, the reliance on self-reported measures introduces potential bias, particularly for outcomes such as employee engagement, pro-environmental behavior, and wellbeing. Multi-source or objective indicators of performance and sustainability outcomes could strengthen future research. Fourth, while many studies explored positive outcomes of GHRM, fewer examined potential unintended consequences such as role overload, emotional exhaustion, or conflict between environmental and job-related demands.

6. FUTURE DIRECTIONS:

Future research on Green Human Resource Management (GHRM) should adopt more diverse and rigorous approaches to address existing limitations. Most current evidence is based on cross-sectional, self-reported surveys, which restrict causal inference and increase the risk of bias. Longitudinal, experimental, and mixed-method designs would provide stronger evidence on how GHRM practices influence outcomes over time. Geographically, research is heavily concentrated in Asian contexts such as China, Pakistan, and Indonesia, with limited exploration in Western economies, Africa, and emerging green-tech sectors. Broader investigations across diverse cultural and industrial settings are essential to enhance generalisability. At the employee level, while wellbeing, engagement, and green behaviour are widely studied, paradoxical effects such as role overload and emotional exhaustion remain underexplored, warranting balanced assessment of both positive and negative outcomes. At the organisational level, outcomes beyond sustainability—such as innovation, competitiveness, and long-term resilience—require greater attention. Future studies should also test multi-level mediating and moderating mechanisms, including cultural values, digital transformation, and leadership styles, using integrative theoretical frameworks. Such an agenda will advance understanding of when and how GHRM fosters sustainable outcomes while mitigating potential risks for employees and organisations alike

Table 5: Future Implications model

Dimension	Current Evidence	Identified Gaps	Future Research Directions
Study Design	Mostly cross-sectional, survey-based, self-reported	Limited causal inference, common method bias	Employ longitudinal, experimental, and mixed-method designs; use objective measures of sustainability and wellbeing outcomes
Geographic Scope	Predominantly Asia (China, Pakistan, Indonesia)	Underrepresentation of Western economies, Africa (beyond Ghana), SMEs, and high-tech sectors	Conduct cross-cultural and sector-diverse studies for generalisability

Sectors	Focus on banking, hospitality, healthcare, manufacturing	Limited evidence in IT, technology-driven, start-ups, and public sector	Explore impact of GHRM in knowledge-intensive, digital, and green-tech industries
Employee Outcomes	Wellbeing, engagement, job satisfaction, green behaviour	Limited exploration of paradoxical outcomes (e.g., burnout, role overload, emotional exhaustion)	Assess both positive and adverse outcomes; examine resilience, stress, and work-life balance
Organizational Outcomes	Environmental performance, culture, reputation	Limited evidence on innovation, competitive advantage, long-term resilience	Evaluate broader organizational outcomes such as productivity, innovation, ESG performance
Mediators	Psychological ownership, environmental commitment, green culture, organizational pride	Need deeper integration of psychological, cultural, and systemic mediators	Test multi-level mediating models linking HR practices, culture, and outcomes
Moderators	Transformational leadership, supervisory support, individual green values	Inconsistent testing of contextual factors	Investigate cultural values, digital transformation, regulatory pressures, and leadership styles
Theoretical Integration	Social exchange, AMO, identity theory frameworks	Fragmented application across studies	Develop integrative theoretical models combining HRM, sustainability, and psychological theories

5. CONCLUSION:

This review underscores the significant potential of Green Human Resource Management (GHRM) to foster employee wellbeing, engagement, pro-environmental behavior, and organizational sustainability. Across diverse industries and cultural contexts, the evidence consistently demonstrates that GHRM practices not only strengthen employees' psychological connections to their organizations but also contribute to environmental and performance outcomes. However, the findings also highlight important research gaps that warrant further attention. Most studies are concentrated in Asian and service-dominated sectors, with limited exploration in Western economies, manufacturing, and technology-driven industries. This geographical and sectoral bias limits the generalizability of current evidence. Additionally, the dominance of cross-sectional, self-reported research designs constrains causal inference and raises concerns regarding common method bias. A further gap lies in the limited exploration of unintended consequences of GHRM. While positive effects on wellbeing and engagement are evident, paradoxical outcomes such as emotional exhaustion and role overload have been reported, suggesting that green practices may inadvertently create new employee pressures. The mediating and moderating mechanisms—such as leadership style, cultural values, and supervisory support—require deeper investigation to clarify the boundary conditions under which GHRM is most effective. Moreover, organizational-level outcomes beyond sustainability, such as innovation, competitive advantage, and long-term resilience, remain underexplored.

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