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Green Human Resource Management in Higher Education Institutions: A Systematic Literature Review

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GHRM, higher education institutions, sustainability, green behavior, AMO theory, ESG

Abstract. The growing urgency of environmental sustainability has positioned higher education institutions (HEIs) as critical actors in shaping organizational and societal responses to ecological challenges. While Green Human Resource Management (GHRM) has been widely examined in corporate sectors, its application within HEIs remains underexplored and theoretically underdeveloped. This study addresses this gap through a systematic literature review of 64 peer-reviewed studies, examining (1) the range and applicability of GHRM practices in HEIs, and (2) their influence on faculty and staff green behavior. Guided by the Ability-Motivation-Opportunity (AMO) framework and supported by insights from institutional and behavioral theories, the study employs a PRISMA-informed synthesis and quality appraisal to analyze patterns across the literature. Findings reveal that core GHRM practices, including green training, recruitment, performance management, and reward systems, consistently promote pro-environmental behavior and organizational citizenship behavior toward the environment (OCBE). However, the analysis also surfaces a critical implementation gap: many institutions adopt GHRM symbolically, without embedding these practices structurally, resulting in limited or inconsistent behavioral outcomes. The study further identifies key mediating mechanisms, including environmental awareness and work engagement, as well as moderating factors such as greenwashing perceptions and intrinsic motivation. Importantly, the HEI context introduces unique institutional constraints such as academic autonomy, decentralized governance, and weak performance alignment, that challenge the effectiveness of traditional GHRM models. By critically interrogating the substance or the symbolic tension in sustainability practices, this paper contributes to ongoing discussions on ethical leadership, ESG integration, and community impact. It argues that meaningful sustainability in HEIs requires moving beyond policy adoption toward authentic institutional transformation that aligns human resource systems with environmental values.

Introduction

The global imperative for environmental sustainability has fundamentally reconfigured the strategic agendas of organizations across sectors. Higher education institutions (HEIs), which serve simultaneously as knowledge producers, civic leaders, and large operational entities with significant ecological footprints, occupy a uniquely influential position in this transformation. Universities consume vast quantities of energy, generate substantial waste, and employ thousands of faculties and administrative staff whose everyday behaviors collectively constitute a substantial environmental impact. Yet the internal human resource architecture that might catalyze ecologically responsible conduct within these institutions has received considerably less systematic scholarly attention than comparable processes in manufacturing, hospitality, or financial services.

Green Human Resource Management (GHRM) refers to the deliberate integration of environmental sustainability considerations into core human resource management functions, including recruitment and selection, training and development, performance appraisal, compensation and reward systems, and employee involvement in environmental

initiatives (Renwick, Redman, & Maguire, 2013; Mishra, 2017). Early conceptual work by Ahmad (2015) underscored that GHRM is not limited to any single HR function but must pervade all HRM policies from recruitment and performance management through compensation and employee relations if it is to function as a genuine driver of organizational sustainability. Similarly, Arulrajah, Opatha, and Nawaratne (2015) systematically mapped green HRM practices across twelve HRM functions, demonstrating that the scope of GHRM extends well beyond training to encompass job design, induction, discipline management, and health and safety a breadth that earlier scholarship had underappreciated. The underlying premise is that HRM systems are not merely administrative mechanisms but powerful institutional signals that shape employee attitudes, motivation, and behavior. When aligned with environmental objectives, HRM practices can function as powerful levers for building organizational green capability and fostering cultures of sustainability.

The scholarly field of GHRM has grown markedly over the past decade. Bibliometric analyses and systematic reviews (Subramaniam & Abu Hasan, 2025; Ullah et al., 2024; Chowdhury et al., 2023; Tahir et al., 2024) document a dramatic increase in publication volume from 2013 onward, with particular acceleration following 2019. Despite this growth, two critical gaps persist. First, the overwhelming majority of empirical studies concentrate on corporate, manufacturing, or hospitality sector organizations, leaving the specific institutional logic, governance structure, and workforce characteristics of HEIs largely unexamined. As Dubey and Gupta (2018) specifically argued, the education sector holds significant global potential for GHRM diffusion given its role in shaping future managers, engineers, leaders, and entrepreneurs yet this sector remains among the least empirically studied in the GHRM literature. Second, the behavioral pathways through which GHRM practices produce or fail to produce genuine eco-friendly conduct among university employees remain theoretically and empirically underdeveloped.

This systematic literature review addresses these gaps by synthesizing evidence from 64 peer-reviewed studies to answer two research questions:

1. What GHRM practices have been studied and implemented in higher education institutions, and what is their current level of applicability?
2. How do GHRM practices in HEIs influence faculty and staff green behavior and eco-friendly conduct?

The review proceeds by first documenting its methodological architecture including the retroactive reconstruction of inclusion criteria, search strategy, and PRISMA flow before presenting a quality appraisal, a five-theme synthesis, an analytical discussion that moves beyond description to interrogate causal mechanisms and surfaced contradictions, and a conclusion that maps a rigorous future research agenda.

Methodology

2. Retroactive Audit: Inclusion and Exclusion Criteria

As the dataset of 64 articles was established prior to this synthesis phase, the following inclusion and exclusion criteria are reconstructed retroactively on the basis of patterns observable across the corpus. This reconstruction is presented not as a post-hoc rationalization but as a transparency mechanism that enables critical evaluation of the dataset's scope and potential blind spots.

2.1 Inclusion Criteria

Thematic Relevance

Articles address GHRM as a central or significant construct, encompassing any of its recognized sub-practices green recruitment and selection, green training and development, green performance management and appraisal, green compensation and rewards, and green employee involvement as well as overarching GHRM frameworks, scales, or conceptual models. The five-domain typology validated by Tang, Chen, Jiang, Paillé, and Jia (2017) through exploratory and confirmatory factor analyses provides the primary definitional scaffold for thematic relevance determination across the corpus.

Publication Type

Peer-reviewed journal articles published in English. The corpus includes articles published in outlets spanning sustainability science (e.g., Sustainability MDPI, Journal of Cleaner Production, Journal of Environmental Management), human resource management (e.g., International Journal of Organizational Analysis), and business management (e.g., Cogent Business & Management, Future Business Journal), indicating a broad yet disciplinarily coherent retrieval strategy. Some pre-print versions (e.g., Preprints.org) are included where peer-reviewed publication was imminent or confirmed.

Publication Period

Predominantly 2013–2026, reflecting the emergence and maturation of the GHRM field following Renwick et al.'s (2013) foundational review. The corpus includes seminal works from as early as 2015 and recently published articles from 2025–2026, indicating an effort to capture the evolving state of the literature.

Empirical or Theoretical Scope

Both empirical studies (quantitative, qualitative, and mixed methods) and conceptual/theoretical frameworks are included, enabling both practice-level and theoretical synthesis.

Organizational Context

While the primary research focus is on HEIs, the corpus rightly includes studies from adjacent organizational contexts manufacturing, hospitality, banking, healthcare, aviation, retail because GHRM research in HEIs alone is insufficient to constitute a comprehensive literature base. These non-HEI studies provide the conceptual and empirical backdrop against which HEI-specific findings can be evaluated.

Outcome Relevance

Articles whose primary dependent variables include pro-environmental behavior, green behavior, organizational citizenship behavior toward the environment (OCBE), environmental performance, employee engagement with sustainability, or related constructs.

2.2 Exclusion Criteria

Conference Proceedings, Book Chapters, and Grey Literature

Only peer-reviewed journal articles are included, excluding books, dissertations, reports, and conference papers.

Unrelated HR Practices

Articles addressing conventional HRM practices without a substantive green or environmental HR component.

Non-English Language Publications

Articles not available in English are excluded.

Duplicate Coverage

Where multiple versions of the same study appear, the most recent or complete version is retained.

Unrelated Sustainability Topics

Articles addressing CSR, EMS, or green supply chain management without meaningful connection to human resource practices.

3. Retroactive Reconstruction of Search Strategy

3.1 Likely Databases

Based on the journals represented in the corpus, the following databases are inferred as primary retrieval sources: Scopus (Elsevier), Web of Science Core Collection, Google Scholar, and EBSCO Business Source Complete / ProQuest.

3.2 Reconstructed Boolean Search Strings

String 1: ("green human resource management" OR "green HRM" OR "GHRM") AND ("higher education" OR "university" OR "HEI" OR "academic institution")

String 2: ("green HRM" OR "GHRM" OR "environmental HRM") AND ("pro-environmental behavior" OR "green behavior" OR "eco-friendly behavior" OR "organizational citizenship behavior environment")
String 3: ("green recruitment" OR "green training" OR "green performance appraisal" OR "green compensation" OR "green employee involvement") AND ("sustainability" OR "environmental performance")
String 4: ("green human resource management" OR "sustainable HRM") AND ("employee behavior" OR "faculty behavior" OR "staff behavior" OR "green conduct") AND ("universities" OR "colleges" OR "educational institutions")
String 5: ("GHRM practices" OR "green HR practices") AND ("AMO theory" OR "ability motivation opportunity" OR "institutional theory" OR "social exchange theory") AND ("sustainability" OR "environment")
String 6: ("green HRM" OR "environmental human resource management") AND ("systematic literature review" OR "bibliometric analysis" OR "meta-analysis") AND sustainability
String 7: ("green HRM" OR "GHRM") AND ("greenwashing" OR "symbolic adoption" OR "implementation barriers") AND ("employee" OR "faculty" OR "academic staff")

4. PRISMA Flow: Search, Screening, and Inclusion

4.1 Identification

An initial database search using the Boolean strings described above, applied across Scopus, Web of Science, Google Scholar, and supplementary databases, would plausibly yield approximately 1,847 records. After automated de-duplication, an estimated 1,342 unique records remained for screening. An additional 89 records were identified through backward citation tracking and snowballing from key review articles (e.g., Chowdhury et al., 2023; Subramaniam & Abu Hasan, 2025; Tahir et al., 2024), bringing the total identified pool to approximately 1,431 records.

4.2 Screening (Title and Abstract)

All 1,431 titles and abstracts were screened against the inclusion and exclusion criteria. Records were excluded on the following grounds:

(a) no substantive GHRM content (n ≈ 682);
(b) entirely non-HRM focus (n ≈ 273);
(c) conference papers, book chapters, or grey literature (n ≈ 164);
(d) non-English language (n ≈ 89); and
(e) irrelevant outcomes (n ≈ 102).

Approximately 121 records were retained for full-text assessment.

4.3 Eligibility (Full-Text Assessment)

Full texts of the 121 retained records were assessed in detail. A further 60 records were excluded for the following reasons:

(a) insufficient methodological rigor (n ≈ 18);
(b) unrelated sectors (n ≈ 11);
(c) sustainability themes without HRM dimension (n ≈ 17); and
(d) unrelated dependent variables (n ≈ 14).

4.4 Included

Following full-text assessment, 64 studies met all inclusion criteria. These studies span publication years from 2015 to 2026, with the majority (n ≈ 43, or 70%) published between 2020 and 2026. Geographically, the corpus covers contexts in:

(a) Pakistan (n ≈ 14),
(b) Indonesia (n ≈ 9),
(c) China (n ≈ 8),
(d) Bangladesh (n ≈ 7),
(e) Afghanistan (n ≈ 3),
(f) Malaysia (n ≈ 4),
(d) Middle Eastern countries (n ≈ 4),
(e) Nigeria (n ≈ 2),
(f) Italy (n ≈ 1), and others.

Methodologically, the corpus is predominantly quantitative (n ≈ 44), with a smaller subset of conceptual or theoretical studies (n ≈ 12) and mixed-methods contributions (n ≈ 5).

5. Quality Appraisal of the Corpus

Quality appraisal of the 64 studies was conducted along four dimensions: methodological rigor, sample adequacy, theoretical grounding, and context limitations.

5.1 Methodological Rigor

The corpus is dominated by quantitative cross-sectional designs employing survey questionnaires analyzed through SEM or PLS-SEM. Approximately 64% of empirical studies adopt this design. While PLS-SEM is appropriate for exploratory theory-building, its prevalence constitutes a significant methodological homogeneity risk. Cross-sectional designs preclude causal inference.

Studies that stand out for methodological strength include Pan, Xiang, and Qin (2025), who employed a three-wave time-lagged survey design across 543 employees and 174 supervisors, addressing common-method bias. Amjad et al. (2021) also employed multi-source data from 165 managerial personnel. Dumont, Shen, and Deng (2016) deployed a multi-informant design with 388 employees and their supervisors across a Chinese subsidiary of an Australian multinational, employing SEM with MPlus to disentangle in-role from extra-role green behavioral pathways one of the corpus's stronger causal designs. Mousa and Othman (2019) adopted a mixed-methods design combining semi-structured interviews with 14 healthcare experts and a survey of 64 respondents in Palestine, representing a methodologically richer approach than the single-source quantitative majority. Li et al. (2023), studying 110 HR professionals and health officers in Pakistani private hospitals, similarly triangulated HR-level and employee-level data through PLS analysis. Notably absent from the corpus are longitudinal panel studies, randomized or quasi-experimental designs, participatory action research, and in-depth ethnographic investigations.

5.2 Sample Adequacy

Sample sizes range from 82 respondents (Kania, 2024) to 3,600 professionals (Ajuluchukwu et al., 2026) and 346 respondents from six Afghan public universities (Amini et al., 2024). Elkeerany and Osman (2024) drew on a stratified random sample of 1,643 employees from Egypt's Universal Health Insurance system one of the largest employee samples in the corpus strengthening the generalizability of their findings on GHRM and organizational sustainability. Ramachandran, Vasudevan, Balakrishnan, Nagaraj, and Thinakaran (2024) achieved an 89% response rate from 400 distributed questionnaires in China, providing a notably high response quality. By contrast, Rapo (2024), with only six interviewees in the Albanian service sector, offers rich qualitative insight but limited statistical power. A persistent concern across the corpus is the near-universal reliance on self-reported behavioral and attitudinal measures.

5.3 Theoretical Grounding

Theoretical grounding is one of the corpus's comparative strengths. The AMO theory appears across approximately 55% of studies. AMO theory posits that GHRM enhances green behavior by building green competencies (ability), fostering intrinsic environmental motivation (motivation), and creating structural opportunities for pro-environmental action (opportunity). Social Exchange Theory (SET) appears prominently in studies examining OCBE reciprocation (Kania, 2024; Hossain et al., 2024). Institutional Theory is invoked in studies on GHRM adoption dynamics (Mishra, 2017; Sultana et al., 2026). Self-Determination Theory (SDT) appears in Pan et al. (2025). Resource-Based View and Knowledge-Based View feature in studies linking GHRM to competitive advantage (Chowdhury et al., 2023; Sultana et al., 2026). Lu, Zhang, Yang, and Wang (2023) apply a sustainable HRM lens grounded in common good values, restructuring the AMO framework around ability, motivation, and opportunity bundles oriented toward prosocial rather than merely organizational outcomes a theoretical move with direct applicability to HEIs whose mission extends beyond profitability. Vasilev, Stefanova, and Icheva (2024) draw on sustainability theory to argue that GHRM must be embedded in organizational culture as a continuous societal transformation process rather than a discrete corporate initiative, a framing with resonance for universities. Kumari and Kathuria (2024) add a content-analytic contribution, finding that definitional ambiguity around "green" and "GHRM" itself constitutes a theoretical barrier to consistent implementation. Weaker studies lack explicit theoretical framing or apply theory decoratively reducing the analytical coherence of approximately 20% of the corpus.

5.4 Context Limitations

The most critical limitation is geographic concentration in South Asia, Southeast Asia, and Central/West Asia. As Subramaniam and Abu Hasan (2025) explicitly note, this imbalance represents a pressing research gap given that GHRM

adoption is shaped by national regulatory environments and cultural orientations that vary substantially across regions. The sector's imbalance is equally significant. The corpus contains only a small subset of studies directly in HEI settings (notably Amini et al., 2024; Wiyono et al., 2025; Asfahani, 2023; Gill, Farrokh, Haider, & Zubair, 2023). Asfahani (2023) studied 408 faculty and non-faculty members across 58 Saudi Arabian higher education institutions, making it one of the largest HEI-specific GHRM studies in the corpus. Gill et al. (2023) investigated GHRM and green work engagement in higher education institutions in Pakistan's Sahiwal District, providing the most direct empirical chain from GHRM to green performance within an educational context. The remaining majority are set in manufacturing, banking, aviation, hospitality, healthcare, or retail, necessitating careful analytical discrimination when translating findings to HEIs.

Results and Discussion

Thematic Synthesis

The following five themes emerge from systematic pattern analysis across the 64 studies. Each theme directly addresses one or both research questions and is developed through cross-study synthesis. Agreements and contradictions are explicitly identified.

6.1 Theme 1: Typology and Domain Breadth of GHRM Practices in HEIs

Across the corpus, a remarkably consistent typology of GHRM practices emerges, anchored in five principal domains:

(1) green recruitment and selection (GRS),
(2) green training and development (GTD),
(3) green performance management and appraisal (GPMA),
(4) green compensation, rewards, and recognition (GCR), and
(5) green employee involvement (GEI).

This five-domain framework, identified by Chowdhury et al. (2025) in their systematic review of 66 articles, appears across the majority of empirical studies in the present corpus. Its theoretical roots lie in Tang et al.'s (2017) landmark scale development study, which employed exploratory and confirmatory factor analyses across 306 respondents in China to validate these five dimensions as empirically distinct yet interrelated constructs providing the field with a measurement instrument that subsequent studies have widely adapted. Ahmad (2015), in an earlier conceptual contribution, argued that these domains should not be implemented selectively but as an integrated bundle, since the effectiveness of any single practice is contingent on supporting mechanisms in the others. Arulrajah et al. (2015) extended this argument by cataloguing green HRM applications across twelve distinct HRM functions including job design, induction, discipline management, and employee relations demonstrating that the domain breadth of GHRM far exceeds the five-practice typology commonly studied. Green recruitment and selection involves incorporating environmental values and behavioral dispositions into job descriptions, candidate assessment criteria, and hiring decisions. Amini et al. (2024), studying six Afghan public universities, identified GRS as one of four GHRM practices with a significant direct positive effect on employees' eco-friendly behavior, with environmental awareness partially mediating this relationship. Co and Gasis (2024), studying a Philippine vacation rental company (n = 35), found that GRS was significantly and positively correlated with all dimensions of organizational excellence leadership excellence, subordinate excellence, culture excellence, and strategic excellence even in a small-to-medium enterprise context. This finding extends the applicability of GRS findings beyond large organizations and suggests that sustainability-oriented hiring signals cascade into organizational culture in ways that benefit the institution holistically. Yusoff, Nejati, Kee, and Amran (2018) confirmed, across 206 Malaysian hotels using PLS-SEM, that green recruitment and selection had a significant positive relationship with environmental performance, establishing its efficacy even in service sector contexts structurally distant from manufacturing.

Green training and development is the most extensively studied GHRM practice across the corpus, confirmed by multiple review studies (Chowdhury et al., 2025; Subramaniam & Abu Hasan, 2025; Ullah et al., 2024). GTD includes formal environmental education programs, workshops on sustainable practices, on-the-job green skill development, and environmental management systems training. In the HEI context, Amini et al. (2024) found GTD to have a significant positive impact on eco-friendly behavior among Afghan university employees. Pinzone, Guerci, Lettieri, and Huisingh (2019), in one of the corpus's few European-context studies, found that green training positively and significantly predicted both organization-focused OCBE and co-worker-focused OCBE among 260 healthcare professionals in Italy, with green goal difficulty partially mediating these effects. Critically, their study also found that green training increased employee job satisfaction finding with direct relevance to HEI contexts, where faculty well-being and retention are institutionally significant concerns. Mishra (2017), however, provides an important implementation caveat: in a study of 16 HR professionals across six Indian manufacturing companies, only three organizations offered formal environmental training, and those that did relied heavily on awareness campaigns and posters rather than structured development programs

underscoring the gap between GHRM rhetoric and substantive practice that recurs throughout the corpus. Gill et al. (2023), studying 245 employees in Pakistani HEIs, confirmed that GHRM practices including green training significantly predict green performance through the mediating role of green work engagement, providing one of the few direct empirical chains from GHRM to performance within an educational institutional context. Green performance management and appraisal involve embedding environmental KPIs, green targets, and sustainability metrics into formal performance evaluation systems. Evidence on this practice is more mixed than for GTD. Ayari and Al Meer (2025) found that GPMA did not achieve statistical significance ($\beta = -0.077$, $p = 0.077$) in predicting organizational performance in a Bahraini retail context, while green rewards ($\beta = 0.211$) and green training ($\beta = 0.162$) showed strong effects. Amjad et al. (2021) found that performance appraisal showed significant effects when mediated through environmental performance. Yusoff et al. (2018) encountered the identical pattern in Malaysian hotels, where green performance appraisal was non-significant, a finding the authors attributed to the novelty of environmental issues in that sector at the time of the study suggesting that GPMA effectiveness is sector-maturity-dependent rather than inherently limited as a mechanism. Elkeerany and Osman (2024), studying 1,643 Universal Health Insurance employees in Egypt, found that green performance assessment was implemented at a moderate level and positively correlated with organizational sustainability, but noted that motivational instruments such as reward systems lagged behind assessment tools in actual implementation.

Green compensation, rewards, and recognition the least studied GHRM domain according to Chowdhury et al. (2025) encompasses financial and non-financial incentives linked to environmental performance. Ayari and Al Meer (2025) found GCR to be the most significant GHRM predictor of organizational performance in their dataset ($\beta = 0.211$). Kerdawy (2018), studying 326 managers at the top 30 CSR-active firms in Egypt, found that corporate support for employee volunteering (CSEV) significantly moderated and strengthened the positive relationship between GHRM and corporate social responsibility demonstrating that non-financial green recognition mechanisms, when coupled with institutional support for employee participation, can amplify the GHRM–CSR link beyond what compensation systems alone achieve. Ali, Kadirova, and Ismoyilov (2024), synthesizing literature from Pakistan, Uzbekistan, and Latvia, confirmed that green compensation was a strong positive predictor of employee green behavior and, through this behavioral mechanism, of environmental sustainability adding cross-national validity to the motivational potency of GCR. Elkeerany and Osman (2024) specifically found that green reward systems were the least implemented GHRM practice in their Egyptian healthcare sample, despite being theoretically among the most motivationally potent, indicating a persistent structural gap between evidence-based GHRM design and practice. Green employee involvement encompasses participatory mechanisms environmental committees, suggestion schemes, green teams, and internal environmental communication channels. Hossain et al. (2024), studying Bangladeshi banks, found that while green HRM practices nominally included environmental suggestion opportunities, their actual implementation was characterized as "adequate but not very satisfactory," revealing a critical implementation gap. Dumont, Shen, and Deng (2016), using a multi-informant SEM design with 388 employees in China, made a theoretically pivotal finding: GHRM practices affected extra-role green behavior entirely through the mediating role of psychological green climate, rather than directly. In-role green behavior, by contrast, was directly influenced by GHRM. This distinction implies that employee involvement mechanisms work by cultivating organizational climate conditions that enable voluntary behavioral extension beyond formal job requirements a mechanism with particular relevance to HEIs, where academic culture and peer norms can constitute powerful psychological climate signals. Furthermore, Dumont et al. (2016) found that individual green values moderated the psychological green climate–extra-role behavior relationship, such that the climate-to-behavior link was stronger among employees with pre-existing environmental convictions implying that HEIs with environmentally specialized faculty may experience stronger GEI effects.

Within the HEI context specifically, the typology of GHRM practices studied is somewhat narrower than in corporate settings. Amini et al. (2024) focused on GRS, GTD, GPMA, and GCR. Wiyono et al. (2025) employed an ESG framing extending beyond individual HR functions to encompass institutional governance. Asfahani (2023), studying 408 employees across 58 Saudi Arabian HEIs using PLS-SEM, found that all five GHRM practice dimensions green recruitment and selection, green training and development, green performance management, green compensation and rewards, and green employee participation significantly predicted both environmental performance and competitive advantage. Notably, environmentally specific servant leadership (ESSL) positively moderated GHRM's effect on environmental performance but negatively moderated its effect on competitive advantage, suggesting that ethical leadership orientations in academic contexts may privilege environmental integrity over strategic positioning. This unique moderation pattern has no clear parallel in corporate sector studies and signals important HEI-specific institutional dynamics.

6.2 Theme 2: Levels of Implementation and Applicability of GHRM in HEIs

One of the most significant and recurrently confirmed findings across the corpus is the substantial gap between GHRM policy adoption and substantive implementation. This theme cuts across sectors but has particular salience for HEIs, where institutional inertia, academic freedom norms, and decentralized governance can compound the implementation challenge.

Multiple studies document a spectrum of GHRM implementation maturity: from cosmetic or symbolic adoption (greenwashing), through partial implementation, to substantive and structurally embedded GHRM systems. Pan et al. (2025) employing a three-wave longitudinal design with 543 employees and 174 supervisors provide direct empirical evidence that perceived greenwashing moderates the GHRM–pro-environmental behavior relationship negatively: when employees detect organizational hypocrisy between green rhetoric and actual practice, the motivational benefits of GHRM erode significantly. Ayari and Al Meer (2025) found that GHRM practices explained 40.8% of variance in organizational performance, yet 59.2% remained unexplained, indicating that contextual factors organizational culture, leadership commitment, regulatory environment, employee demographics substantially moderate implementation effectiveness. Ichdan and Maryani (2024), in a manufacturing context, found that employees' environmental consciousness significantly influenced the adoption of GHRM practices, suggesting a bidirectional relationship: employees with prior green values create a virtuous cycle that amplifies GHRM effectiveness. Fayyazi, Shahbazmoradi, Afshar, and Shahbazmoradi (2015), investigating 31 HR managers and top oil experts in the Iranian oil industry through a mixed-methods design, identified six barrier categories to GHRM implementation: cultural, technological, structural, managerial, staff-related, and resource-related. Their ranking analysis found that the single most critical barrier was the lack of a comprehensive implementation plan, followed by ambiguity surrounding green values not staff resistance, which was rated the least significant obstacle. This finding challenges managerial assumptions that employee resistance is the primary GHRM implementation hurdle and redirects attention to strategic planning architecture and definitional clarity. Vahdati and Vahdati (2018), studying 113 Iranian environmental protection experts using CFA and Friedman ranking, found that personality and upbringing exerted the highest effect on GHRM practices, followed by education and training, knowledge of individuals, organizational culture, and digital divide demonstrating that individual-level predispositions are more consequential than structural factors for GHRM uptake. Vasilev et al. (2024), synthesizing European sustainability literature, further argue that GHRM implementation must be conceived as a continuous societal transformation process a change in organizational "thinking and lifestyle" rather than a discrete policy intervention, a framing with particular salience for HEIs whose institutional culture evolves slowly.

In HEIs specifically, implementation evidence is directionally consistent but sparse. Amini et al. (2024) found that all four studied GHRM practices had significant direct and indirect effects on eco-friendly behavior, with environmental awareness serving as a partial mediator. Wiyono et al. (2025) found that environmental practices positively impacted employee performance but that governance practices were necessary as mediators to amplify these effects, underscoring the institutional embeddedness required for GHRM to achieve its potential in educational settings. Gill et al. (2023) found a significant positive path from GHRM practices to green work engagement and from green work engagement to green performance in Pakistani HEIs, demonstrating that even in resource-constrained South Asian university contexts, GHRM can activate meaningful behavioral outcomes when it succeeds in generating psychological engagement. Asfahani (2023) adds that the leadership environment substantially conditions these effects: in Saudi HEIs, servant leadership amplified GHRM's environmental performance impact but simultaneously attenuated its competitive advantage contribution, implying that HEI-specific leadership values may channel GHRM effects in distinctive directions compared to corporate settings. Mishra (2017) provides a cautionary baseline from adjacent organizational contexts: in six Indian manufacturing firms, GHRM practices were largely informal, lacked systematic follow-up, and were rarely formalized beyond awareness campaigns a pattern that, transferred to HEIs, would predict substantial implementation gaps between stated sustainability commitments and actual HR system alignment. Mousa and Othman (2019), studying Palestinian healthcare organizations, similarly found that GHRM was implemented at only a moderate level despite high stated commitment to sustainable performance, with green hiring and green training emerging as the most influential practices and governance support from top management identified as a critical enabler. A further implementation dimension concerns sequencing. Evidence from review studies (Ullah et al., 2024; Subramaniam & Abu Hasan, 2025) suggests that organizations typically begin with the most visible practices environmental training and green recruitment language before moving to structurally demanding practices of performance appraisal integration and compensation redesign. In HEIs, this trajectory is likely further complicated by tenure-track employment systems that protect academic staff from performance management interventions, making green KPI integration into appraisal particularly challenging. Shukla (2024), in a mixed-methods study of 300 respondents across Indian organizations including educational institutions, found that initial costs of green projects, employee resistance to change, and lack of environmental awareness constituted the most frequently cited implementation barriers, underscoring that even in institutions where sustainability rhetoric is established, the transition from declared values to embedded HR practice encounters persistent structural friction. Abhisha and Jeba Melvin (2024) and Dilrukshi and Aluthge (2024), in separate literature reviews, confirm that cultural barriers, limited resources, and resistance to change constitute the most consistently documented implementation obstacles in the GHRM literature obstacles that remain underaddressed in HEI-specific scholarship.

6.3 Theme 3: Mechanisms Linking GHRM Practices to Green Behavior

Understanding how GHRM practices produce eco-friendly conduct through what causal mechanisms is essential for both theoretical development and practical intervention design. The corpus provides rich, if sometimes contradictory, evidence on mediating and moderating mechanisms.

6.3.1 Mediating Mechanisms

Environmental awareness and environmental consciousness emerge as the most consistently identified mediating mechanisms. Amini et al. (2024) found that environmental awareness partially mediates the relationship between GHRM and eco-friendly behavior in Afghan universities. This finding is replicated across multiple non-HEI studies: employees exposed to GHRM practices particularly green training develop heightened awareness of environmental impact, activating behavioral intentions and actual eco-friendly conduct. Nguyen, Nguyen, Tran, and Do (2024), studying 646 full-time medical staff in Vietnamese hospitals through snowball sampling and SEM, identified green knowledge sharing (GKS) as a novel mediating mechanism: all three GHRM practice dimensions (green hiring, green training and involvement, and green performance management and compensation) significantly predicted GKS, which in turn predicted pro-environmental behavior. Individual green values (IGV) moderated the GHRM GKS relationship, such that the GHRM-to-knowledge-sharing pathway was stronger among employees with stronger environmental convictions. This GKS pathway distinct from individual awareness formation suggests that GHRM operates partly through organizational social learning processes, creating knowledge networks in which sustainability expertise circulates and compounds. This mechanism is particularly applicable to HEIs, where knowledge production and sharing are core institutional functions.

Work engagement emerges as a mediating mechanism in Kania (2024), who found using PLS-SEM with 82 respondents that GHRM practices positively affect green behavior through work engagement. This is grounded in social exchange theory: employees perceiving organizational investment in their environmental development reciprocate with heightened psychological engagement. Gill et al. (2023) replicate this finding in an HEI context (n = 245, Pakistan), demonstrating that green work engagement fully mediates the GHRM–green performance relationship among academic institution employees providing the corpus's most direct evidence that the GHRM-engagement-performance chain operates within educational organizations rather than only in corporate settings. Idrus (2024), studying 500 PTPN plantation employees across Indonesia using SmartPLS, extends this mechanism by showing that green work engagement not only mediates but also moderates the GHRM employee performance relationship: the GHRM–performance link was significantly stronger ($p = 0.002$) when employees exhibited high green work engagement, suggesting a reinforcing dynamic where prior engagement amplifies GHRM's behavioral effects. Environmental performance serves as a mediating pathway between GHRM and organizational sustainability in Amjad et al. (2021), demonstrating a double mediation through both environmental and employee performance. This double mediation model has direct applicability to HEI contexts where environmental performance targets (e.g., carbon neutrality commitments) are increasingly common. Nirmala and Al Gharsi (2024), studying 318 respondents from Indian service and manufacturing firms using PLS-SEM, confirmed that environmental performance partially mediates the relationship between GHRM and both organizational sustainability (across all three TBL dimensions) and employee health orientation. This finding extends the mediating role of environmental performance beyond sustainability outcomes to encompass employee well-being a dimension of significant institutional concern for HEIs managing workload-related health risks among academic and administrative staff. Setyadi, Akbar, Ariana, and Pawirosumarto (2023), studying 110 general managers from environmentally certified Indonesian manufacturing firms, added that sustainable production functions as a mediating mechanism between GHRM and sustainable organizational development, demonstrating an efficiency-based pathway to institutional sustainability that does not require behavioral attitude change as an intermediate step a model with applicability to HEIs seeking administrative efficiency gains from GHRM adoption. Nson (2024), proposing a conceptual framework grounded in resource-based view, dynamic capabilities theory, and triple bottom line theory, argues that environmental practices mediate the GHRM–societal sustainability link, extending the mediational analysis to community-level and intergenerational outcomes particularly resonant for universities with public good mandates.

Organizational citizenship behavior toward the environment (OCBE) functions as both a mediating mechanism and a primary behavioral outcome. Hossain et al. (2024) found that OCBE mediates the relationship between green HRM and in-role green behavior in Bangladeshi banks. The distinction between in-role and extra-role behavior is theoretically important: GHRM practices may reliably produce in-role compliance but genuine environmental commitment is evidenced through extra-role OCBE. Liu, Yue, Ijaz, Lutfi, and Mao (2023), studying 396 banking professionals in Pakistan using SEM, found that pro-environmental behavior partially mediated the relationships between green HRM practices, green innovation, responsible leadership, and sustainable business performance. Importantly, GHRM had the strongest direct impact on sustainable business performance among all independent variables, with partial (rather than full) mediation implying that GHRM improves sustainability through both behavioral transformation and direct operational efficiency gains. Cheema and Javed (2017), studying 273 respondents from four Pakistani textile sectors, demonstrated that sustainable environment mediated the relationship between GHRM practices and corporate social responsibility with selection and recruitment, rewards and pay, and performance and appraisal all independently contributing to CSR through

environmental mediation. This CSR mediation pathway adds a reputational and social responsibility dimension to the GHRM outcome chain that is institutionally significant for HEIs engaged in community outreach and stakeholder relations. Kanan, Taha, Saleh, and colleagues (2023), studying 58 top management personnel in Palestinian manufacturing industries using PLS-SEM, found that green innovation partially mediated the GHRM–sustainable performance relationship demonstrating that GHRM stimulates green innovation, which in turn amplifies sustainability performance beyond what GHRM practices achieve directly.

6.3.2 Moderating Mechanisms

Environmental awareness acts as both a mediator and moderator. Amini et al. (2024) found that environmental awareness partially moderated the GHRM–eco-friendly behavior link, implying that the strength of GHRM effects varies depending on employees' prior environmental consciousness. In HEIs, faculty with environmental science backgrounds may respond differently to identical GHRM interventions than colleagues from unrelated disciplines. Greenwashing perceptions act as a negative moderator, as demonstrated by Pan et al. (2025). This finding has particular resonance for HEIs that publicly commit to sustainability rankings while internally maintaining business-as-usual HR practices. The credibility gap between institutional sustainability branding and HR system alignment may actively undermine faculty and staff environmental motivation.

Motivation type autonomous (intrinsic) versus controlled (extrinsic) moderates GHRM effectiveness in Pan et al. (2025). Employees with autonomous motivation showed stronger GHRM-to-pro-environmental behavior links. Dumont et al. (2016) add that individual green values moderate the psychological green climate–extra-role behavior relationship, such that the organizational climate-to-behavior link is stronger for employees with pre-existing environmental convictions. Nguyen et al. (2024) similarly found that individual green values (IGV) moderated the GHRM–green knowledge sharing relationship, confirming that personal environmental values function as a consistent amplifier of GHRM effects across mediating pathways. This convergent evidence suggests that HEIs with higher proportions of environmentally committed faculty and staff will experience stronger GHRM behavioral effects a finding with direct implications for green-oriented recruitment as a prerequisite for GHRM program effectiveness. Industry 4.0 technologies moderated the GHRM–sustainable development relationship in Zafar and Khan (2024), who found that digital transformation strengthened GHRM sustainability outcomes in the aviation industry. Lu et al. (2023) provide a complementary moderating insight from their multilevel SEM study across 96 Chinese firms: the serial mediation pathway from SHRM-common good values through employee resilience to work engagement and performance was robust across all three AMO bundles (ability, motivation, opportunity), suggesting that values alignment at the organizational level reinforces individual-level motivational pathways in ways that transcend any single practice domain. This findings implies that HEIs embedding GHRM in their broader institutional values rather than implementing it as a standalone HR initiative may achieve significantly stronger behavioral and performance outcomes. Kerdawy (2018) found that corporate support for employee volunteering (CSEV) moderated the GHRM–CSR relationship positively and significantly, indicating that institutional scaffolding for green participation beyond formal job roles amplifies the GHRM–sustainability chain a moderation particularly actionable for HEIs, which already provide extensive volunteer and community engagement infrastructure.

6.4 Theme 4: Behavioral Outcomes - Faculty and Staff Eco-Friendly Conduct

The behavioral outcomes documented across the corpus can be organized into three categories: in-role green behavior, extra-role green behavior (OCBE), and private-sphere green behavior. Pan et al. (2025) explicitly disaggregate pro-environmental behavior into these three categories, noting that GHRM practices do not uniformly affect all three dimensions. In-role green behavior in academic institutions encompasses sustainable research methodologies, integrating sustainability content into curricula, paperless administrative practices, energy-efficient equipment use, and institutional environmental policy compliance. The corpus suggests that green training and green performance appraisal are the primary GHRM drivers of in-role green behavior, operating through AMO ability and motivation mechanisms respectively. Amini et al. (2024) confirm that GTD and GPMA both significantly predict eco-friendly in-role behavior among Afghan university employees. Ramachandran et al. (2024), studying Chinese employees across education and training contexts using 400 online questionnaires with an 89% response rate, found that green participation had the strongest correlation with employee job performance among all five GHRM dimensions a finding that elevates employee involvement above training and appraisal as the most potent in-role behavioral driver. Akbar, Ahmad, Khalid, Aslam, and Bhatti (2024), analyzing 150 Pakistani organizations through SEM and in-depth interviews with 20 HR managers, found that GHRM implementation was associated with measurable improvements in financial performance, employee satisfaction, and operational efficiency, with the manufacturing sector showing the strongest effects but also found that GHRM practices positively influenced employee engagement and satisfaction in all sectors studied, suggesting transferable behavioral mechanisms applicable to HEI service-sector analogues. Abdelhakim (2024), synthesizing literature from UAE organizational contexts, confirmed that GHRM fosters employee engagement with sustainability initiatives, and that this

engagement translates into demonstrable improvements in environmental performance, though the review also acknowledges that implementing comprehensive green HR systems remains challenging due to organizational complexity.

Extra-role green behavior, or OCBE, represents voluntary environmental contributions participating in campus greening initiatives, advocating for sustainability in faculty governance, mentoring students on environmental responsibility, and organizing environmental events. Multiple studies (Kania, 2024; Hossain et al., 2024; Efranto, Sipayung, & Amrulloh, 2026) confirm that GHRM practices particularly green employee involvement and green reward systems are significant predictors of OCBE. Efranto et al. (2026), in their decade-long review, synthesize evidence showing a consistent trajectory in which GHRM practices progressively shift employee orientation from compliance-oriented in-role behavior toward values-driven OCBE as implementation matures. Pinzone et al. (2019) provide healthcare sector evidence that green training predicts both organization-focused OCBE (e.g., participating in sustainability events) and co-worker-focused OCBE (e.g., helping colleagues integrate environmental protection into their work), with this dual prediction partially mediated by green goal difficulty implying that the motivational challenge embedded in environmental training targets activates behavioral investment that generic training does not. Dumont et al. (2016) establish that the GHRM–extra-role behavior link is entirely indirect through psychological green climate, meaning that HEIs seeking to generate OCBE must invest not only in GHRM practices but in the organizational cultural conditions those practices are designed to create. Cheema and Javed (2017) and Kerdawy (2018) add that when GHRM is coupled with visible institutional support for environmental participation through volunteering programs, CSR initiatives, and managerial role modeling both environmental commitment and CSR performance outcomes are amplified, suggesting that the green participation ecosystem matters as much as any individual GHRM practice.

The mediation of work engagement in the GHRM–green behavior relationship (Kania, 2024; Gill et al., 2023) suggests that GHRM produces green behavior partly through its positive effects on overall organizational engagement. This has a counterintuitive implication: organizations investing in GHRM may see green behavioral benefits even among employees not initially environmentally oriented, as engagement-boosting properties of perceived organizational investment generalize to pro-environmental conduct. Rapo (2024), through qualitative interviews with three HR managers and three employees in Albanian service organizations, provides a complementary phenomenological perspective: employees reported feeling more motivated when their organization demonstrated sustainability commitment, and they actively modified their own work habits to align with institutional green values confirming the engagement-to-behavioral-change pathway through qualitative rather than statistical evidence. This qualitative validation, while limited by sample size (n = 6), corroborates the quantitative mediation evidence from larger studies. Abdelhakim (2024) reinforces this finding through his review of UAE-context literature, concluding that employees engaged in sustainability initiatives are more likely to demonstrate behaviors that positively impact environmental performance, while also acknowledging that measuring the effectiveness of GHRM on engagement and environmental outcomes lacks standardized methodological protocols. Ali et al. (2024) add that the mediating role of employee green behavior between green HRM and environmental sustainability was confirmed across Pakistan, Latvia, and Uzbekistan providing cross-national validation that the GHRM–engagement–behavior pathway is not culturally bounded. A critical tension concerns the distinction between behavioral intention and actual behavior. Several studies measure self-reported behavioral intentions rather than documented behavioral changes. This methodological shortcoming means the corpus likely overestimates the GHRM–behavior link if intention-behavior gaps are significant a concern particularly acute in HEI contexts where academic discourse about sustainability may inflate self-reported environmental intentions. Li et al. (2023) illustrate this nuance directly: while GHRM positively predicted psychological green climate and pro-environmental behavior in Pakistani hospitals, pro-environmental behavior did NOT significantly mediate the relationship between psychological green climate and environmental performance, nor did individual green values moderate the pro-environmental behavior–environmental performance link. This null finding on the final behavioral-to-performance link is theoretically significant because it cautions against assuming that intention-to-behave-greenly automatically converts to measurable organizational environmental improvement a caution directly applicable to HEIs designing GHRM programs with institutional environmental performance targets.

6.5 Theme 5: Institutional and Organizational Sustainability Performance

Beyond individual-level behavioral outcomes, a significant stream of the corpus examines GHRM's contribution to organizational sustainability performance across the triple bottom line: environmental performance (reduced emissions, resource efficiency, waste reduction), social performance (employee well-being, equity, community relations), and economic performance (operational cost reduction, competitive positioning). This framing, explicitly invoked in Zafar and Khan (2024) and Nirmala and Al Gharsi (2024), positions GHRM as a strategic organizational resource rather than merely an HR compliance mechanism. The systematic review by Sultana et al. (2026) finds that GHRM improves environmental performance, responsible employee engagement, CSR, and operational efficiency across AMO, SET, RBV, Stakeholder Theory, and CSR Theory frameworks. Alrifae (2025) similarly identifies six core GHRM practices as crucial sustainability outcome drivers across all TBL dimensions. Mousa and Othman (2019), in their Palestinian healthcare study, found that GHRM had a positive relationship with all three dimensions of sustainable performance environmental, economic, and

social with the strongest link occurring between GHRM and environmental performance. Green hiring and green training and involvement emerged as the most influential practices, with green performance management and compensation showing weaker independent effects. This pattern supports a differentiated view of GHRM practice efficacy: attraction and development mechanisms generate stronger sustainability performance outcomes than evaluation and incentive mechanisms, at least in service sector contexts analogous to HEIs. Dilrukshi and Aluthge (2024), synthesizing 66 publications through a desk-based review, confirm that green HRM is a vital driver of all three pillars of sustainable organizational performance, with the interconnectedness of economic, social, and environmental performance dimensions requiring integrated rather than siloed GHRM implementation. Nson (2024), extending the performance frame to societal sustainability, proposes that GHRM contributes to community well-being and intergenerational equity not merely organizational metrics through the mediating role of environmental practices, a framing with direct normative applicability to HEIs given their public interest mandate. Kalei (2024), reviewing literature from 1995–2020, further confirms that GHRM generates positive environmental outcomes at individual, corporate, community, and societal levels, but identifies the lack of a robust analytical and theoretical framework as a persistent limitation particularly affecting developing economy contexts.

For HEIs specifically, sustainability performance metrics increasingly include carbon neutrality commitments, green building standards, sustainable procurement policies, and environmental research output. Wiyono et al. (2025) found that environmental practices in Indonesian private HEIs positively influenced employee performance, with governance practices amplifying these effects. Asfahani (2023) found that GHRM significantly predicted both environmental performance and competitive advantage in Saudi HEIs. Marditama, Yusliza, and Purnomo (2024), in a systematic literature review of 26 studies published between 2019 and 2023, found that proactive environmental strategies pollution reduction and sustainable development initiatives were the most consequential drivers of environmental performance, particularly when coupled with green innovation practices. Leadership commitment, stakeholder pressure, and resource availability were identified as the key organizational factors moderating GHRM's environmental performance effects. This finding has direct institutional implications for HEIs: environmental performance targets set through strategic leadership and reinforced by stakeholder expectations (accreditation bodies, funders, students) are more likely to generate substantive GHRM implementation than internally generated HR initiatives alone. Kanan et al. (2023), studying Palestinian manufacturing firms, found that green innovation partially mediated the GHRM sustainable performance relationship confirming that GHRM generates sustainability performance partly by stimulating organizational innovation capacity rather than solely through behavioral compliance. Setyadi et al. (2023), studying 110 Indonesian manufacturing firms, found that sustainable production mediated both green logistics–SDO and GHRM–SDO relationships, providing further evidence of an efficiency-based pathway to institutional sustainability that operates independently of behavioral attitude change. Akbar et al. (2024) document that GHRM implementation was associated with reduced energy consumption and waste production alongside improved financial performance and operational efficiency concrete sustainability performance metrics that HEIs with quantitative environmental targets could potentially replicate. The growing integration of AI into GHRM examined by Ajuluchukwu et al. (2026) across 3,600 professionals in Nigeria represents a frontier development in institutional sustainability performance. AI-guided eco-feedback systems and AI-supported green training programs were found to be positively associated with sustainability outcomes through the mediating roles of digital literacy and green organizational climate. As universities increasingly adopt AI-enhanced HR technologies, the question of how these tools can reinforce GHRM objectives becomes pressing. Lu et al. (2023) provide a complementary finding on organizational climate: in their 96-firm multilevel study, SHRM practices grounded in common good values generated employee resilience, work engagement, and performance through a serial mediation chain suggesting that the macro-level values framework within which GHRM is embedded substantially determines the sustainability performance chain it generates. For HEIs, this finding implies that GHRM's institutional sustainability impact will be substantially stronger when implemented as part of a broader values-aligned governance framework rather than as a set of discrete HR process modifications. Liu et al. (2023) add that responsible leadership mediates between GHRM, green innovation, and sustainable business performance, while pro-environmental behavior provides a partial behavioral mediation confirming that institutional leadership quality is a necessary amplifier of GHRM-driven sustainability outcomes.

Discussion

7.1 The Substance–Symbolism Tension: Challenging the Dominant Optimistic Narrative

The dominant narrative across the GHRM corpus is optimistic: GHRM practices consistently, significantly, and positively affect employee green behavior and organizational sustainability performance. This optimism deserves critical interrogation. Several studies introduce important qualifications that the field's predominant quantitative self-report methodology tends to suppress. Pan et al. (2025) provide the most theoretically sophisticated challenge. Their finding that greenwashing perceptions negatively moderate the GHRM–behavior relationship exposes a fundamental vulnerability: GHRM is more easily mimicked symbolically than implemented substantively. Organizations adopting green HR language without genuine system integration may actually harm environmental motivation by creating cynicism a risk that is

institutionally plausible in HEIs, where pressure to appear sustainable for rankings and funding purposes may incentivize symbolic GHRM adoption well ahead of substantive practice change. Similarly, Hossain et al. (2024) note that banks in their sample had "established green targets" and "implemented comprehensive environmental training programs" yet actual implementation was "adequate but not very satisfactory." Mishra (2017) reinforces this concern from an empirical organizational study: in six Indian manufacturing firms, GHRM practices were largely informal and lacked systematic follow-up the organizations communicated environmental values but had not institutionalized them in HR system architecture. Fayyazi et al. (2015) attribute such gaps specifically to the absence of comprehensive implementation plans, suggesting that the substance–symbolism gap is a planning and governance failure as much as a cultural or motivational one. Shukla (2024) identifies employee resistance to change and initial implementation costs as additional mechanisms by which symbolic GHRM adoption fails to achieve substantive behavioral outcomes mechanisms that are likely amplified in HEIs, where academic autonomy norms create particular resistance to top-down HR system changes. Abhisha and Jeba Melvin (2024) and Kumari and Kathuria (2024) note that the definitional ambiguity of "green HRM" itself still lacking consensus across the literature further enables symbolic adoption, since organizations can claim GHRM compliance without any verifiable behavioral standard against which to be held accountable.

7.2 AMO Theory as Both Strength and Constraint

AMO theory is the corpus's dominant theoretical framework, and its application is generally appropriate and productive. The framework's tripartite structure ability (green training), motivation (green rewards and performance), and opportunity (green employee involvement and climate) provides an analytically tractable scaffold for organizing GHRM sub-practices and predicting behavioral effects. Its consistent confirmation across diverse contexts suggests it captures universal organizational mechanisms. However, AMO theory carries constraining assumptions. First, it treats ability, motivation, and opportunity as independently actionable levers, whereas the corpus reveals important interaction effects: Ayari and Al Meer (2025)'s finding that green performance management was non-significant while green rewards and training were highly significant suggests that motivational leverage is context-contingent. Second, AMO theory focuses on individual-level psychological mechanisms without adequately accounting for social and institutional dynamics. In universities, where academic identity is tied to disciplinary communities rather than employing organizations, the motivational dimension of AMO may operate differently than in hierarchically managed corporate settings. Lu et al. (2023)'s sustainable HRM-common good values (SHRM-CGV) extension of AMO reinterpreting the opportunity bundle as encompassing prosocial rather than merely organizational environmental participation offers a theoretically promising adaptation for HEI contexts, where faculty motivation is characteristically driven by intrinsic and prosocial goals. Vasilev et al. (2024) push further, arguing that AMO mechanisms must be embedded in broader cultural and societal transformation processes to achieve genuine behavioral change, not merely HR-mediated behavioral compliance. Kumari and Kathuria (2024) add that the conceptual ambiguity around "green" and "GHRM" constrains the systematic application of AMO, since different studies operationalize the three pillars through different practice configurations limiting cross-study comparability. Chowdhury et al. (2023)'s holistic cyclical framework, integrating AMO with RBV, Stakeholder Theory, SET, and Social Identity Theory, addresses this by framing GHRM as a cyclical institutional process rather than a linear individual-level mechanism a reframing with particular theoretical relevance for HEIs, where sustainability must be simultaneously managed at individual, departmental, institutional, and societal levels.

7.3 The HEI Context: Institutional Logic and Its Consequences for GHRM

The most persistent analytical gap in the corpus is the near-absence of systematic analysis of how the distinctive institutional logic of higher education shapes GHRM adoption, implementation, and effectiveness. Universities are characterized by academic freedom norms, shared governance, tenure systems, disciplinary identity formation, and the dual mandate of knowledge production and societal service each with direct GHRM implications. Institutional theory would predict that GHRM adoption in universities is driven more by mimetic and normative isomorphic pressures emulating leading sustainability universities and responding to accreditation and funding agency expectations than by coercive regulatory pressures that drive GHRM in manufacturing or energy sectors. This has a critical implication: GHRM in HEIs may be systematically more symbolic than substantive. Asfahani's (2023) HEI-specific finding that environmentally specific servant leadership negatively moderated GHRM's competitive advantage contribution while positively moderating its environmental performance contribution suggests that HEI leadership values actively redirect GHRM's institutional effects in ways not observed in corporate settings. Gill et al. (2023)'s confirmation of a GHRM–green work engagement–green performance chain within Pakistani HEIs demonstrates that HEI-specific GHRM effects are real and empirically tractable, but the study's single-district scope limits generalizability. Dubey and Gupta (2018) argue that HEIs have a distinctive advantage over other sectors: by embedding GHRM values in management and professional education programs, universities can simultaneously improve their own green performance and generate spillover effects by training future organizational leaders in sustainable HR practices a multiplier mechanism unavailable to other sectors. The shared governance model prevalent in research universities complicates top-down GHRM implementation. Green performance appraisal systems designed without faculty governance input are likely to face resistance on grounds of academic freedom.

Green reward systems conflicting with tenure and promotion criteria will face structural disincentives that override intrinsic environmental motivation. These dynamics are entirely absent from the corpus's empirical evidence base, representing a fundamental analytical lacuna.

7.4 Causal Mechanisms: What We Know, What We Assume, and What We Cannot Yet Establish

The corpus establishes correlational associations between GHRM practices and green behavioral outcomes with reasonable consistency. What it cannot establish given the dominance of cross-sectional self-report designs is the direction, strength, and mechanism of causation. Three alternative causal narratives are consistent with the observed patterns: First, the standard narrative: GHRM practices produce green behavior through enhanced ability (training), strengthened motivation (rewards), and expanded opportunity (involvement). This is the narrative the corpus predominantly supports. Second, the selection narrative: organizations with pre-existing environmental cultures attract environmentally oriented employees, implement GHRM as an expression of that culture, and observe high green behavior as an outcome of cultural selection rather than GHRM intervention. Third, the signaling narrative: GHRM practices function primarily as organizational signals of environmental commitment, and it is the perception of that commitment rather than the specific content of any practice that produces green behavior through social exchange mechanisms.

The time-lagged design of Pan et al. (2025) provides the most credible evidence for the first narrative, but even a three-wave design cannot rule out selection effects over longer time horizons. Dumont et al. (2016)'s multi-informant design, separating supervisor ratings of subordinate in-role behavior from self-reported extra-role behavior, partially addresses common-method bias while providing evidence that the causal pathway from GHRM to in-role behavior is direct while the pathway to extra-role behavior is entirely mediated by psychological green climate a causal differentiation not achievable with single-source designs. Li et al. (2023)'s null finding that pro-environmental behavior does not mediate psychological green climate's effect on environmental performance represents a further causal complication: even when GHRM successfully generates behavioral intentions, the translation of those intentions into measurable organizational environmental performance cannot be assumed. Truly resolving this causal ambiguity requires quasi-experimental or natural experiment designs exploiting variation in GHRM implementation timing across organizational units designs entirely absent from the corpus.

7.5 Contradictions Within the Corpus

First, while most studies find that green performance appraisal is a significant GHRM predictor, Ayari and Al Meer (2025) and Yusoff et al. (2018) both found it non-significant in their respective contexts. Yusoff et al. (2018) attributed this to the novelty of environmental issues in Malaysian hotels at the time, while Elkeerany and Osman (2024) found positive significance in Egyptian healthcare, suggesting that GPMA effectiveness is context- and sector-maturity-dependent rather than uniformly limited as a mechanism. This contradiction challenges the assumption that any single GHRM practice is universally effective and calls for sector- and context-specific effectiveness analyses. Second, the corpus simultaneously argues that GHRM improves employee well-being (Wiyono et al., 2025; Nirmala & Al Gharsi, 2024) and that green HRM may introduce performance pressures that increase work-related stress. Pinzone et al. (2019)'s finding that green training positively predicted job satisfaction not merely behavioral outcomes supports the well-being-enhancing view, while Shukla (2024)'s identification of resistance to change and pressure-related barriers in organizational contexts suggests a potential dark side to GHRM implementation that is underexamined. In HEIs, where workload-related stress is already a documented institutional challenge, the question of whether green performance demands amplify rather than relieve environmental stress merits empirical investigation. Third, the corpus both confirms and complicates the linear GHRM–behavior–performance chain. Liu et al. (2023)'s finding of partial behavioral mediation where direct GHRM–performance relationships coexist with behavior-mediated indirect pathways suggests a dual mechanism: GHRM improves sustainability through both behavioral transformation and direct operational efficiency gains. Setyadi et al. (2023)'s sustainable production mediation provides a concrete efficiency-based pathway that operates without requiring behavioral attitude change as an intermediate step. Together, these findings imply that GHRM program designers in HEIs need not rely solely on behavioral change mechanisms to generate institutional environmental performance improvements administrative and operational efficiency pathways may generate comparable outcomes in shorter timeframes.

Conclusion and Recommendations

Based on the synthesis of 64 studies, several findings can be stated with reasonable confidence. GHRM practices particularly green training and development, green recruitment and selection, and green reward and compensation consistently demonstrate positive associations with employee pro-environmental behavior, OCBE, and organizational environmental performance across diverse national and sectoral contexts. The AMO framework provides a theoretically coherent and empirically well-supported account of these associations. Environmental awareness and organizational environmental commitment consistently function as meaningful mediating and moderating mechanisms. The definitional and

measurement infrastructure of the field, anchored in Tang et al.'s (2017) validated five-factor scale and conceptually enriched by Ahmad (2015) and Arulrajah et al. (2015), has matured sufficiently to support replicable empirical synthesis across diverse contexts. Within the HEI context, evidence confirms that GHRM practices produce significant eco-friendly behavioral effects among faculty and staff. Amini et al. (2024) provide the most direct empirical evidence. Wiyono et al. (2025) demonstrate that ESG-aligned environmental practices improve employee performance in Indonesian private HEIs. Asfahani (2023) extends this to Saudi Arabian HEIs, confirming that GHRM significantly predicts both environmental performance and competitive advantage, with servant leadership as a contextual moderator. Gill et al. (2023) provide the corpus's most direct evidence from Pakistani HEIs that GHRM drives green work engagement, which in turn drives green performance establishing the GHRM engagement–performance chain within an educational context. Pinzone et al. (2019) add that green training enhances not only pro-environmental behavior but also employee job satisfaction, suggesting that GHRM generates institutional co-benefits relevant to HEI workforce management beyond the environmental domain. Despite significant progress, several dimensions of GHRM in HEIs remain critically underdeveloped. Causal mechanisms cannot be definitively established on the basis of existing cross-sectional evidence. The vast majority of studies concentrate on South and Southeast Asian contexts. The distinctive institutional logic of universities academic freedom, shared governance, tenure systems, disciplinary identity is almost entirely unexamined as a moderating context for GHRM effectiveness. The gap between symbolic and substantive GHRM adoption is not examined in any HEI-specific study. The specific implementation barriers most salient to HEIs including tenure system conflicts with green KPI integration, academic autonomy resistance to performance appraisal modification, and the absence of green compensation mechanisms compatible with academic rank and promotion criteria have not been empirically investigated. The finding by Fayyazi et al. (2015) that the primary barrier to GHRM implementation is the absence of a comprehensive plan, rather than staff resistance, has not been tested in higher education contexts and may have different ordering in universities where planning infrastructure is more developed but implementation authority is more distributed. Methodological homogeneity the almost universal reliance on cross-sectional PLS-SEM survey designs with self-reported dependent variables constitutes the single greatest threat to the internal validity of the corpus's findings.

The gaps identified in this review generate a specific and prioritized research agenda. First, longitudinal panel studies tracking GHRM implementation and behavioral outcomes in HEIs over three to five years would provide the first genuinely causal evidence in educational settings. Second, comparative case studies across universities with varying GHRM implementation maturity using qualitative methods to capture institutional dynamics, faculty governance interactions, and implementation barriers would provide contextual depth that survey studies cannot achieve. Third, research explicitly examining the symbolic-substantive implementation distinction in HEIs is urgently needed, ideally through organizational ethnography or mixed-methods designs triangulating HR policy documents, management interviews, and employee behavioral measures. Fourth, studies examining GHRM effectiveness outside South and Southeast Asia particularly in Western European, African, and Latin American HEI contexts would substantially advance geographic generalizability. Fifth, the intersection of GHRM with emerging technologies AI-enhanced green training platforms, digital environmental performance dashboards in HEI contexts represents a frontier warranting dedicated scholarly attention, given Ajuluchukwu et al.'s (2026) finding that AI-enabled GHRM mediates sustainability outcomes through digital literacy and organizational climate. Sixth, and specifically motivated by Dumont et al. (2016) and Li et al. (2023), future research should explicitly examine whether organizational-level GHRM effects translate into objectively measurable environmental performance improvements rather than relying exclusively on self-reported behavioral outcomes. Seventh, building on Gill et al. (2023) and Asfahani (2023), HEI-specific studies should systematically examine the roles of academic leadership styles, faculty governance structures, and disciplinary composition as moderators of GHRM effectiveness variables that have no corporate sector parallel and that likely substantially alter the AMO mechanisms through which GHRM generates behavioral outcomes. Eighth, the suggestion by Dubey and Gupta (2018) that HEIs can serve as GHRM diffusion agents by embedding sustainability in management education deserves empirical investigation: does curriculum-embedded GHRM content predict alumni-level sustainability behavior in organizational careers? Finally, the field requires theoretical innovation beyond the dominant AMO framework. Behavioral change theories the Theory of Planned Behavior, Norm Activation Model, and self-determination theory offer complementary lenses that AMO's organizational-level focus cannot capture. The integration of institutional theory with AMO-based models, specifically applied to HEIs, would provide a theoretically powerful framework for understanding both why universities adopt GHRM and whether that adoption is likely to produce genuine or merely symbolic behavioral transformation. Lu et al.'s (2023) common good values reframing of AMO and Chowdhury et al.'s (2023) holistic cyclical framework both point toward more context-sensitive theoretical models that could provide stronger predictive traction in HEI settings than standard AMO applications have achieved.

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Appendices

No appendices are attached to this study.