

Green Human Resource Management and Employee Green Work Behavior: The Mediating Roles of Green Work Engagement and Green Psychological Climate in Chinese Higher Education Institutions

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Abstract

Aim/Purpose: Amid mounting environmental challenges, such as climate change, resource depletion, and ecological degradation, organizations are increasingly emphasizing sustainable operations. Within this paradigm, Green Human Resource Management (GHRM) has emerged as a strategic tool to cultivate employees' environmental awareness and promote pro-environmental behaviors. This research aimed to examine the influence of GHRM initiatives on employees' green work behaviors, including both mandatory in-role and voluntary extra-role behaviors, within the context of Chinese higher education institutions (HEIs). Moreover, it investigated the mediation effects of Green Work Engagement (GWE) and Green Psychological Climate (GPC) in converting GHRM policies into workplace sustainability outcomes.

Introduction/Background: Sustainability has become a critical consideration in organizational strategy, requiring HRM practices to integrate environmentally responsible principles. Previous research has indicated that green human resource management (GHRM) can shape employee attitudes, awareness, and behaviors toward environmental responsibility, thereby supporting organizational sustainability objectives. Employee green behaviors, including task-specific and voluntary eco-friendly actions, are essential for achieving sustainability performance. GHRM facilitates these outcomes through green recruitment, training, performance evaluation, and reward systems that foster an environmentally focused organizational culture. Green work engagement (GWE) further mediates this process by reflecting employees' psychological commitment, energy, and absorption in environmental activities. Higher education institutions (HEIs), as knowledge-intensive organizations, are uniquely positioned to promote sustainability through academic instruction and environmentally conscious management practices. In China, HEIs play a strategic role in advancing sustainability in line with national carbon neutrality goals and educational policies. However, the mechanisms through which GHRM translates these into green behaviors, particularly the roles of GWE and green psychological climate (GPC), remain underexplored, highlighting the need for this research.

Methodology: Data were gathered from academic and administrative personnel at higher education institutions in Shenyang, China, selected due to their industrial history and ongoing environmental initiatives. A minimum sample of 399 was determined using Yamane's formula (1973), and 420 valid responses were obtained through an online questionnaire distributed via email and WeChat. Measurement scales were adapted from prior studies: GHRM (Dumont et al., 2017), GWE (Schaufeli et al., 2006), GPC (Norton et al., 2014), and green work behavior (Bissing-Olson et al., 2013). The survey instrument underwent translation and back-translation to ensure linguistic accuracy. Statistical analyses included assessments of normality, reliability, validity, multicollinearity, and common method bias, followed by structural equation modeling and mediation analysis using SPSS and AMOS. Control variables

such as gender, age, and educational background were included to account for potential influences on green work behaviors.

Findings: The results indicated significant positive relationships between GHRM and both in-role and extra-role green behaviors, supporting the theoretical underpinnings of Social Exchange Theory (SET), which postulates that employees reciprocate organizational commitment with engagement in sustainability initiatives. GHRM also positively influenced GWE, consistent with the Job Demands-Resources (JDR) model, indicating that green HR practices serve as motivational resources enhancing employee engagement in sustainability-related tasks. Moreover, GWE was found to mediate the relationship between GHRM and green behaviors, suggesting that employee engagement plays a critical role in translating HR-driven environmental strategies into both mandatory and discretionary eco-friendly workplace actions. However, GPC did not demonstrate a significant mediating effect, suggesting that employees' perceptions of an organization's sustainability climate alone may not be sufficient to drive green behaviors without associated structural and managerial support.

Contribution/Impact on Society: This research extends the GHRM literature by simultaneously examining both in-role and extra-role green behaviors, incorporating dual mediators, GWE and GPC, within the underexplored context of Chinese HEIs. The study provides theoretical insights by integrating SET, JDR, Broaden-and-Build Theory, and Social Cognitive Theory to explain the processes linking GHRM to employee green behaviors. Practically, the findings inform HEI management on effective strategies to cultivate sustainable workplace practices. By implementing sustainability into HR policies, institutions can enhance employee participation in eco-friendly initiatives, thereby improving institutional environmental performance and promoting broader societal sustainability outcomes.

Recommendations: HEIs should integrate GHRM into their core HR policies by implementing green recruitment, sustainability training, performance evaluation, and incentive schemes to foster both mandatory and voluntary green behaviors. Institutions should cultivate a culture that promotes GWE through collaborative spaces, recognition of sustainability initiatives, and participatory decision-making. Partnerships with government and industry can support knowledge sharing and sustainability innovation. Behavioral nudges, such as environmental reminders and infrastructure adjustments, can reinforce engagement while reducing ecological footprints. Continuous monitoring of GHRM initiatives, together with green infrastructure investments, can ensure employees are psychologically motivated and practically equipped to engage in sustainable actions.

Research Limitations: The research was limited by self-reported data, the focus on a single Chinese city, and a cross-sectional design, which constrain generalizability and causal inference. Only two mediating variables were examined, and findings were confined to HEIs in China, limiting applicability to other sectors and cultural contexts.

Future Research: Future studies should employ longitudinal designs, multiple data sources, and cross-cultural comparisons to enhance validity and generalizability. Additional mediators and moderators, such as individual green values, leadership styles, and organizational culture, should be investigated. Research should also extend beyond HEIs to explore industry-specific issues and opportunities in implementing GHRM measures, thereby contributing to a more comprehensive knowledge of sustainability strategies across diverse organizational contexts.

Keywords: *GHRM, green psychological climate, green work behavior*

Introduction

Amid intensifying environmental challenges such as climate change, resource exhaustion, and ecological deterioration, coupled with worldwide global prominence on sustainability, organizations are

increasingly reshaping their strategies to align with environmentally responsible practices. As sustainability becomes integral to organizational operations, human resource management (HRM) has gained prominence as a key mechanism for embedding green management principles. Core HRM functions, including recruitment, training, and performance evaluation, must integrate environmentally conscious strategies to support sustainability goals (Zhang et al., 2024). Encompassing sustainability into HRM fosters a workplace culture that promotes eco-friendly behaviors and reinforces organizational environmental commitments. Through its guidelines and practices, HRM directly shapes employees' environmental outlooks, mindfulness, and motivation, embedding environmental responsibility into organizational values and structures (Adu Sarfo et al., 2024). Thus, aligning HRM with environmental principles enables organizations to cultivate environmentally conscious workforces, enhancing both sustainability outcomes and competitive advantage.

Employee green behavior, defined as workplace conduct that advocates environmental sustainability, is essential to effectively implement sustainable practices (Zhang et al., 2024). Prior studies highlight that employees' engagement in environmentally responsible behaviors is essential to achieving sustainable performance and maintaining competitiveness (Chen & Wu, 2022). In this context, green human resource management (GHRM) has become a tactical HRM method aimed at enhancing employees' ecological awareness and encouraging pro-environmental behavior. GHRM encompasses practices such as green recruitment, training, performance appraisal, and rewards, all designed to foster an organizational culture oriented toward sustainability (Ercantan & Eyupoglu, 2022). Moreover, green work engagement (GWE) reflects a psychological state characterized by employees' vigor, dedication, and absorption in environmental tasks. Existing research (Lu, 2025) indicates that GWE plays a crucial role in translating GHRM initiatives into actual green behaviors, serving as a motivational bridge that transforms HR-driven environmental policies into sustained employee commitment.

Higher education institutions (HEIs) serve a crucial role in promoting sustainability through education, research, and internal management practices. As hubs of knowledge creation and innovation, HEIs are uniquely positioned to model sustainable practices and influence broader social change (Oliveira & Proença, 2025). Establishing a green workplace culture within HEIs requires incorporating sustainability into both academic and administrative domains, where faculty members, researchers, and administrative staff are key stakeholders whose daily practices significantly affect the success of institutional sustainability initiatives (Lashari et al., 2022). Despite growing attention to GHRM across industries, its application in HEIs remains underexplored, while a systematic review by Oliveira and Proença (2025) emphasized the necessity for further research on GHRM in service-oriented institutions.

In the Chinese context, examining GHRM and employee green behaviors in HEIs is particularly relevant given China's sustainability targets, the rapid expansion of its education sector, and HEIs' growing role in promoting ecological responsibility. Under the 14th Five-Year Plan, China emphasizes green development and sustainability across industries, including education, to support its carbon neutrality goal before 2060 (Ba & Cao, 2023). This policy environment encourages the adoption of GHRM practices to foster eco-friendly workplace behaviors. Early research has shown the positive effects of GHRM on sustainable performance across Chinese industries, suggesting similar benefits for the education sector (Ba & Cao, 2023). By implanting GHRM within HEIs, these institutions can instill sustainability values in educational professionals and influence a broad range of stakeholders (Xuemin et al., 2024). Empirical evidence from private Chinese universities has further confirmed that GHRM significantly enhances sustainable performance through green behaviors (Xuemin et al., 2024).

However, the mechanisms through which GHRM translates into concrete green work behaviors in Chinese HEIs remain inadequately scrutinized. Some researchers have suggested that the effectiveness of GHRM depends on employees' perceptions of the green psychological climate (GPC) that reflects shared views of organizational sustainability values, but the mediating role of GPC remains underexplored (Naz et al., 2023). As sustainability becomes embedded in China's higher education policies, encouraging

meaningful green behaviors requires not only formal policies, but also a supportive organizational climate that fosters environmental responsibility. Accordingly, the present study proposes a unified research model examining the effects of GHRM on both mandatory and discretionary green behaviors in HEIs, with GWE and GPC as mediating mechanisms. Based on Social Exchange Theory (SET) and grounded on the Job Demands–Resources model (JDR), Broaden-and-Build Theory (BBT), and Social Cognitive Theory (SCT), this research advances the GHRM literature. It illuminates how psychological and contextual factors facilitate the translation of HRM initiatives into green work behaviors within the underexplored context of Chinese HEIs, offering both theoretical contributions and practical guidance for sustainability-driven management.

Literature Review

Green Human Resource Management (GHRM) and Green Work Behavior

GHRM is a fundamental element of organizational sustainability, encompassing strategies that promote environmentally responsible employee practices. It typically involves recruiting sustainability-conscious candidates, developing their green competencies, embedding environmental criteria into performance appraisals, and providing incentives to support sustainability initiatives (Dumont et al., 2017). Employee green behavior refers to workplace conduct that supports environmental sustainability and can be separated into in-role and extra-role behaviors. In-role green behaviors are mandatory, task-related activities embedded in job descriptions and evaluations, such as reducing energy consumption and waste (Tirno et al., 2023). In contrast, extra-role green behaviors are voluntary actions that go beyond formal job requirements, including promoting environmental initiatives and assisting colleagues in adopting green practices (Jiang et al., 2022). In the higher education sector, fostering both forms of green behavior among academic and administrative staff is essential, as employees may demonstrate in-role behaviors through sustainability-oriented teaching and research, and extra-role behaviors by actively promoting environmental initiatives on campus.

The relationship between GHRM and employee green behavior is well explained by SET, which emphasizes reciprocity in organizational relationships. When institutions demonstrate a commitment to sustainability through green training, performance evaluation, and reward systems, employees are more likely to reciprocate by demonstrating both required and voluntary green behaviors (Nabi et al., 2023). Empirical evidence consistently has shown that GHRM positively influences green work behaviors across sectors (Nabi et al., 2023). Within HEIs, GHRM practices such as green recruitment, development programs, and sustainability-oriented performance assessments encourage faculty and staff to integrate environmental principles into teaching, research, and institutional operations (Bui et al., 2024). However, early research mainly examined direct relationships or single mediating mechanisms, thus overlooking the simultaneous influence of multiple psychological and contextual pathways through which GHRM translates into employee green behavior. Accordingly, the following hypotheses are proposed:

H₁: GHRM positively affects employees' in-role green work behavior at HEIs.

H₂: GHRM positively affects employees' extra-role green work behavior at HEIs.

GHRM and Green Work Engagement (GWE)

Work engagement reflects employees' cognitive, emotional, and behavioral involvement at their workplaces (Haque et al., 2024). GWE lengthens this notion to employees' enthusiasm, effort, and absorption in sustainability-related tasks (Haque et al., 2024). Prior studies indicate that engagement is shaped by job characteristics, leadership, and HRM practices (Aboramadan, 2022). HRM scholarship has long emphasized the role of organizational support in fostering engagement, with empirical evidence confirming a strong association between supportive HR practices and employee commitment (Aboramadan, 2022). The correlation between GHRM and GWE is well justified by the JDR model, which posits that job resources stimulate motivation and engagement by enabling employees to achieve work goals (Demerouti et al., 2001). HRM initiatives function as key organizational resources that activate

motivational processes and enhance engagement (Susanto, 2023). Within this framework, GHRM practices, such as green recruitment, sustainability-oriented training, and eco-based incentives, serve as critical job resources that promote employee involvement in environmental initiatives (Renwick et al., 2013). By supporting professional development and aligning individual aspirations with organizational sustainability goals, GHRM strengthens employees' dedication to both their roles and institutions (Gomes et al., 2023). Empirical studies across sectors consistently show that GHRM positively influences employees' environmental attitudes and engagement. In the education sector, GHRM has been found to significantly enhance GWE (Aboramadan, 2022), while sustainability training and green incentives further increase employees' engagement in eco-friendly behaviors (Yadate, 2025). In spite of these findings, current literature has primarily treated engagement as a standalone mediating factor without incorporating it with broader institutional contextual factors. This research extends the JD-R model by placing GWE as part of a dual mediation framework, accentuating its interaction with institutional climate in explaining green behaviors. Although research in the higher education sector remains limited, existing evidence suggests that GHRM implementation raises environmental awareness and engagement among academic staff (Veerasamy et al., 2024) and encourages the integration of sustainability principles into research activities (Yang et al., 2024). Accordingly, this research proposes the following hypothesis:

H₃: GHRM positively affects employees' GWE in HEIs.

GWE and Green Work Behavior

The relationship between GWE and environmentally responsible workplace behavior can be explained through the BBT theory (Fredrickson, 2001), which postulates that positive emotions expand individuals' cognitive and behavioral capacities and foster long-term personal resources such as adaptability, learning, and creativity. Extending from this theoretical perspective, this research argues that GWE represents a critical inspiring mechanism that converts sustainable HR practices into actionable individual behaviors, thus bridging the gap between institutional intent and employee action. Applied to GWE, the theory explains that employees who perceive positive feelings from sustainability-concerned activities, such as pride and fulfillment, are more inclined to demonstrate green behaviors, as these emotions enhance mindfulness, intrinsic motivation, and sustained commitment to environmental goals (Chatelain et al., 2018). GWE not only motivates employees' direct participation in environmentally friendly practices but also facilitates the diffusion of green behaviors among colleagues, contributing to broader organizational and societal sustainability outcomes (Marini et al., 2023).

Early research has indicated that highly engaged employees develop stronger organizational relationships and are more likely to comply with environmental policies, including waste reduction and energy conservation practices (Yong et al., 2020). Empirical evidence further confirms that employees with strong GWE are more inclined to fulfill assigned environmental responsibilities and effectively perform sustainability-related job tasks (Haque et al., 2024). Beyond formal duties, work engagement also promotes discretionary pro-environmental behaviors. Engagement fosters a psychological sense of growth, enabling employees to voluntarily participate in sustainability initiatives beyond their assigned tasks (Amah, 2020). Research consistently demonstrates that engaged employees are more proactive in proposing green initiatives, encouraging colleagues, and embedding environmental values into daily work conduct (Chen et al., 2021). In higher education contexts, Fawehinmi et al. (2020) found that academically engaged staff actively integrated sustainability into education and training, thereby enhancing institutional sustainability performance. Accordingly, this study proposes the following hypotheses:

H_{4a}: GWE positively affects employees' in-role green work behavior in HEIs.

H_{4b}: GWE positively affects employees' extra-role green work behavior in HEIs.

The Mediating Role of Green Work Engagement and Green Psychological Climate (GPC)

Green Work Engagement reflects the psychosomatic state in which employees demonstrate commitment, vigor, and absorption in sustainability-related tasks. Drawing on the JDR model, GHRM practices function as institutional resources that improve engagement by providing meaningful work and adequate backing (Haque et al., 2024). Thus, employees with higher GWE are more inclined to integrate sustainability into working roles and volitionally engage in sustainable behaviors (Albrecht et al., 2023). This research advances early studies by investigating GWE and GPC as dual mediators, thus combining both motivational (at individual level) and contextual (at institutional level) mechanisms into a comprehensive theoretical model. This method addresses a notable discrepancy in the literature, where most preceding studies focused on single mediation factors.

Prior studies across sectors have confirmed GWE's critical role in translating sustainability strategies into employee actions. For example, Abualigah et al. (2023) showed that GHRM strengthens both in-role and extra-role green behaviors through enhanced engagement, while Ojo et al. (2022) reported similar findings in the information technology sector. Within HEIs, faculty and staff are vital to sustainability implementation, making GWE a key mediating mechanism between GHRM and green behaviors (Purnomo et al., 2024). Sustainability-oriented training and performance incentives further strengthen employees' motivation and commitment, reinforcing both mandatory and discretionary green behaviors (Aboramadan, 2022). Thus, this research proposes the following hypotheses:

H_{5a}: GWE mediates the relationship between GHRM and employees' in-role green behavior.

H_{5b}: GWE mediates the relationship between GHRM and employees' extra-role green behavior.

In addition to engagement, employees' green behaviors are influenced by the Green Psychological Climate (GPC), defined as the shared perceptions of organizational support for environmental sustainability through policies, norms, and values (Naz et al., 2023). A strong GPC enhances employees' perceived behavioral control and empowerment, encouraging eco-friendly behaviors such as energy conservation and waste reduction (Zhou et al., 2018). However, this research further postulates that while GPC reflects employees' perceptions of a supportive work atmosphere, such perceptions themselves may not be converted into actual behavior without the presence of strong motivational factors such as engagement. This proposition allows for the critical assessment of the relative explanatory strength of GPC compared to GWE. Employees operating in a positive GPC are also more inclined to advocate sustainability to colleagues, enhancing green initiatives beyond formal job requirements (Naz et al., 2023). In HEIs, where faculty and administrative staff act as key sustainability agents, GPC is expected to mediate the relationship between GHRM and green behaviors (Wang & Hu, 2025).

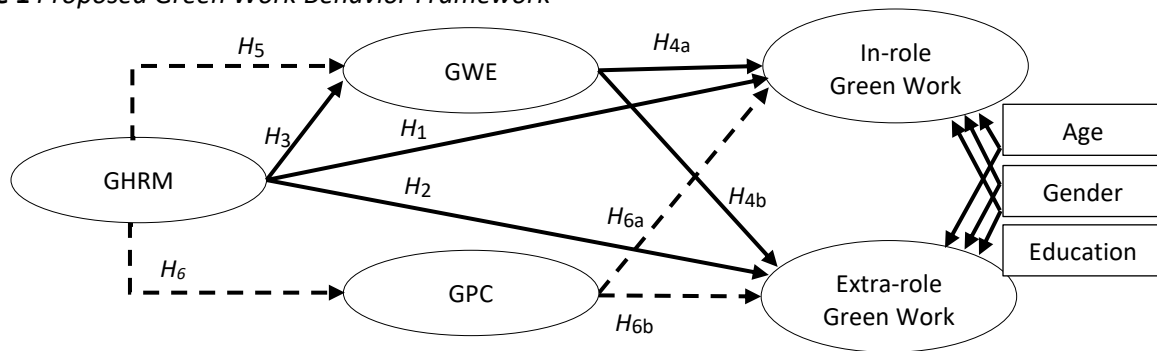
This mediating mechanism is theoretically grounded in SCT theory (Bandura, 1986), which postulates that behavior results from interactions between cognitive, environmental, and social factors. GHRM practices shape organizational environments that foster GPC, thus influencing employees' sustainability perceptions, motivations, and behaviors (Saeed et al., 2019). Through social learning and reinforcement, employees imitate environmentally responsible behaviors exhibited by supervisors and peers, aligning their actions with institutional sustainability norms (Khan et al., 2019). Empirical evidence supports this mechanism, as Chen et al. (2021) and Dumont et al. (2017) found that a supportive GPC strengthens the link between GHRM and green behaviors. By integrating SCT, JD-R and BBT, this research contributes to theory by providing a comprehensive multi-theoretical perspective that justifies both why employees are motivated by engaging and how contextual perceptions of work atmosphere impact the conversion of motivation into behavior. Accordingly, this research posits the following hypotheses:

H_{6a}: GPC mediates the relationship between GHRM and employees' in-role green behavior.

H_{6b}: GPC mediates the relationship between GHRM and employees' extra-role green behavior.

The proposed research framework is presented below in Figure 1.

Figure 1 *Proposed Green Work Behavior Framework*



Note. Solid Line: Direct Relationship; Dashed Line: Indirect Relationship

Methodology

The research data were gathered from academic and administrative personnel at two higher education institutes in Shenyang, a major metropolitan and academic hub in northeastern China. Shenyang was selected due to its historical role as a heavy industrial center and its persistent environmental challenges, including high pollution levels and PM2.5 concentrations exceeding national standards (CEIC, 2023). As a result, the city has been a pivotal hub for government-led sustainability initiatives that require organizations and HEIs to integrate environmental practices into management and human resource systems (SMGO, 2025). With over 40 HEIs and more than 700,000 students, Shenyang provides a suitable context for examining GHRM and sustainable work behaviors within HEIs (SMEB, 2025).

Using Yamane's (1973) formula, a minimum sample size of 399 responses was required. Following a pilot study with 150 responses that confirmed scale reliability and validity, an online self-administered questionnaire was distributed via email and WeChat after obtaining institutional approval. The pilot study's data were not included in the final analysis and were used only for instrument refinement and validation purposes. Data were collected between January and February 2026, yielding 420 valid responses. The survey was administered through Microsoft Forms, included a cover letter explaining the research's purpose, and assured confidentiality. Measurement scales were adapted from established studies, including GHRM (Dumont et al., 2017), GWE (Schaufeli et al., 2006), GPC (Norton et al., 2014), and green work behavior, both in-role and extra-role (Bissing-Olson et al., 2013). All items were measured on a 7-point Likert scale. To ensure linguistic accuracy, the questionnaire was translated into simplified Chinese and then back translated into English by bilingual experts.

Data analysis involved tests of normality, reliability, validity, multicollinearity, and common method bias, followed by structural equation modeling (SEM), path analysis, and mediation testing by means of SPSS and AMOS. Control variables included age, gender, and educational level, consistent with prior evidence that these factors may influence employees' green work behavior (Islam et al., 2023).

Results and Discussion

Results

The demographic profile of the sampled respondents in this research showed that male participants were slightly higher than their female counterparts (46.4%), and the largest group of participants were between 40 and 49 years old (40.5%). Regarding education level, most participants working in HEIs had post-graduate degrees (83.5%). The statistical analysis in this study began by testing data normality, scale validity and reliability, and common method bias assessment, followed by multicollinearity tests, SEM, path analysis, mediation and moderation analysis via SPSS and AMOS programs.

A normality test revealed that skewness and kurtosis values were between -.094 to -1.087 and -1.979 and 1.074, respectively, which were within satisfactory intervals (Hair et al., 2019), meaning that the

sampled research data were normally distributed. A validity test was conducted to assess the scale items' convergence with crossing factor loadings, and confirmatory factor analysis (CFA) was performed to validate the measurement model, with all standardized factor loadings exceeding the minimum threshold. Composite Reliability (CR) and Average Variance Extracted (AVE) values were also calculated, and all values exceeded the minimum accepted values (see Table 1).

Table 1 *Discriminant Validity Testing*

	CR	AVE	In-role	GHRM	GWE	GPC	Extra-Role	Reliability
In-role	.898	.747	.864					.890
GHRM	.909	.635	.425	.797				.901
GWE	.862	.518	.649	.425	.720			.871
GPC	.816	.518	.053	.037	.087	.720		.925
Extra-Role	.863	.679	.534	.422	.604	.090	.824	.859

The computed heterotrait-monotrait (HTMT) ratio values were well under the satisfactory level of .85, as shown in Table 2 (Henseler et al., 2015), which indicated a high level of discriminant validity. Thus, the scale validity of the proposed model was confirmed. Together with the CFA results, the robustness of construct validity was supported.

Table 2 *Heterotrait-Monotrait (HTMT) Ratio Values*

HTMT	GPC	GWE	EX	IN	GHRM
GPC					
GWE	.016				
EX	.042	.535			
IN	-.001	.585	.397		
GHRM	.041	.400	.393	.401	

Reliability testing was conducted using Cronbach's alpha values, and all results were above the satisfactory level of .60 (Henseler et al., 2015). A multicollinearity test was conducted using variance inflation factor values for all predictor variables (GHRM, GWE, and GPC), and all were below 1.2, well below the minimum acceptable level of 3.3 (Petter et al., 2007). The common method bias (CMB) test was conducted using Harman's one-factor method, and the largest loading value of any single factor was 35.79 percent (< 50%); thus, no CMB concern was found.

In Table 3, the Structural Equation Modeling test results revealed that the values of all fit indices for the proposed research model such as goodness-of-fit Index (GFI), comparative fit index (CFI), normed fit index (NFI), Tucker-Lewis coefficient (TLI) and root mean square error of approximation (RMSEA) were all at satisfactory levels, suggesting that the research framework had decent model fit (Kline, 2012). Table 3 showed that both GHRM and GWE significantly impacted employees' green behaviors (in-role and extra-role), although GPC did not have a significant positive effect on employees' green behavior. Thus, hypotheses H_1 , H_2 , H_3 and H_4 were supported. The standardized path coefficients showed that GWE had a relatively stronger effect on both in-role and extra-role green behaviors than GHRM, suggesting that GWE was the most impactful predictor variable in the framework. Although the effect of GHRM was significant, it was only moderately influential, whereas GPC showed almost negligible and non-significant impact, demonstrating limited practical significance. As for the control variables, neither age nor

education level significantly impacted green behavior; only gender showed substantial effects on employees' green behavior.

Table 3 Regression Weight Estimate

			Estimate	S.E.	C.R.	p
GWE	<---	GHRM	.263	.037	7.13	***
GPC	<---	GHRM	.046	.059	.786	.432
In-Role	<---	GWE	.877	.107	8.20	***
Extra-role	<---	GWE	.792	.106	7.50	***
In-Role	<---	GHRM	.160	.047	3.41	***
Extra-role	<---	GHRM	.178	.051	3.52	***
Extra-role	<---	EDUCATION_LEVEL	.050	.059	.846	.398
Extra-role	<---	GENDER	.347	.105	3.31	***
Extra-role	<---	AGE	-.053	.062	-.852	.394
In-Role	<---	EDUCATION_LEVEL	-.006	.054	-.110	.912
In-Role	<---	GENDER	.225	.097	2.32	.020
In-Role	<---	AGE	-.041	.057	-.718	.473
In-Role	<---	GPC	-.014	.035	-.408	.683
Extra-role	<---	GPC	.023	.038	.594	.553

Note. Model fit indices: $\chi^2 = 358.2$ ($p < .00$), $df = 174$, $\chi^2/df = 1.758$, CFI = .973, GFI = .933, NFI = .940, TLI = .967, RMSEA = .044, *** = .001 significance level

The bootstrapping test results in Table 4 show that GWE had a stronger direct positive effect on green behavior than the other predictor variables, though these effects were also significant ($p = .001$).

Table 4 Mediating Effects of Green Work Engagement (GWE) and Green Psychological Climate (GPC)

Relationship	Estimate	Bootstrapping		2-Tailed Significance
Bias-Corrected 95% CI				
<u>Direct Effects</u>		LB	UB	
GHRM - GWE	.263	.176	.372	.001
GHRM - Extra-Role	.178	.081	.290	.002
GHRM - In-Role	.160	.053	.273	.006
GWE - Extra-Role	.792	.607	1.04	.001
GWE - In-Role	.877	.665	1.12	.001
GHRM - GPC	.046	-.078	.176	.473
GPC - Extra-Role	.023	-.055	.102	.549
GPC - In-Role	-.014	-.096	.067	.736
<u>Indirect Effects (through GWE)</u>				
GHRM - Extra-Role	.210	.145	.287	.001
GHRM - In-Role	.230	.163	.316	.001
<u>Indirect Effects (through GPC)</u>				
GHRM - Extra-Role	.002	-.003	.019	.309
GHRM - In-Role	.000	-.004	.012	.623

GHRM's indirect effects on green behavior through GPC were not significant. Given that GHRM's direct and indirect effects on green behaviors were both significant, it can be concluded that GWE only partially mediated the effect on the path relationship between GHRM and employees' green behaviors, but GPC did not exert any mediating effect on the same path relationship. Thus, Hypothesis 5 (a & b) was supported, and Hypothesis 6 (a & b) was rejected.

Discussion

This study examined the correlation between GHRM and employees' green behaviors by distinguishing between in-role and extra-role behaviors, with a particular focus on the mediating role of GWE. The findings demonstrated that GHRM exerts a significant positive effect on both types of green behaviors, consistent with Dumont et al. (2017), who identified a similar link between GHRM and environmentally responsible workplace actions. These results support Social Exchange Theory, suggesting that employees reciprocate organizational sustainability practices by engaging in both mandatory and voluntary green behaviors (Islam et al., 2021). The study also confirmed a strong positive relationship between GHRM and GWE, aligning with the Job Demands–Resources model, which emphasizes the motivational function of organizational resources. This finding was consistent with prior studies indicating that GHRM practices enhance employee engagement (Haque et al., 2024).

Furthermore, the results showed that GWE significantly promotes both in-role and extra-role green behaviors, reinforcing evidence that engaged employees are more likely to exhibit sustained pro-environmental actions (Ababneh, 2021). Importantly, GWE was validated as a key mediating mechanism through which GHRM influences employees' green behaviors, indicating that GHRM affects sustainability outcomes both directly and indirectly via engagement-based processes. This finding aligns with prior empirical research highlighting the importance of indirect pathways in translating GHRM into workplace sustainability behaviors (Aboramadan, 2022). This result also aligns with the findings of Saeed et al. (2019), who concluded that employee engagement functions as a critical psychological link between HR practices and sustainable behaviors. Compared to Dumont et al. (2017), who found that both psychological climate and engagement serve as mediating factors, the present research offers stronger empirical evidence for engagement-driven factors over perceptual mechanisms. It suggests that while employees may cognitively recognize sustainable policies, it is their active involvement and emotional investment that ultimately drive behavioral outcomes.

In contrast, the hypothesized mediating role of green psychological climate was not supported. Although prior studies have suggested that employees' perceptions of organizational green policies may foster sustainability-oriented behaviors (Norton et al., 2017), the present findings indicated that perceptions alone may be insufficient to drive behavioral change. Instead, direct structural and managerial support, such as access to resources, green training, and leadership commitment, appears to be more effective in translating sustainability intentions into action (Dumont et al., 2017). One possible explanation may be the specific institutional context of Chinese HEIs, where formal sustainability policies may exist, but are not always strongly enforced or effectively embedded into HR systems. As a result, these policies are not sufficiently integrated into performance assessments, incentives, or daily routines, which leads employees to perceive a green climate more symbolically than behaviorally, thus limiting its practical impact. This underlines the significance of aligning sustainable strategies with tangible HR practices instead of depending solely on institutional climate cues. This suggests that the influence of GPC may depend on additional contextual factors, such as individual values, leadership styles, or organizational culture, which were not examined in this study.

Conclusion

This research offers a significant contribution to the prevailing GHRM literature, particularly in the context of HEIs. Although studies on GHRM have expanded in recent years, researchers continue to call

for further investigation in the academic sector. To address this gap, the present study developed and empirically tested a conceptual framework that explains the relationship between GHRM and its associated outcomes. By simultaneously examining an engagement-based mediator (GWE) and a perception-based mediator (GPC), this research provides a more nuanced understanding of the mechanisms through which GHRM influences employee behavior, thereby extending earlier theoretical frameworks. Unlike previous studies that focused on individual mediators such as green knowledge, green passion, green empowerment, green investment, and green design, this study integrated GWE and GPC as dual mediators in assessing employees' green behaviors.

Furthermore, while prior research has often examined mandatory job-related green behaviors or voluntary pro-environmental actions separately, this study simultaneously considered both employees' participatory engagement and environmental citizenship behaviors as outcomes of GHRM practices. These findings offer important managerial implications for Chinese HEIs. Environmental sustainability should be incorporated into strategic planning by recognizing employees as key contributors to green practices. Integrating sustainability into institutional operations can enhance employee involvement in addressing environmental issues and contribute to institutional and societal sustainability outcomes.

Recommendations

Based on these findings, several recommendations are made to improve the effectiveness of GHRM in fostering sustainable behaviors within academic and managerial contexts. Firstly, HEIs should integrate GHRM strategies into their core human resource policies to promote green behaviors among staff members. For example, universities in China could establish dedicated sustainability committees to oversee environmental initiatives and prioritize recruiting individuals whose environmental values align with institutional sustainability goals. HEIs should also provide regular training programs to enhance employees' knowledge and skills related to green practices, enabling active participation in sustainability efforts beyond their assigned responsibilities. Furthermore, incorporating green performance indicators into employee evaluations and offering monetary and non-monetary incentives, such as additional leave or professional development opportunities, would encourage workplace green behaviors, including energy conservation and resource reuse.

Secondly, given the crucial mediating role of GWE between GHRM and employees' green behaviors, Chinese HEIs should cultivate a culture that actively supports sustainability engagement by creating collaborative spaces for green innovation, recognizing sustainability-driven initiatives, and encouraging participatory decision-making in environmental policy development. Partnerships with public agencies, industries, and international organizations would further facilitate knowledge sharing and the adoption of effective sustainability practices. Additionally, hosting symposiums, forming research collaborations, and engaging in community-based environmental initiatives can strengthen sustainable behaviors. Simple behavioral nudges, such as resource-saving reminders, waste-segregation facilities, and digital platforms to reduce printing, can further enhance GWE while minimizing the environmental impact of HEIs.

Thirdly, it is essential for universities to implement continuous monitoring mechanisms to evaluate the progress of their GHRM initiatives. Conducting periodic environmental appraisals, soliciting employee feedback on sustainability procedures, and evaluating against internationally recognized practices can help Chinese HEIs to enhance their strategies and achieve long-term environmental sustainability objectives.

Lastly, while nurturing a green psychological atmosphere can be valuable in underpinning sustainability awareness, Chinese HEIs need to reinforce their GHRM with tangible institutional interventions, such as implementing environmentally friendly infrastructure, including energy-efficient working spaces and green procurement procedures, to equip employees with the essential instruments to engage in green behaviors. Thus, Chinese HEIs can align GHRM initiatives with structural interventions

to ensure that employees are not only psychologically persuaded, but also practically supported to partake in workplace green activities.

Limitations and Future Research

While this study provides valuable insights, several limitations should be noted. First, the findings are based on self-reported data from employees, which may introduce response biases and affect the accuracy of the results. Although Harman's single-factor test was applied to examine common method bias (CMB), this method alone does not fully eliminate this risk, as it may have limited diagnostic power. Therefore, some degree of bias may still exist and should be acknowledged when interpreting the findings. Second, the data were collected from a limited number of HEIs within a single Chinese city, which restricts the generalizability of the findings to regions with different organizational, economic, or cultural contexts. Third, as a cross-sectional study, this research examined relationships among variables at a single point in time, limiting the ability to draw causal inferences regarding the relationships between GPC, GWE, and employees' green behaviors, while potentially overlooking dynamic changes over time. Fourth, this study only incorporated two mediating variables in examining the relationship between GHRM and employees' green behaviors, potentially overlooking the influence of other relevant factors. Finally, this study was confined to HEIs in China, limiting the applicability of the findings to other industries and cultural settings.

To address these limitations, future research is recommended. To reduce potential self-reporting bias, future studies could incorporate multiple data sources, such as group interviews, observational studies, or supervisor evaluations of employee green behavior. More rigorous approaches to detecting and controlling CMB should also be adopted to enhance the validity of findings. To improve external validity, future research may expand sampling to include institutions from diverse geographic regions and demographic groups within China. Cross-cultural comparative studies could further enhance understanding of how national and organizational cultures influence the effectiveness of GHRM initiatives. In addition, longitudinal studies could be employed to examine changes in employees' green behavior over time and provide stronger evidence of causality. Future research may also investigate additional antecedent factors, including employees' green values, environmental knowledge, and leadership styles. Finally, extending research to other industries, such as manufacturing, hospitality, and information technology, could provide a more comprehensive understanding of GHRM practices and sustainability strategies across different organizational contexts.

Author Contributions

Fei Lu: Conceptualization, methodology, investigation, data curation, formal analysis, visualization, writing—original draft, writing—review & editing, project administration.

References

- Ababneh, O. M. A. (2021). How do green HRM practices affect employees' green behaviors? The role of employee engagement and personality attributes. *Journal of Environmental Planning and Management*, 64(7), 1204–1226. <https://doi.org/10.1080/09640568.2020.1814708>
- Aboramadan, M. (2022). The effect of green HRM on employee green behaviors in higher education: The mediating mechanism of green work engagement. *International Journal of Organizational Analysis*, 30(1), 7–23. <https://doi.org/10.1108/IJOA-05-2020-2190>
- Abualigah, A., Koburtay, T., Bourini, I., Badar, K., & Gerged, A. M. (2023). Towards sustainable development in the hospitality sector: Does green human resource management stimulate green creativity? A moderated mediation model. *Business Strategy and the Environment*, 32(6), 3217–3232. <https://doi.org/10.1002/bse.3296>
- Adu Sarfo, P., Zhang, J., Nyantakyi, G., Lassey, F. A., Bruce, E., & Amankwah, O. (2024). Influence of green human resource management on firm's environmental performance: Green employee empowerment as a mediating factor. *Plos One*, 19(4), e0293957. <https://doi.org/10.1371/journal.pone.0293957>

- Albrecht, S. L., Donnelly, T., Frenkiel, M., Rajic, S. K., Kavadas, V., & Leiter, M. P. (2023). Pro-environmental employee engagement: The influence of pro-environmental psychological capital, pro-environmental job resources, and perceived corporate environmental responsibility. *Frontiers in Sustainability*, 4, 1117892. <https://doi.org/10.3389/frsus.2023.1117892>
- Amah, O. E. (2020). Innovative work behaviors: Role of employee engagement and organizational citizenship behaviors. *Indian Journal of Industrial Relations*, 56(2), 356–373. <https://www.jstor.org/stable/27199331>
- Ba, Y., & Cao, L. (2023). Assessing the impact of green human resource management practices on environmental performance in China: Role of higher education. *Environmental Science and Pollution Research*, 30(41), 94386–94400. <https://doi.org/10.1007/s11356-023-28523-8>
- Bissing-Olson, M. J., Iyer, A., Fielding, K. S., & Zacher, H. (2013). Relationships between daily affect and pro-environmental behavior at work: The moderating role of pro-environmental attitude. *Journal of Organizational Behavior*, 34(2), 156–175. <https://doi.org/10.1002/job.1788>
- Bui, H. T. M., Bui, T., & Pham, B. T. (2024). The role of higher education in achieving sustainable development goals: An evaluation of motivation and capacity of Vietnamese institutions. *The International Journal of Management Education*, 22(3), 101088. <https://doi.org/10.1016/j.ijme.2024.101088>
- CEIC. (2023). *Air quality: PM2.5 concentration: Monthly average: Shenyang*. <https://www.ceicdata.com/en/china/air-quality-pm25-concentration-city/air-quality-pm25-concentration-monthly-average-shenyang>
- Chatelain, G., Hille, S. L., Sander, D., Patel, M., Hahnel, U. J. J., & Brosch, T. (2018). Feel good, stay green: Positive affect promotes pro-environmental behaviors and mitigates compensatory “mental bookkeeping” effects. *Journal of Environmental Psychology*, 56, 3–11. <https://doi.org/10.1016/j.jenvp.2018.02.002>
- Chen, S., Jiang, W., Li, X., & Gao, H. (2021). Effect of employees’ perceived green HRM on their workplace green behaviors in oil and mining industries: Based on cognitive-affective system theory. *International Journal of Environmental Research and Public Health*, 18(8), 4056. <https://doi.org/10.3390/ijerph18084056>
- Chen, T., & Wu, Z. (2022). How to facilitate employees’ green behavior? The joint role of green human resource management practice and green transformational leadership. *Frontiers in Psychology*, 13, 906869. <https://doi.org/10.3389/fpsyg.2022.906869>
- Demerouti, E., Bakker, A. B., De Jonge, J., Janssen, P. P., & Schaufeli, W. B. (2001). Burnout and engagement at work as a function of demands and control. *Scandinavian Journal of Work, Environment & Health*, 27(4), 279–286. <https://doi.org/10.5271/sjweh.615>
- Dumont, J., Shen, J., & Deng, X. (2017). Effects of green HRM practices on employee workplace green behavior: The role of psychological green climate and employee green values. *Human Resource Management*, 56(4), 613–627. <https://doi.org/10.1002/hrm.21792>
- Ercantan, O., & Eyupoglu, S. (2022). How do green human resource management practices encourage employees to engage in green behavior? Perceptions of university students as prospective employees. *Sustainability*, 14(3), 1718. <https://doi.org/10.3390/su14031718>
- Fawehinmi, O., Yusliza, M. Y., Wan Kasim, W. Z., Mohamad, Z., & Sofian Abdul Halim, M. A. (2020). Exploring the interplay of green human resource management, employee green behavior, and personal moral norms. *Sage Open*, 10(4), 2158244020982292. <https://doi.org/10.1177/2158244020982292>
- Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist*, 56(3), 218–226. <https://doi.org/10.1037/0003-066X.56.3.218>
- Gomes, J. F., Sabino, A., & Antunes, V. (2023). The effect of green human resources management practices on employees’ affective commitment and work engagement: The moderating role of employees’ biospheric value. *Sustainability*, 15(3), 2190. <https://doi.org/10.3390/su15032190>
- Haque, M. A., Islam, M. A., & Soh, S. (2024). Green HRM practices and green work engagement: The roles of green knowledge sharing and green group cohesion. *Global Business and Organizational Excellence*, 44(1), 16–36. <https://doi.org/10.1002/joe.22266>
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135. <https://doi.org/10.1007/s11747-014-0403-8>
- Islam, M. A., Hossain, M. S., Hoque, M. E., Khan, T., & Hassan, M. M. (2023). The moderating role of gender and employee championing behaviour in the relationship between green human resource management practices

- and sustainable organisational performance: Evidence from Bangladesh. In O. D. Adekoya, C. Mordi, & H. A. Ajombadi (Eds.) *Global perspectives on green HRM: Highlighting practices across the world*. Palgrave Macmillan. https://doi.org/10.1007/978-3-031-35795-4_6
- Islam, T., Khan, M. M., Ahmed, I., & Mahmood, K. (2021). Promoting in-role and extra-role green behavior through ethical leadership: Mediating role of green HRM and moderating role of individual green values. *International Journal of Manpower*, 42(6), 1102–1123. <https://doi.org/10.1108/IJM-01-2020-0036>
- Jiang, Y., Jackson, S. E., Shim, H., Budhwar, P., Renwick, D. W. S., Jabbour, C. J. C., de Sousa Jabbour, A. B. L., Tang, G., Müller-Camen, M., Wagner, M. & Kim, A. (2022). Culture as context: A five-country study of discretionary green workplace behavior. *Organization & Environment*, 35(4), 499–522. <https://doi.org/10.1177/10860266221104039>
- Khan, M. A. S., Jianguo, D., Ali, M., Saleem, S., & Usman, M. (2019). Interrelations between ethical leadership, green psychological climate, and organizational environmental citizenship behavior: A moderated mediation model. *Frontiers in Psychology*, 10, 1977. <https://doi.org/10.3389/fpsyg.2019.01977>
- Kline, R. B. (2012). Assumptions in structural equation modeling. In R. H. Hoyle (Ed.), *Handbook of structural equation modeling* (pp. 111–125). The Guilford Press.
- Lashari, I. A., Li, Q., Maitlo, Q., Bughio, F. A., Jhatial, A. A., & Rashidi Syed, O. (2022). Environmental sustainability through green HRM: Measuring the perception of university managers. *Frontiers in Psychology*, 13, 1007710. <https://doi.org/10.3389/fpsyg.2022.1007710>
- Lu, F. (2025). Investigating the mediating effect of green work engagement on the relationship between green human resource management and employee green work behavior: A study of Chinese higher education industry. *Creative Business and Sustainability Journal*, 47(2), 1–20. <https://so01.tci-thaijo.org/index.php/CBSReview/article/view/281680>
- Marini, M., Handoyo, S., & Sukadiono, S. (2023). Green work engagement: A literature review. *RSF Conference Series: Business, Management and Social Sciences*, 3(3), 179–185. <https://doi.org/10.31098/bmss.v3i3.662>
- Nabi, T., Joshi, A., Malik, S. H., Siddiqui, M. A., & Yetgin, M. A. (2023). Nexus between green human resource management and environmental practices: An empirical study using structural equation modelling. [Preprint (Version 1)] *Research Square*, 1–27. <https://doi.org/10.21203/rs.3.rs-3394470/v1>
- Naz, S., Jamshed, S., Nisar, Q. A., & Nasir, N. (2023). Green HRM, psychological green climate and pro-environmental behaviors: An efficacious drive towards environmental performance in China. *Current Psychology*, 42(2), 1346–1361. <https://doi.org/10.1007/s12144-021-01412-4>
- Norton, T. A., Zacher, H., & Ashkanasy, N. M. (2014). Organisational sustainability policies and employee green behaviour: The mediating role of work climate perceptions. *Journal of Environmental Psychology*, 38, 49–54. <https://doi.org/10.1016/j.jenvp.2013.12.008>
- Norton, T. A., Zacher, H., Parker, S. L., & Ashkanasy, N. M. (2017). Bridging the gap between green behavioral intentions and employee green behavior: The role of green psychological climate. *Journal of Organizational Behavior*, 38(7), 996–1015. <https://doi.org/10.1002/job.2178>
- Ojo, A. O., Tan, C. N. L., & Alias, M. (2022). Linking green HRM practices to environmental performance through pro-environment behaviour in the information technology sector. *Social Responsibility Journal*, 18(1), 1–18. <https://doi.org/10.1108/SRJ-12-2019-0403>
- Oliveira, M. C., & Proença, J. (2025). Sustainable campus operations in higher education institutions: A systematic literature review. *Sustainability*, 17(2), 607. <https://doi.org/10.3390/su17020607>
- Petter, S., Straub, D., & Rai, A. (2007). Specifying formative constructs in information systems research. *MIS Quarterly*, 31(4), 623–656. <https://doi.org/10.2307/25148814>
- Purnomo, A. K., Asri, Y. N., & Marditama, T. (2024). Implementation of green human resource management towards green employee behavior mediated by top management commitment in higher education. *International Journal of Economics Development Research*, 5(3), 1474–1485. https://www.researchgate.net/publication/387933512_Implementation_of_Green_Human_Resource_Management_Towards_Green_Employee_Behavior_Mediated_by_Top_Management_Commitment_in_Higher_Education
- Renwick, D. W., Redman, T., & Maguire, S. (2013). Green human resource management: A review and research agenda. *International Journal of Management Reviews*, 15(1), 1–14. <https://doi.org/10.1111/j.1468-2370.2011.00328.x>

- Saeed, B. B., Afsar, B., Hafeez, S., Khan, I., Tahir, M., & Afridi, M. A. (2019). Promoting employee's proenvironmental behavior through green human resource management practices. *Corporate Social Responsibility and Environmental Management*, 26(2), 424–438. <https://doi.org/10.1002/csr.1694>
- Schaufeli, W. B., Bakker, A. B. & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement*, 66(4), 701–716. <https://doi.org/10.1177/0013164405282471>
- Shenyang Municipal Education Bureau (SMEB). (2025). *Shenyang municipal education development statistical bulletin of 2024*. https://jyj.shenyang.gov.cn/zwgkzdgz/fdzdgknr/tjxx/202509/t20250917_4908109.html
- Shenyang Municipal Government Office (SMGO). (2025). *Notice of the Shenyang Municipal People's Government on Issuing the Shenyang Municipal Territorial Spatial Master Plan (2021–2035)* (Shenzhengfa [2025] No. 4). https://www.shenyang.gov.cn/zt/jjlwlb/zcyjd/qbsxtpgjmabcjnnmzsyfs/202510/t20251023_4924214.html
- Susanto, A. (2023). The role of green human resources management (GHRM) on job satisfaction and green work engagement (GWE): An empirical study on manufacturing industries. *Journal of Economics, Finance and Management Studies*, 6(03), 1123–1131. <https://doi.org/10.47191/jefms/v6-i3-11>
- Tirno, R. R., Islam, N., & Happy, K. (2023). Green HRM and ecofriendly behavior of employees: Relevance of proecological climate and environmental knowledge. *Heliyon*, 9(4), e14632. <https://doi.org/10.1016/j.heliyon.2023.e14632>
- Veerasamy, U., Joseph, M. S., & Parayitam, S. (2024). Green human resource management and employee green behaviour: Participation and involvement, and training and development as moderators. *South Asian Journal of Human Resources Management*, 11(2), 277–309. <https://doi.org/10.1177/23220937221144361>
- Wang, R., & Hu, Y. (2025). Green behaviors among employees in Chinese e-commerce companies: Impact of environmental, social, and governance (ESG) performance. *Sustainability*, 17(3), 940. <https://doi.org/10.3390/su17030940>
- Xuemin, M., Kelana, B. W. B. Y., Jie, C., & Mahmood, A. (2024). Linking GHRM to environmental performance through green behaviour in private Chinese universities. *Human Resource Management Academic Research Society (HRMARS)*, 14(12), 4419–4439. <https://doi.org/10.6007/IJARBS/v14-i12/24412>
- Yadate, D. A. (2025). The effect of green human resource management on employee green behavior. *Corporate Social Responsibility and Environmental Management*, 32(1), 404–418. <https://doi.org/10.1002/csr.2956>
- Yamane, T. (1973). *Statistics: An introductory analysis* (3rd ed.). Harper & Row.
- Yang, C., Chen, C.-S., & Wei, L.-W. (2024). The influence of green human resource management on environmental performance: Exploring the differential effects of green work engagement and moral reflection. *Environment and Social Psychology*, 9(10), 1–22. <https://doi.org/10.59429/esp.v9i10.3040>
- Yong, J. Y., Yusliza, M. Y., & Fawehinmi, O. O. (2020). Green human resource management: A systematic literature review from 2007 to 2019. *Benchmarking: An International Journal*, 27(7), 2005–2027. <https://doi.org/10.1108/BIJ-12-2018-0438>
- Zhang, S., Chen, M., & Tang, G. (2024). How green human resource management can promote green competitive advantage: The role of green innovation. *Business Strategy and the Environment*, 33(5), 4613–4625. <https://doi.org/10.1002/bse.3715>
- Zhou, S., Zhang, D., Lyu, C., & Zhang, H. (2018). Does seeing “mind acts upon mind” affect green psychological climate and green product development performance? The role of matching between green transformational leadership and individual green values. *Sustainability*, 10(9), 3206. <https://doi.org/10.3390/su10093206>