



Humanities and Educational
Sciences Journal

ISSN: 2617-5908 (print)



مجلة العلوم التربوية
والدراسات الانسانية

ISSN: 2709-0302 (online)

Green Employee Empowerment as a Mediator in the relationship between GHRM and Green Creativity & Innovation: Evidence from Public Universities, Yemen*

Mazen Mohammed Farea

mazen.farea@mediu.edu.my

Riyadh Mohammed Sallam Shamsan

Faculty of Business Administration

Al-Madinah International University

riyazco@yahoo.com

*) Received: 22/11/2025

Accepted: 12/1/2026

*) Journal Website:

<http://hesj.org/ojs/index.php/hesj/index>

تمكين الموظفين الأخضر كمتغير وسيط في العلاقة بين إدارة الموارد البشرية الخضراء والإبداع والابتكار الأخضر: دليل من الجامعات الحكومية في اليمن

مازن محمد فارح

رياض محمد سلام شمسان

الملخص

تتناول هذه الدراسة دور تمكين الموظفين الأخضر (GEE) كمتغير وسيط في العلاقة بين الإبداع والابتكار الأخضر لدى الموظفين (GECI) وممارسات إدارة الموارد البشرية الخضراء (GHRM) في الجامعات الحكومية اليمنية. كما تبحث في كيفية تأثير تمكين الموظفين من خلال ممارسات إدارة الموارد البشرية الخضراء على تعزيز الإبداع والابتكار الأخضر.

تم إجراء تحليل وصفي بالاعتماد على مصادر البيانات الأولية والثانوية، حيث تم توزيع استبيانات مُنظمة على عينة مكونة من (363) موظفًا في الجامعات الحكومية اليمنية. وشملت ممارسات إدارة الموارد البشرية الخضراء التي تم دراستها: التوظيف الأخضر، والاختيار، وتخطيط الموارد البشرية، وإدارة المواهب.

تم تحليل العلاقات بين المتغيرات باستخدام نمذجة المعادلات الهيكلية (SEM) عبر برنامج AMOS. وأظهرت النتائج أن ممارسات إدارة الموارد البشرية الخضراء تؤثر بشكل إيجابي ومعنوي على كل من الإبداع والابتكار الأخضر وتمكين الموظفين الأخضر. كما تبين أن العلاقة بين إدارة الموارد البشرية الخضراء والإبداع والابتكار الأخضر تتوسطها جزئيًا عملية تمكين الموظفين الأخضر، مما يشير إلى أن تعزيز تمكين الموظفين يساهم في رفع مستوى الإبداع والابتكار الأخضر.

في سياق الدول النامية، تقدم هذه الدراسة رؤى مهمة حول كيفية إسهام ممارسات إدارة الموارد البشرية الخضراء في تمكين الموظفين وتعزيز الابتكار الأخضر. كما تؤكد على أهمية التمكين في دعم الممارسات التنظيمية المستدامة داخل المؤسسات التعليمية.

الكلمات المفتاحية: إدارة الموارد البشرية الخضراء (GHRM)، تمكين الموظفين الأخضر (GEE)، الإبداع والابتكار الأخضر لدى الموظفين (GECI)، التوظيف والاختيار الأخضر، تخطيط الموارد البشرية الأخضر، إدارة المواهب الخضراء



Green Employee Empowerment as a Mediator in the relationship between GHRM and Green Creativity & Innovation: Evidence from Public Universities, Yemen

Mazen Mohammed Farea

Riyadh Mohammed Sallam Shamsan

Faculty of Business Administration

Al-Madinah International University

Abstract

This study examines how green employee empowerment (GEE) acts as a mediator in the interaction between green employee creativity and innovation (GECI) and green human resource management (GHRM) practices in Yemeni public universities. It examines how employee empowerment through green HRM practices influences green creativity and innovation. A descriptive analysis was conducted using primary and secondary sources of information. Structured questionnaires were distributed to three hundred and sixty-three employees in Yemeni public universities. The GHRM practices investigated included Green Recruitment, Selection, HR Planning, and Talent Management. Associations between variables were examined using AMOS structural equation modeling (SEM). The findings demonstrate that GHRM significantly improves both GECI and GEE. The association between GHRM and GECI was shown to be somewhat mediated by GEE, indicating that green creativity and innovation are enhanced by employee empowerment. In the context of developing countries, this study provides valuable information on how global human resource management (GHRM) practices empower employees to promote green innovation. It underscores the importance of empowerment in promoting sustainable organizational practices in educational settings.

Keywords: Green Human Resource Management (GHRM), Green Employee Empowerment (GEE), Green Employee Creativity and Innovation (GECI), Green Recruitment & Selection, Green HR Planning, Green Talent Management

Introduction:

GHRM is becoming more popular as a tactic for integrating environmental practices into HR duties including hiring, training, and performance reviews (Shahriari *et al.*, 2019; Molina-Azorin *et al.*, 2021). GHRM is linked to increasing creativity and innovation and empowering green workers by encouraging sustainable behaviors (Aftab *et al.*, 2022). However, while GHRM's effect on sustainability and employee actions has been explored, less attention has been paid to its role in promoting GCI (Munawar *et al.*, 2022; Ahmad *et al.*, 2022). Calls for further research include perceived green organizational support (POS) and its association with creativity across sectors (Hameed *et al.*, 2021). By investigating the mediating function of green employee empowerment between green human resource management and green creativity and innovation in Yemeni public institutions, this study addresses an identified research gap and provides empirical insights for sustainable academic environments. Globally, organizations are increasingly adopting GHRM to support employee engagement and environmental goals, in line with the UNSD Goals to reduce ecological impacts (Ahmed *et al.*, 2022; Subaih *et al.*, 2020). Green creativity and innovation drive sustainable solutions (Ahmed *et al.*, 2022; Singh *et al.*, 2020), and promoting green conduct through GHRM practices can enhance competitiveness (Saeed *et al.*, 2019). GHRM integrates environmental behaviors into HR processes to promote sustainability. It involves green hiring, sustainability training, eco-friendly performance assessments, and fostering environmental responsibility. Adopting Green HRM boosts environmental performance, employee engagement, and long-term business success while supporting conservation efforts (Wang, Z. *et al.*, 2024). The importance of this research comes in developing a framework that focuses on green recruitment, selection, and human resource planning to encourage creativity in environmentally conscious organizations.

Statement of the Problem:

Environmental degradation and climate change have intensified the global demand for sustainable development, encouraging organizations, including higher education institutions, to adopt green strategies. Green Human Resource Management (GHRM) is recognized as a key mechanism for aligning employee behavior with environmental goals and promoting

innovation (Ahmed et al., 2022); however, empirical evidence on its impact on Green Employee Creativity and Innovation (GECI) remains scarce in developing countries such as Yemen, particularly in public universities. Additionally, the mediating role of Green Employee Empowerment (GEE) has received limited scholarly attention in fragile contexts (Meng et al., 2023). This gap is critical given the severe challenges facing Yemen's higher education sector, including conflict-related institutional damage, declining human development, and shortages of qualified academic staff (AlMunifi & Aleryani, 2021). Accordingly, this study examines how GHRM fosters GECI through GEE in Yemeni public universities.

Significance of the study:

This study is significant as higher education institutions are increasingly expected to integrate environmental management and green practices to address contemporary environmental challenges and foster a "Go Green" organizational culture (Aboramadan, 2022). By examining the mediating role of green employee empowerment in the relationship between Green Human Resource Management (GHRM) practices and green employee creativity and innovation, the study provides valuable insights for designing targeted interventions that enhance employee involvement in sustainable initiatives (Mukherjee et al., 2020). In the context of Yemeni public universities, where green empowerment remains limited, the findings offer practical guidance on how GHRM practices can promote environmental stewardship, creativity, and innovation, thereby supporting institutional sustainability and national development (Zahrani, 2022).

Objectives of the study:

By referring to the problem statement, the research objectives are as follows:

1. To examine the effect of Green Human Resource Management practices on Green Employee Creativity and Innovation in Yemeni public universities.
2. To investigate the effect of Green Human Resource Management practices on Green Employee Empowerment.
3. To analyze the effect of Green Employee Empowerment on Green Employee Creativity and Innovation.
4. To determine whether Green Employee Empowerment mediates the relationship between Green Human Resource Management and Green Employee Creativity and Innovation.

Questions of the study:

This study aims to answer the following research questions:

1. What is the effect of Green Human Resource Management practices on Green Employee Creativity and Innovation in Yemeni public universities?
2. How does Green Human Resource Management influence Green Employee Empowerment in Yemeni public universities?
3. What is the effect of Green Employee Empowerment on Green Employee Creativity and Innovation?
4. Does Green Employee Empowerment mediate the relationship between Green Human Resource Management and Green Employee Creativity and Innovation?

Literature Review:

Existing literature suggests that Green Employee Empowerment (GEE) plays an important role in encouraging eco-innovation and pro-environmental behaviors by enhancing employees' skills, autonomy, and intrinsic motivation (Hameed et al., 2021). While several studies acknowledge that empowerment-oriented practices such as green talent management, green human resource planning, and green recruitment support sustainability initiatives (Bhatti et al., 2022; Noor et al., 2021), empirical findings remain fragmented, and the specific role of GEE as a mediating mechanism is still insufficiently examined (Irani & Kilic, 2022). This limitation is particularly evident in the higher education sector, where sustainability outcomes rely heavily on employees' voluntary engagement rather than formal control systems.

Scholars further emphasize leadership support as a critical contextual factor shaping green creativity and innovation with leadership helping to embed environmental values into organizational culture (Brown & Green, 2023). However, studies differ in their conclusions regarding the direct effectiveness of GHRM practices. While some research reports that GHRM positively influences green creativity by recognizing and rewarding green contributions (Jiang et al., 2020), others argue that such outcomes depend on complementary factors such as empowerment, ethical leadership, and technological support (Ahmed et al., 2022; Yin et al., 2022). These inconsistencies indicate that GHRM alone may not be sufficient to stimulate

green creativity and innovation without mechanisms that enable employees to translate policies into action.

Several scholars have therefore called for deeper investigation into the relationship between GHRM and green creativity and innovation (Hameed et al., 2021; Li et al., 2023), particularly by incorporating individual and environmental contingencies (Singh et al., 2020; Darveshmutivali & Altinay, 2022). Although evidence from academic settings suggests that GHRM can enhance green engagement and operational efficiency (Aburamdan, 2020; Jamil, 2022), most studies remain context-neutral and overlook structural and cultural constraints. This is a significant omission for public universities in Yemen, where institutional fragility, centralized decision-making, limited technological infrastructure, and low levels of employee empowerment may weaken the effectiveness of green HR initiatives. Moreover, research linking green talent management to outcomes such as employee retention highlights the long-term strategic value of GHRM (Ogbebu et al., 2022), yet these findings are largely drawn from stable organizational environments. As a result, little is known about how GHRM practices operate through empowerment to foster green creativity and innovation in crisis-affected, resource-constrained higher education systems. Addressing this gap, the present study examines the mediating role of Green Employee Empowerment in the relationship between GHRM practices and Green Employee Creativity and Innovation within Yemeni public universities, thereby extending GHRM theory to an under-researched and institutionally constrained context.

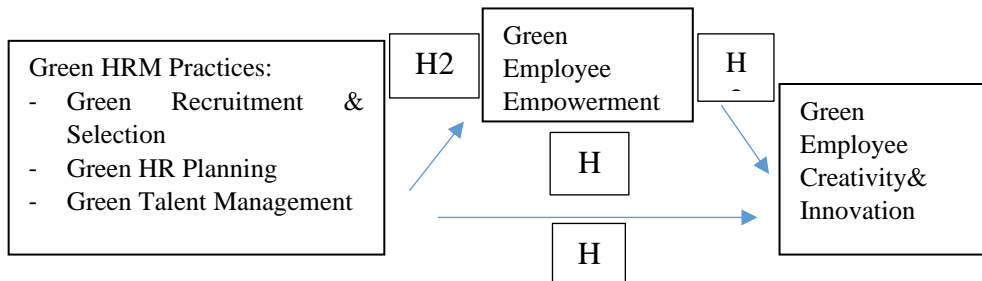


Figure: (1) Research Framework

(Reference: Author own framework collected from various frameworks)

The following table displays the codes and descriptions of the research hypotheses.

Table (1)

Research Hypotheses Codes and Descriptions

Code	Description	Path
Direct Effect of Constructs		
H1	GHRM significantly affects EGCI.	GHRM → GECI
H2	GHRM significantly affects GEE.	GHRM → GEE
H3	GEE significantly affects GECI.	GEE → GECI
Mediation Effects		
H4	GEE mediates the relationship between GHRM and GECI.	GHRM → GEE → GECI

Hypotheses Effects:

Green Human Resource Management (GHRM) and Green Employee Creativity & Innovation (GECI)

By incorporating sustainability initiatives into HR strategies, researchers such as Hameed et al. (2021), Bahmani S. et al. (2023), Abualigah et al. (2022), Shafiq et al. (2023), Katz (2022), and Zahrani (2022) highlight the beneficial effects of GHRM on green creativity and innovation. The idea that GHRM practices improve employee environmental awareness, motivation, and abilities, which eventually leads to green innovation, is further supported by studies by Huo, W. et al. (2020), Jiang et al. (2020), and Hussain and Wahab (2021). GHRM creates a supportive work environment that encourages green creativity and innovation by applying ideas such as the Resource-Based View theory, Self-Determination theory, Social Learning theory, and Social Identity theory. Aligning GHRM practices with these theories is key to driving sustainability initiatives within organizations and shaping a greener future (Zahrani, 2022).

Al-Swidi et al. (2024) demonstrate that the implementation of both Green Human Resource Management (GHRM) and Corporate Environmental Ethics (CEE) has a positive and synergistic effect on the environmental performance of manufacturing SMEs in Yemen. Their research, based on a survey of 262 firms, underscores the importance of integrating ethical

considerations with HR practices to enhance sustainability in less developed countries. In the Pakistani textile industry, Amjad et al. (2021) found that GHRM practices—particularly green performance appraisal and reward systems—significantly improve organizational sustainability. This relationship is partially mediated by both environmental and employee performance, highlighting the strategic role of tailored green HR initiatives in promoting sustainable outcomes in developing economies. Examining Yemeni pharmaceutical companies, Zaid et al. (2024) identified that certain human resource management practices, especially motivation and compensation, significantly drive green innovation. Al-Hakimi et al. (2024) posit that GHRM acts as a key mediator between green transformational leadership and environmental performance in Yemeni SMEs, with the strength of this relationship being enhanced by strong Corporate Environmental Ethics (CEE). Their study calls for future cross-cultural and longitudinal research to further elucidate the dynamics of green management in under-studied contexts.

Green Recruitment and Selection (GRS):

GRS involves identifying and hiring candidates with skills, knowledge, and commitment to sustainability. This ensures alignment with the organization's green goals, fostering environmental responsibility and long-term sustainability (Nson, 2024). Green recruitment minimizes environmental impact by utilizing digital applications and remote interviews (Mwita, 2019). Aligning HR policies with environmental goals underpins the concept of "GREEN HR" (Jyoti, 2019). Green recruitment practices can enhance SMEs' environmental performance and competitive advantage (Nawangari & Sutawijaya, 2019). Green HR strategies drive GCI within Institutions (Ogbeibu et al., 2020). Prioritizing environmentally conscious hiring practices leads to better environmental performance and competitiveness (Shaban, 2019). Green recruitment selects candidates inclined towards green innovation, fostering creativity across all levels (Jerónimo *et al.*, 2022). GRS practices are instrumental of shaping a sustainable workforce and fostering a culture of green innovation (Tian *et al.*, 2023).

Green HR Planning:

Green HR Planning involves assessing the quantity and types of personnel needed for environmental management activities like ISO 14001

and cleaner innovation, aligning HR strategies with environmental sustainability objectives (Ali *et al.*, 2020). It ensures organizations have the right skills to lead sustainability initiatives by estimating human resource needs and attracting, training, and retaining personnel aligned with environmental goals (Malik *et al.*, 2021). Green HR Planning encourages behaviors that support environmental sustainability, fostering green innovation and creativity through employee engagement (Shafiq *et al.*, 2023). By aligning HR strategies with environmental goals, Green HR Planning enhances green creativity, innovation, and environmental performance (Nawangarsi & Sutawidjaya, 2019). HR planning policies influence employee performance, including creativity and innovation, which are measured by productivity, problem-solving ideas, and efficiency (Hassan & Ibrahim, 2025). Green HR planning fosters an environment conducive to innovative thinking and sustainable practices, driving solutions that reduce environmental impacts (Ajenthiny, 2022).

Green Talent Management (GTM):

The term "green talent management" encompasses the management of green soft and hard talent. Soft green talent management emphasizes human aspects like Green efforts to achieve environmental sustainability are inspired by leadership, talent engagement in decision-making, and good communication (Umair *et al.*, 2023). In contrast, rigorous green talent management views talent as a vital resource that must be effectively managed through hierarchical structures and performance appraisal methods (Ogbeibu *et al.*, 2022). Green talent management involves identifying, attracting, developing, and retaining employees with skills to promote environmental sustainability, fostering innovation and competitive advantages (Muduli & Mishra, 2019). GTM fosters an environment encouraging green creativity and innovation by attracting and developing environmentally conscious talent, promoting collaboration, and recognizing green initiatives (Mahdy *et al.*, 2023). It supports the generation of innovative solutions addressing environmental challenges (Faisal & Naushad, 2020). Green Talent Management (GTM) integrates eco-friendly HR practices to draw in, nurture, and keep environmentally skilled employees, driving sustainability and innovation. It enhances green competencies and engagement, crucial for achieving long-term

environmental and social goals (Fasih et al., 2025). In supply chains, GTM leverages technology like AI to align talent strategies with sustainability, improving operational resilience (Al Nawaiseh et al., 2025). GTM and GCI are correlated elements driving sustainable business solutions and environmental stewardship within organizations (Ogbeibu *et al.*, 2022).

This study makes the following hypothesis in light of the literature review mentioned above:

H1: There is statistically significant relationship found between Green Human Resource Management (GHRM) and Green Employee Creativity and Innovation (GECI).

Green Human Resource Management (GHRM) significantly affects Green Employee Empowerment (GEE).

By granting employees autonomy and responsibility, fostering a sense of ownership, and enhancing self-efficacy, empowerment plays a crucial role in encouraging creativity within companies. This, in turn, fosters participation in creative processes and fosters a collaborative climate (Anwar, F., & Humayun, A., 2023). Green Employee Empowerment (GEE) emphasizes active employee engagement in eco-friendly projects, whereas Green Human Resource Management (GHRM) focuses on incorporating environmental issues into HR procedures for sustainability (Wijoyo, H., 2021). A key element of GHRM, GEE emphasizes giving staff members the power and tools to improve environmental sustainability, which fosters innovation, dedication, and organizational success (Labella-Fernández, A., & Martínez-del-Río, J., 2020). Employee accountability and environmentally conscious behavior are encouraged by the collaboration between GHRM and GEE (Saraswathi, D., & Savithri, J. J., 2021). Organizations may successfully accomplish environmental goals by enabling staff members to take part in sustainable projects and make environmentally friendly choices (Muafi & Kusumawati, R. A., 2021). Therefore, by encouraging proactive decision-making in line with sustainability goals, removing obstacles, and improving incentives and skills for environmental performance, GEE plays a crucial role in advancing green corporate objectives (Alam, M. *et al.* 2021).

This study makes the following hypothesis in light of the literature review mentioned above:

H2: There is statistically significant relationship found between Green Human Resource Management (GHRM) and Green Employee Empowerment (GEE).

Green Employee Empowerment (GEE) significantly affects Green Employee Creativity and Innovation (GECI).

Empowering employees is essential to encouraging innovation and creativity in companies. Empowered employees feel competent and valued, and have a voice in their work, which reduces stress and gives them greater control over their productivity. Studies by Zhang, B. (2019) and Ren, S. *et al.*, (2020) emphasizing the importance of Green Employee Empowerment (GEE) within Green Human Resource Management (GHRM) strategies. Green employee empowerment stimulates green creativity and innovation, and also encourages employee participation in environmentally friendly practices. Ji, G. and Zhao, X. (2021) and Chen, S. and Chang, C. (2020) both emphasize how employee empowerment supports sustainability and green innovation in businesses. Improved environmental performance and creative green practices result from green employee empowerment, which motivates staff to address environmental issues (Iftikar, T. *et al.*, 2022). As a result, GEE promotes an environmentally conscious culture by empowering staff members to adopt green initiatives, engage in eco-friendly activities, and suggest new ideas (Aina, N., *et al.*, 2019). According to the AMO hypothesis, green HRM practices foster green creativity and innovation in businesses by improving employee capacities, motivation, and autonomy (Gooda, J. *et al.*, 2023). In line with corporate sustainability objectives, empowering staff members via green transformational leadership fosters green innovation and creativity (Mansoor, A., *et al.*, 2021). A supportive atmosphere that fosters creativity and innovation is created by empowering employees, especially under servant and transformational leadership styles (Ashraf, H. A. *et al.*, 2023).

This study proposes the following hypothesis in light of the above-mentioned literature review:

H3: There is statistically significant relationship found between Green Employee Empowerment (GEE) and Green Employee Creativity and Innovation (GECI).

Mediating of Green Employee Empowerment (GEE) between Green Human Resource Management (GHRM) and Green Employee Creativity and Innovation (GECI)

According to Emmanuel, A. A. (2023), employee empowerment fosters the ability to create objectives and make decisions independently within their areas of competence by enabling people to use their judgment in unexpected situations without rigid constraints. According to Andrianto, S. et al. (2023), this empowerment combined with motivation fosters an atmosphere where workers are inspired to take charge, which boosts innovation and creativity inside businesses. Furthermore, research by Al-Sabi, S. M., et al. (2023) highlights that giving workers resources, authority, and responsibilities improves their capacity to act creatively, which stimulates innovation in businesses. According to Alam, M. et al. (2021), in the context of green HRM practices, AMO-theorized practices can impact employee motivation and ability to accomplish green goals, eventually promoting green employee empowerment. Hutomo, A. et al. (2020) provide more support for this idea, arguing that AMO theory is essential for incorporating people into management procedures, especially when it comes to Green HRM. As Singh, S. K. et al. (2020) note, green HRM practices may improve green corporate performance by encouraging continuous innovations and initiatives through employee empowerment strategies, hence the relationship between these two practices is essential. In order to comprehend technological adoption and innovation, Acikgoz, F., et al. (2023) suggest merging the Theory of Planned Behavior with Diffusion of Innovation theory, going beyond conventional ideas. This integrative method clarifies how behavioral intentions are influenced by attitudes, norms, and perceived control. It also explains how new ideas proliferate and affect the acceptance of innovations. The importance of empowerment in promoting innovation, creativity, and sustainability within organizations is highlighted by research conducted by a number of scholars, including Mora, L., et al. (2023), Mauledy, A. (2023), and Bhutto, T. A., et al. (2023). These studies ultimately result in improved organizational performance and an environmentally conscious culture. In conclusion, there are many aspects to the relationship between employee empowerment, innovation, and green HR management practices.

This study makes the following hypothesis in light of the literature review mentioned above:

H4: There is statistically significant relationship found from the mediating effect of Green Employee Empowerment (GEE) between Green Human Resource Management (GHRM) and Green Employee Creativity and Innovation (GECI)

Research methodology:

In order to investigate the mediating function of Green Employee Empowerment (GEE) between Green Human Resource Management (GHRM) and Green Employee Creativity & Innovation in Yemeni public universities, the study uses a descriptive research design and a questionnaire. The study uses a survey technique to collect employee perspectives, and a pilot test is carried out to verify the validity, consistency, and reliability of the questionnaire based on input from academic experts and workers. The study received a 93% rating on the three-point Likert scale and uses expert comments to improve the validity of the questionnaire (Jinnah, F., 2023). Strong reliability was shown by a pilot research with 30 participants (Cronbach's alpha values ranging from 0.8874 to 0.945). This study employed a probability sampling technique to ensure representativeness and generalizability of the findings. The sampling frame comprised 6,824 academic and administrative employees working in 19 public universities in Yemen, based on official university records. A proportionate random sampling approach was used, whereby participants were randomly selected from each university according to its share of the total population. A total of 363 questionnaires were distributed and fully returned, yielding a 100% usable response rate after follow-up and data screening. The sample size was determined using the Richard Geiger equation with a 95% confidence level and 5% margin of error, and it also satisfies Structural Equation Modeling (SEM) guidelines, which recommend a minimum of 5–10 cases per estimated parameter, thereby ensuring adequate statistical power and model stability for SEM analysis.

Results:

The study included eight phases to validate the hypotheses using AMOS 25 and SPSS 27, including SEM assumptions, data screening, CFA, and structural model testing. SEM was chosen for its combination of regression and factor analysis, with CFA ensuring construct validity through Goodness

of Fit (GOF) indices and Cronbach's alpha to assess reliability. Key model fit indices such as RMSEA and CFI were examined, and partitioning strategies were used for latent constructs.

Univariate outliers were excluded, with variable Z scores ranging from -1.966 to 3.354. Multivariate outliers were assessed via Mahalanobis distance, yielding a maximum D2/df ratio of 2.556, below the cutoff of 3.5 (Hair *et al.*, 1998), thus retaining all observations. Normality was confirmed, with skewness and kurtosis within acceptable ranges.

According to criteria from Nunnally & Bernstein (1994) and Bagozzi and Yi (1988), all constructs met reliability and validity requirements, with factor loadings ranging from 0.614 to 0.954, AVE values above 0.5, composite reliability above 0.7, and Cronbach's alpha values exceeding 0.7 for the GRS, GHRP, GSTM, GHTM, GEE, and GECEI.

Table (2)

Discriminant validity for Measurement Model

	GRS	GHRP	GSTM	GHTM	GEE	GECEI
GRS						
GHRP	0.485	0.807				
GSTM	0.333	0.688	0.816			
GHTM	0.09	0.298	0.402	0.864		
GEE	0.25	0.534	0.741	0.455	0.889	
GECEI	0.295	0.616	0.593	0.435	0.801	0.825

(Resource: author own work based on SPSS analysis)

The constructs' inter-correlations fell below the Kline (2005) suggested cutoff point of 0.85. Additionally, there was high discriminant validity across these variables since the correlations were smaller than the square root of the average variance recovered by the indicators (Kline 2005). After analyzing the measurement model's convergent validity, discriminant validity, and goodness of fit of the data, it was determined that the modified measurement scale used to evaluate the constructs and their related items was valid and dependable.

Direct Effects of Constructs:

Green employee empowerment (GEE) and green employee creativity and innovation (GECEI) were directly impacted by green human resource management (GHRM) (H1, H2, H3), and the impact of GEE on GECEI was

examined using the structural model. The relative significance of the variables was emphasized using standardized regression weights, which showed that GHRM had a greater impact on GEE. A excellent fit of the model was validated by the good fit indices (CFI = 0.968, TLI = 0.953, RMSEA = 0.071, $\chi^2/df = 2.843$). The model also looked at whether the association between GHRM and GECEI was mediated by GEE. In accordance with the 0.30 criterion (Quaddus and Hofmeyer 2007), GHRM accounted for 72% of the variation in GECEI, as shown by R² values of 0.74 for GEE and 0.717 for GECEI. The expected direct effects were verified by testing coefficient estimates. Table (3) shows the path coefficients and results of the proposed direct effects test.

Table (3)

Examining Results of Hypothesized Direct Effects of the Constructs

Path	Unstandardized Estimation		Standardized Estimation	critical ratio	P-value	Hypothesis Result
	Estimate	S.E.	Beta	Cr		
GHRM → GEE	1.150	0.074	0.860	15.570	0.000	H1(Supported)
GEE → GECEI	0.239	0.102	0.233	2.333	0.020	H2 (Supported)
GHRM → GECEI	0.872	0.147	0.638	5.926	0.000	H3(Supported)

(Resource: author own work based on SPSS analysis)

Mediation Effect of Green Employee Empowerment (GEE) :

The mediation analysis explored the role of GEE in mediating the effects of GHRM on GECEI. It examined both direct and indirect impact of GHRM on GECEI through GEE. Using the decision tree framework by Mathieu & Taylor (2006), the study assessed the significance of these relationships. The results showed that the relationship between GHRM and GECEI is fully mediated by GEE, indicating that GHRM enhances employee creativity and innovation primarily through empowerment, underscoring the importance of employee in transforming green HR initiatives into innovative and creative outcomes and sustainable practices. The findings highlight how empowerment enhances the effectiveness of GHRM, offering insights for fostering innovation and sustainability in organizations.

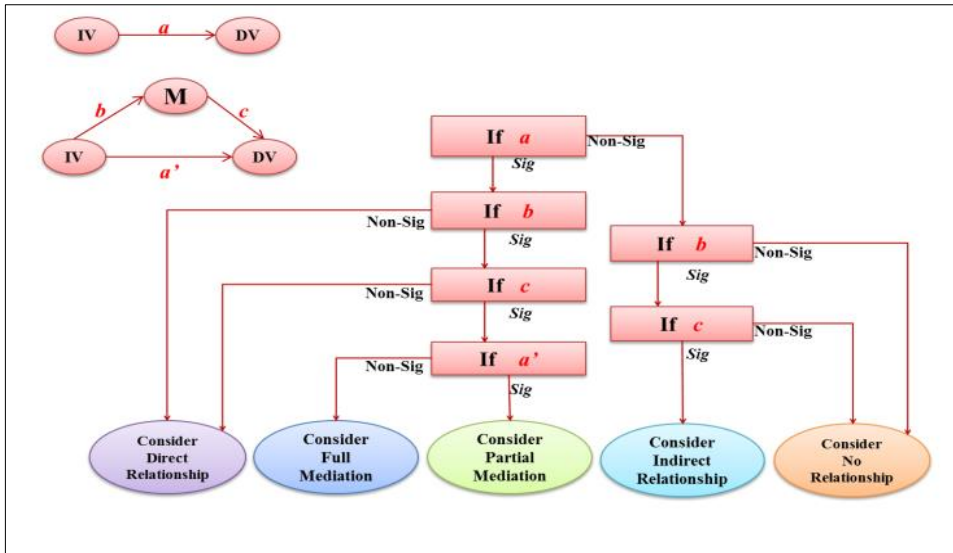


Figure (2) Evidence-based decision tree for various overlapping empowerment influences

(Source: Mathieu & Taylor, 2006)

The framework states that all three correlations between the variables (paths a, b, and c) must be statistically significant in order for mediation to be considered significant (Baron & Kenny, 1986; Mathieu & Taylor, 2006). It is impossible to achieve full mediation if any path is meaningless. Partial mediation takes place if the direct impact (route a') is still considerable, but full mediation happens when it is not. Depending on how important these routes are, the study reveals various consequences. Because SEM can represent both measurement and structural interactions, it is favored over regression for mediation analysis. Regression coefficients between GHRM, GEE, and GECI were examined in this study using bootstrapping to evaluate the mediating effects of GEE. Table (4) displays the analysis's findings.

Table: (4)

Results of Examining Mediation Effects of Metacognition

DV = Green Employee Creativity & Innovation M = Green Employee Empowerment	IV= Green HR Management
Total Effect of IV on DV without M	1.00226***(sig = 0.000)
Direct Effect of IV on DV with M	0.5064***(sig = 0.000)
Indirect effect of IV on DV through Effect of IV on M (path b)	0.516***(sig = 0.000)
Effect of M on DV (path c)	1.0478***(sig = 0.000)
Mediation Path	0.492***(sig= 0.000)
Mediation Effect	GHRM→GEE→GECI
Degree of Mediation	Yes
Hypothesis Result	Partially
	H4(Supported)

(Resource: author own work based on SPSS analysis)

Green employee empowerment (GEE) mediates the effects of green human resource management (GHRM) on green employee creativity and innovation (GECI), as shown in Table (4). Thus, Hypothesis H4 was verified.

Discussion, Implications, Recommendations:

Discussion of the results:

With a route estimate of 0.872, a standardized estimate of 0.638, and a critical ratio of 5.926 ($p = 0.000$), the research shows that Green Employee Creativity and Innovation (GECI) is highly influenced by Green Human Resource Management (GHRM). These results confirm what Hameed et al. (2021) and Munawar et al. (2022) have shown about the importance of GHRM practices in creating a favorable atmosphere for green creativity and innovation. According to Meng et al. (2023), the beneficial effect of GHRM on GEE is also noteworthy, with a critical ratio of 15.570 ($p = 0.000$), a normalized estimate of 0.860, and a path estimate of 1.150. Additionally, research by Saraswathi & Savithri (2021) and Abualigah et al. (2022) highlight the significance of empowerment in fostering green creativity,

demonstrating that GEE has a substantial influence on GECI (path estimate = 0.239, standardized estimate = 0.233, critical ratio = 2.333, $p = 0.020$). Furthermore, according to Alam et al. (2021) and Emmanuel (2023), GEE mediates the GHRM-GECI association, with an indirect effect estimate of 0.278, a standardized estimate of 0.288, and a critical ratio of 3.420 ($p = 0.001$). According to these findings, GHRM programs have to concentrate on giving staff members the freedom to be more creative and innovative in their sustainability projects.

Implications:

The study examines how Green Employee Empowerment (GEE) mediates the relationship between Green HR Management (GHRM) and Green Employee Creativity and Innovation (GECI). It highlights the theoretical importance of integrating GHRM and GEE to enhance employee capabilities and motivation for sustainable innovation. This research extends the theory of green creativity by identifying key factors driving environmentally conscious employee innovation. The findings suggest that empowering employees is crucial for fostering green creativity and innovation, offering insights for future research.

From a managerial perspective, the study emphasizes the need for GHRM practices to cultivate a culture of green creativity. Managers are encouraged to empower employees by providing resources, decision-making authority, and training for sustainability efforts. Leadership support, effective communication, and fostering a supportive culture are also critical in driving green creativity and innovation within organizations, leading to more sustainable strategies and outcomes.

Research Contributions:

This research makes significant strides in business management, particularly within Green Human Resource Management, Green Employee Empowerment, and Green Employee Creativity and Innovation. The theoretical contributions include proposing a framework that explores how green employee empowerment mediates between green HRM and employee creativity, deepening understanding in the field. It also reviews factors impacting green creativity and innovation, enriching theoretical insights by integrating concepts like green HRM and employee empowerment.

On a practical level, the study offers actionable guidance for directors and managers in Yemeni public universities, stressing the implementation of green HRM practices to enhance green creativity and innovation. It emphasizes green employee empowerment as a crucial mediator between green HRM and employee innovation, aiding in the development of long-term strategies. Additionally, the research identifies factors that improve employee performance in academic settings, assisting in the formulation of effective organizational policies.

Research Limitations:

This research has limitations pertaining to sample size and generalizability, being confined to public universities in Yemen. It also faces issues with response bias and self-report measures, potentially affecting data reliability. The cross-sectional design limits establishing causality, while relying solely on self-reported data may not offer a comprehensive view of the variables. Cultural and contextual factors specific to Yemen may impact the applicability of results elsewhere, emphasizing the need for further research in diverse settings to enhance external validity.

Future Research:

Future research could explore longitudinal studies to delve deeper into the relationships between Green HRM, Green Employee Empowerment, and Green Employee Creativity and Innovation over time, allowing for causal relationship examinations. Comparative studies comparing research findings from Yemeni public universities with other regions or industries would enhance generalizability. Employing mixed methods approaches, integrating qualitative and quantitative methods, could offer a more comprehensive understanding of these complex relationships, while investigating additional mediating and moderating factors like organizational culture or leadership styles could provide nuanced insights. Collecting data from multiple sources and conducting intervention studies implementing specific GHRM practices or empowerment initiatives would offer practical insights for organizations aiming to foster green creativity and innovation among employees.

Conclusions:

The research emphasizes the significance of Green Human Resource Management (GHRM) in fostering Green Employee Creativity and Innovation (GECI) by promoting environmentally sustainable practices. It

suggests that GHRM practices positively influence employees' creativity and innovation aligned with green initiatives. Moreover, the study highlights Green Employee Empowerment (GEE) as a mediating factor between GHRM and GECEI, enabling employees to contribute innovative, eco-friendly solutions by providing them with knowledge and resources.

In terms of research methodology, the study utilized a descriptive analysis approach, combining literature exploration with interviews of 363 employees from Yemeni public universities. The questionnaire guided data collection to support research objectives and gather primary data. The practical implications of this research extend to organizations, particularly public universities in Yemen, aiming to integrate sustainability practices and foster green creativity and innovation among employees through GHRM strategies and empowerment initiatives.

This research significantly contributes to the literature by examining the mediating role of GEE in the relationship between GHRM and GECEI, offering insights specific to public universities in Yemen. The study's comprehensive framework sheds light on the interconnectedness of green practices, employee empowerment, and sustainable innovation, potentially informing organizational strategies and policies geared towards sustainability and green creativity in the workplace.

References:

- 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. (2022). Towards sustainable development in the hospitality sector: Does green human resource management stimulate green creativity? A moderated mediation model. *Business Strategy and the Environment*. <https://doi.org/10.1002/bse.3296>
- Acikgoz, F., Elwalda, A., & De Oliveira, M. J. (2023). Investigating the factors affecting attitudes towards smartwatches and behavioral intentions: A combined approach of diffusion of innovation and theory of planned behavior. *International Journal of Information Management Data Insights*, 3, 100152. <https://doi.org/10.1016/j.jimd.2023.100152>

- Aftab, J., Abid, N., Cucari, N., & Savastano, M. (2022). Green human resource management and environmental performance: The role of green innovation and environmental strategy in a developing country. *Business Strategy and the Environment*, 32(4), 1782–1798. <https://doi.org/10.1002/bse.3219>
- Ahmad, I., Ullah, K., & Khan, A. (2022). The impact of green HRM on green creativity: Mediating role of pro-environmental behaviors and moderating role of ethical leadership style. *The International Journal of Human Resource Management*, 33(19), 3789–3821. <https://doi.org/10.1080/09585192.2021.1931938>
- Aina, N., Mohd Zaki, B., & Norazman, I. (2019). The relationship between employee motivation towards green HRM mediated by green employee empowerment: A systematic review and conceptual analysis. *Journal of Research in Psychology*, 1(2). [DOI:10.31580/jrp.v1i2.946](https://doi.org/10.31580/jrp.v1i2.946)
- Ajenthiny, A. (2022). Green human resource management research in emergence: A review and future directions. *Journal of Environmental Management*, 315, 114809. <https://doi.org/10.1016/j.jenvman.2022.114809>
- Alam, M. A., Niu, X. & Rounok N. (2021). Impact of GHRM on organization's environmental performance: Mediating role of green employee empowerment. *Journal of Business*, 6(2). <https://doi.org/10.18533/job.v6i2.202>
- Ali, M. Chapol, Anwaru Islam, K. M., Chung, S., Zayed, N. M., & Afrin, M. (2020). A study of green human resources management (GHRM) and green creativity for human resources professionals. *International Journal of Business and Management Future*, 4(2), 1–16. <https://doi.org/10.46281/ijbmf.v4i2.857>
- Al-Sabi, S. M., Al-Ababneh, M. M., Masadeh, M. A., & Elshaer, I. A. (2023). Enhancing innovation performance in the hotel industry: The role of employee empowerment and quality management practices. *Administrative Sciences*, 13(3), 66. <https://doi.org/10.3390/admsci13030066>
- Amjad, F., Abbas, W., Zia-UR-Rehman, M., Baig, S. A., Hashim, M., Khan, A., & Rehman, H. (2021). Effect of green human resource management practices on organizational sustainability: The mediating role of environmental and employee performance. *Environmental Science and Pollution Research*, 28(22), 28191–28206. <https://doi.org/10.1007/s11356-020-11307-9>

- Al-Hakimi, M. A., Zaid, M. A. K., Khan, M. F., Saleh, M. H., Sharma, D., Verma, R., & Hasan, M. B. (2024). How and when does green transformational leadership affect environmental performance? *International Journal of Business Environment*, 15(2). <https://doi.org/10.1504/IJBE.2024.10000000>
- Al-Swidi, A. K., Gelaidan, H. M., and Saleh, R. M. (2021), "The joint impact of green human resource management, leadership and organizational culture on employees' green behaviour and organisational environmental performance", *Journal of Cleaner Production*, Vol. 316, p. 128112. <https://doi.org/10.1016/j.jclepro.2021.128112>
- AlMunifi, A. A., & Aleryani, A. Y. (2021). Internal efficiency of higher education system in armed conflict-affected countries: Yemen case. *International Journal of Educational Development*, 83, 102394. <https://doi.org/10.1016/j.ijedudev.2021.102394>
- Al Nawaiseh, K., Al Khatib, A. Y., Jaradat, A. A., Maraqa, M. R., & Al Sharari, F. E. A. (2025). Talent management in supply chain optimization: A bibliometric study and content analysis. *Human Systems Management*. <https://doi.org/10.1007/s13132-025-02647-3>
- Andrianto, S., Komardi, D., & Priyono (2023). Leadership, work motivation, and work discipline on job satisfaction and teacher performance of Dharma Loka Elementary School Pekanbaru. *Journal of Applied Business and Technology*, 4(1), 30–38. DOI:[10.35145/jabt.v4i1.117](https://doi.org/10.35145/jabt.v4i1.117)
- Anwar, F., & Humayun, A. (2023). How empowered leadership in Pakistan's public sectors enhances employee creativity: The mediating role of creative self-efficacy. *Journal of Tourism, Hospitality, and Services Industries Research*, 3(1), 19–33. <https://doi.org/10.52461/jths.v3i01.2010>
- Ashraf, H. A., Islam, A., & Ahmad, M. (2023). The impact of servant and transformational leadership on employee creativity and team innovation: The mediating role of employee empowerment. *GO Green Research and Education Journal of Business and Management Research*, 2(2), 1–18. ISSN: 2958-5074 PISSN: 2958-5066, Volume No: 2 Issue No: 2(2023)
- Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16, 74–94. <https://doi.org/10.1007/BF02723327>

- Bahmani, S., Farmanesh, P., & Khademolomoom, A. H. (2023). Effects of green human resource management on innovation performance through green innovation: Evidence from Northern Cyprus on small island universities. *Sustainability*, 15(5). <https://doi.org/10.3390/su15054158>
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173–1182. <https://doi.org/10.1037/0022-3514.51.6.1173>
- Bhatti, M. A., Alyahya, M., Juhari, A. S., & Alshiha, A. A. (2022). Green HRM practices and employee satisfaction in the hotel industry of Saudi Arabia. *International Journal of Operations and Quantitative Management*, 28(1), 100–120. <https://doi.org/10.46970/2022.28.1.6>
- Bhutto, T. A., Farooq, R., Talwar, S., Awan, U., & Dhir, A. (2023). Green inclusive leadership and green creativity in the tourism and hospitality sector: Serial mediation of green psychological climate and work engagement. *Journal of Management & Organization*. <https://doi.org/10.1017/jmo.2023.3>
- Brown, C., & Green, D. (2023). Sustainability leadership: Empowering employees for a greener future. *The Leadership Quarterly*. <https://doi.org/10.1016/j.leaqua.2022.101648>
- Chen, S., & Chang, C. (2020). Green human resource management and green innovation: The roles of green transformational leadership and green creativity. *Business Strategy and the Environment*, 29(8), 3530–3543. <https://doi.org/10.1002/bse.2511>
- Elidemir, S. N., Ozturen, A., & Bayighom, S. W. (2020). Innovative behaviors, employee creativity, and sustainable competitive advantage: A moderated mediation. *Sustainability*, 12(8), 3295. <https://doi.org/10.3390/su12083295>
- Emmanuel, A. A., Mansor, Z. D., Rasdi, R. B. M. D., Abdullah, A. R., & Hossan, D. (2021). Mediating role of empowerment on green human resource management practices and employee retention in the Nigerian hotel industry. *African Journal of Hospitality, Tourism and Leisure*, 10(3), 932–954. <https://doi.org/10.46222/ajhtl.19770720-141>
- Faisal, S., & Naushad, M. (2020). An overview of green HRM practices among SMEs in Saudi Arabia. *Entrepreneurship and Sustainability Issues*, 8(2), 1228–1244. [https://doi.org/10.9770/jesi.2020.8.2\(73\)](https://doi.org/10.9770/jesi.2020.8.2(73))
- Fasih, S. T., Zia, M. Q., Ellahi, R. M., & Mahmood, A. (2025). The green soft and hard talent management and social sustainability: A

- moderated serial mediation model. *Journal of the Knowledge Economy*. <https://doi.org/10.1007/s13132-025-02647-3>
- Gooda, J. R. L., Singh, P., & Ezzedeen, S. (2023). Environmental sustainability strategy, creativity, innovation and organizational performance: The role of green human resource management. *American Business Review*, 26(2), 475–502. <https://doi.org/10.37625/abr.26.2.475-502>
- Hair, E., Halle, T., Terry-Humen, E., Lavelle, B., & Calkins, J. (1998). *Multivariate data analysis* (5th ed.). Prentice Hall. [DOI:10.1016/j.ecresq.2006.09.005](https://doi.org/10.1016/j.ecresq.2006.09.005)
- Hameed, Z., Naeem, R. M., Hassan, M., Naeem, M., Nazim, M., & Maqbool, A. (2022). How GHRM is related to green creativity? A moderated mediation model of green transformational leadership and green perceived organizational support. *International Journal of Manpower*, 43(3), 595–613. <https://doi.org/10.1108/IJM-05-2020-0244>
- Hassan, A., & Ibrahim, B. A. (2025). Relationship between human resource planning policies and employee performance: A case study in Total Uganda Limited. *Journal of Asian Scientific Research*, 15(1), 25–36. <https://doi.org/10.55493/5003.v15i1.5377>
- Huo, W., Li, X., Zheng, M., Liu, Y., & Yan, J. (2020). Commitment to human resource management of the top management team for green creativity. *Sustainability*, 12(3). <https://doi.org/10.3390/su12031008>
- Hussain, K., & Wahab, E. (2021). Reviewing the link between employee creativity, innovative behavior and organizational innovation. *Journal of Management Development*, 40(7), 769–785. <https://doi.org/10.1108/JMD-03-2020-0111>
- Hutomo, A., Marditama, T., Limakrisna, N., Sentosa, I., Lee, J., & Yew, K. (2020). Green human resource management, customer environmental collaboration and the enablers of green employee empowerment: Enhancing environmental performance. *DIJEFA*, 1(2). <https://doi.org/10.38035/DIJEFA>
- Iftikar, T., Hussain, S., Malik, M. I., Hyder, S., Kaleem, M., & Saqib, A. (2022). Green human resource management and pro-environmental behaviour nexus with the lens of AMO theory. *Cogent Business & Management*, 9(1). <https://doi.org/10.1080/23311975.2022.2124603>
- Irani, F., & Kilic, H. (2022). An assessment of implementing green HRM practices on environmental performance: The moderating role of green process innovation. *Journal of Global Hospitality and Tourism*, 1(1), 16–30. <https://doi.org/10.5038/2771-5957.1.1.1001>

- Jamil, S., Khan, S., & Zafar, S. (2022). Resilient employees in resilient organizations: The influence on competency of an organization through sustainable human resource management. *Global Journal for Management and Administrative Sciences*, 3(2), 91–107. <https://doi.org/10.46568/gjmas.v3i2.134>
- Jerónimo, H. M., Henriques, P. L., Lacerda, T. C. de, da Silva, F. P., & Vieira, P. R. (2022). Going green and sustainable: The influence of green HR practices on the organizational rationale for sustainability. *Journal of Business Research*, 112, 413–421. <https://doi.org/10.1016/j.jbusres.2019.11.036>
- Ji, G., & Zhao, X. (2021). Green human resource management, green employee creativity, and green supply chain management: Empirical evidence from China. *Business Strategy and the Environment*, 30(1), 434–450. <https://doi.org/10.1002/bse.2621>
- Jiang, H., Wang, K., Lu, Z., Liu, Y., Wang, Y., & Li, G. (2020). Measuring green creativity for employees in green enterprises: Scale development and validation. *Sustainability*, 13(1), 1–16. <https://doi.org/10.3390/su13010275>
- Jinnah, F. (2023). *Likert scale questionnaire for measure employee performance of the Crest Fashions Pvt. Ltd.* Women University. https://www.academia.edu/40531477/Likert_Scale_Questionnaire_for_measure_Employee_Performance_of_the_Crest_Fashions_Pvt_Ltd
- Jyoti, K. (2019). *Green HRM–people management commitment to environmental sustainability.* SSRN. <https://ssrn.com/abstract=3323800>
- Karatepe, T., Ozturen, A., Karatepe, O. M., Uner, M. M., & Kim, T. T. (2022). Management commitment to the ecological environment, green work engagement and their effects on hotel employees' green work outcomes. *International Journal of Contemporary Hospitality Management*, 34(8), 3084–3112. <https://doi.org/10.1108/IJCHM-10-2021-1242>
- Katz, I. M., Rauvola, R. S., Rudolph, C. W., & Zacher, H. (2022). Employee green behavior: A meta-analysis. *Corporate Social Responsibility and Environmental Management*, 29(5), 1146–1157. <https://doi.org/10.1002/csr.2260>

- Labella-Fernández, A., & Martínez-del-Río, J. (2020). Green human resource management. In *Encyclopedia of Sustainable Management* (pp. 312–323). Springer. https://doi.org/10.1007/978-3-319-95726-5_113
- Mahdy, F., Alqahtani, M., & Binzafrah, F. (2023). Imperatives, benefits, and initiatives of green human resource management (GHRM): A systematic literature review. *Sustainability*, 15(6), 4866. <https://doi.org/10.3390/su15064866>
- Malik M. Siddique, Ali Kamran, Kausar Naila and Chaudhry M. Amir (2021). Enhancing environmental performance through green HRM and green innovation: Examining the mediating role of green creativity and moderating role of green shared vision. *Pakistan Journal of Commerce and Social Sciences*, 15(2), 265–285. <https://hdl.handle.net/10419/237078>
- Malik, S. Y., Mughal, Y. H., Azam, T., Cao, Y., Wan, Z., Zhu, H., & Thurasamy, R. (2021). Corporate social responsibility, green human resources management, and sustainable performance: Is organizational citizenship behavior towards environment the missing link? *Sustainability*, 13(3), 1–24. <https://doi.org/10.3390/su13031044>
- Mansoor, A., Farrukh, M., Lee, J.-K., & Jahan, S. (2021). Stimulation of employees' green creativity through green transformational leadership and management initiatives. *Sustainability*, 13(14), 7844. <https://doi.org/10.3390/su13147844>
- Mathieu, J. E., & Taylor, S. R. (2006). Clarifying conditions and decision points for mediational type inferences in organizational behavior. *Journal of Organizational Behavior*, 27(8), 1031–1056. <https://doi.org/10.1002/job.406>
- Mauley, A. (2023). The role of green human resources management as a mediator of green transformational leadership and green servant leadership relations towards green creativity in hotel and tourism services. *Dinasti International Journal of Management Science*, 4(6), 1063–1072. <https://doi.org/10.31933/dijms.v4i6>
- Meng, J., Murad, M., Li, C., Bakhtawar, A., & Ashraf, S. F. (2023). Green Lifestyle: A Tie between Green Human Resource Management Practices and Green Organizational Citizenship Behavior. *Sustainability* (Switzerland), 15(1). <https://doi.org/10.3390/su15010044>

- Molina-Azorin, J. F., López-Gamero, M. D., Tarí, J. J., Pereira-Moliner, J., & Pertusa-Ortega, E. M. (2021). Environmental management, human resource management and green human resource management: A literature review. *Administrative Sciences*, 11(2). <https://doi.org/10.3390/admsci11020048>
- Mora, L., Gerli, P., Ardito, L., & Messeni Petruzzelli, A. (2023). Smart city governance from an innovation management perspective. *Technovation*, 123, 102717. <https://doi.org/10.1016/j.technovation.2023.102717>
- Muafi, & Kusumawati, R. A. (2021). A nexus between green HRM (GHRM), supply chain performance (SCP) and business performance (BP): The mediating role of supply chain organizational learning (SCOL). *Journal of Industrial Engineering and Management*, 14(2), 329–344. <https://doi.org/10.3926/jiem.3339>
- Muduli, A., & Mishra, N. (2019). Green talent management: A review, conceptualization, and research agenda. *Benchmarking: An International Journal*, 26(4), 1317–1341. <https://doi.org/10.1108/BIJ-11-2017-0301>
- Mukherjee, S., Bhattacharjee, S., Paul, N., & Banerjee, U. (2020). Assessing Green Human Resource Management Practices in Higher Educational Institute. *Journal of Cleaner Production*, 258, 120764. Retrieved from <https://doi.org/10.1016/j.jclepro.2020.120764>
- Munawar, S., Yousaf, D. H. Q., Ahmed, M., & Rehman, D. S (2022). Effects of green human resource management on green innovation through green human capital, environmental knowledge, and managerial environmental concern. *Journal of Hospitality and Tourism Management*, 52, 141–150. <https://doi.org/10.1016/j.jhtm.2022.06.009>
- Mwita, K. M. (2019). Conceptual review of green human resource management practices. *Management and Organizational Studies*, 1–6. <https://www.mocu.ac.tz>
- Nawangarsi, L. C., & Sutawidjaya, A. H. (2019). How the green human resources management (GHRM) process can be adopted for the organization business? *International Journal of Advances in Soft Computing & Its Applications*, 11(3), 1–16. http://www.ijasca.org/Volume11Number3/IJASCA_Volume11Number3_1.pdf

- Noor, M., Alqudah, K. M., Yusof, Y., Bakheet Elayan, M., & Paramita, C. (2021). Green human resource management and organizational environmental sustainability during COVID-19 pandemic: A conceptual framework. *Sustainability*, 13(16), 9015. <https://doi.org/10.3390/su13169015>
- Nson, Y. D. (2024). Sustainability of the society through green human resources management practices: A proposed model. *Annals of Human Resource Management Research*, 4(1), 43–59. <https://doi.org/10.35912/ahrmr.v4i1.2161>
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd Ed.). McGraw-Hill. <https://doi.org/10.1177/073428299901700307>
- Ogbeibu, S., Chiappetta Jabbour, C. J., Burgess, J., Gaskin, J., & Renwick, D. W. S. (2022). Green talent management and turnover intention: The roles of leader STARA competence and digital task interdependence. *Journal of Intellectual Capital*, 23(1), 27–55. <https://doi.org/10.1108/JIC-01-2021-0016>
- Ogbeibu, S., Emelifeonwu, J., Senadjki, A., Gaskin, J., & Kaivo-oja, J. (2020). Technological turbulence and greening of team creativity, product innovation, and human resource management: Implications for sustainability. *Journal of Cleaner Production*, 244, 118703. <https://doi.org/10.1016/j.jclepro.2019.118703>
- 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>
- Quaddus, M., & Hofmeyer, G. (2007). An investigation into the factors influencing the adoption of B2B trading exchanges in small businesses. *European Journal of Information Systems*, 16, 202–215. <https://doi.org/10.1057/palgrave.ejis.3000671>
- Ren, S., Tang, G., & Liu, J. (2020). Green human resource management practices and employee green creativity: The roles of green psychological climate and intrinsic motivation. *Journal of Cleaner Production*, 244, 118753. <https://doi.org/10.1016/j.jclepro.2019.118753>
- Saeed, B. bin, Afsar, B., Hafeez, S., Khan, I., Tahir, M., & Afridi, M. A. (2019). Promoting employees' pro-environmental behavior through

- green human resource management practices. *Corporate Social Responsibility and Environmental Management*, 26(2), 424–438. <https://doi.org/10.1002/csr.1694>
- Saraswathi, D., & Savithri, J. J. (2021). Role of green HRM in advocating pro-environmental behaviour among employees. *ILK Online*, 20(6), 839–846. <https://doi.org/10.17051/ilkonline.2021.06.091>
- Shaban, S. (2019). Reviewing the concept of green HRM (GHRM) and its application practices (green staffing) with suggested research agenda: A review from literature background and testing construction perspective. *International Business Research*, 12(5), 86. <https://doi.org/10.5539/ibr.v12n5p86>
- Shafiq, M. A., Ramzan, M., Faisal, M. M., & Iqbal, S. (2023). Exploring the relationship between green human resource management and green creativity: The moderating influence of green behavioral intention. *Pakistan Journal of Humanities and Social Sciences*, 11(1), 426–439. <https://doi.org/10.52131/pjhss.2023.1101.0362>
- Shah, S. M. A., Jiang, Y., Wu, H., Ahmed, Z., Ullah, I., & Adebayo, T. S. (2021). Linking green human resource practices and environmental economics performance: The role of green economic organizational culture and green psychological climate. *International Journal of Environmental Research and Public Health*, 18(20). <https://doi.org/10.3390/ijerph182010953>
- Shahriari, B., Hassanpoor, A., Navehebrahim, A., & Jafarinia, S. (2019). A systematic review of green human resource management. *Evergreen*, 6(2), 177–189. <https://doi.org/10.5109/2328408>
- Singh, S. K., et al. (2020). Green innovation and environmental performance: The role of green transformational leadership and green human resource management. *Technological Forecasting and Social Change*, 150, 119762. <https://doi.org/10.1016/j.techfore.2019.119762>
- Sobaih, A. E. E., Hasanein, A., & Elshaer, I. (2020). Influences of green human resources management on environmental performance in small lodging enterprises: The role of green innovation. *Sustainability*, 12(24), 10371. <https://doi.org/10.3390/su122410371>
- Tian, H., Siddik, A. B., Pertheban, T. R., & Rahman, M. N. (2023). Does fintech innovation and green transformational leadership improve green innovation and corporate environmental performance? A hybrid SEM-ANN approach. *Journal of Innovation & Knowledge*, 8, 100396. <https://doi.org/10.1016/j.jik.2023.100396>

- Umair, S., Waqas, U., Mrugalska, B., & Al Shamsi, I. R. (2023). Environmental corporate social responsibility, green talent management, and organization's sustainable performance in the banking sector of Oman: The role of innovative work behavior and green performance. *Sustainability*, 15(19), 14303. <https://doi.org/10.3390/su151914303>
- Wang, Z., Khan Mohamed Makhbul, Z., & Alam, S. S. (2024). Green human resource management in practice: Assessing the impact of readiness and corporate social responsibility on organizational change. *Sustainability*, 16(2), 1153. <https://doi.org/10.3390/su16021153>
- Wijoyo, H. (2021). Did servant, digital and green leadership influence market performance? Evidence from Indonesian pharmaceutical industry. *SSRN*. <https://ssrn.com/abstract=3873726>
- Yin, S., Zhang, N., Ullah, K., & Gao, S. (2022). Enhancing digital innovation for the sustainable transformation of manufacturing industry: A pressure–state–response system framework to perceptions of digital green innovation and its performance for green and intelligent manufacturing. *Systems*, 10(3). <https://doi.org/10.3390/systems10030072>
- Zahrani, A. (2022). Team creativity and green human resource management practices' mediating roles in organizational sustainability. *Sustainability*, 14(19), 12827. <https://doi.org/10.3390/su141912827>
- Zaid, J. D. A., & Mousa, R. M. A. (2024). The impact of human resources management practices on green innovation: A field study at Yemeni pharmaceutical industrial companies in the capital municipality of Sana'a. *University of Science and Technology Journal for Management and Human Sciences*, 2(3), 1-34. <https://doi.org/10.59222/usijmhs.2.3.1>
- Zhang, B., Ma, H., & Qu, H. (2019). How does green human resource management promote employee pro-environmental behavior? A mechanism of psychological safety and psychological ownership. *Journal of Business Research*, 101, 381–390. <https://doi.org/10.1016/j.jbusres.2019.03.026>