

Green HRM and Employees' Eco-Innovation in Five-star Hotels and Travel Agencies: The Moderating Role of Green Transformational Leadership

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Abstract

Eco-innovation has become a top priority for hospitality and tourism organizations in today's competitive market. Therefore, this study investigates the effect of green HRM on employees' eco-innovation in five-star hotels and travel agencies with a focus on green transformational leadership as a moderator. The study utilized the PLS-SEM approach with WarpPLS software version 7.0 to analyze 402 responses gathered from employees of five-star hotels and travel agencies in Greater Cairo. Results revealed a positive impact of green HRM on employees' eco-innovation. In addition, green transformational leadership has a positive effect on green HRM and employees' eco-innovation. Furthermore, green transformational leadership has a positive moderating effect on the relationship between green HRM and employees' eco-innovation. The study offers practical guidance for managers and practitioners, emphasizing green transformational leadership as a key bridge to unlocking employees' eco-innovation.

Keywords: Green HRM, employees' eco-innovation, green transformational leadership, five-star hotels, travel agencies.

Introduction

In today's fast-paced, competitive market, eco-innovation has become a top priority for hospitality and tourism organizations. To thrive, hospitality and tourism organizations need not only to excel in traditional innovation but also embrace new approaches that benefit both themselves and the environment (Gürlek & Koseoglu, 2021). This eco-innovation can create a competitive edge while tackling pressing environmental challenges. It represents a critical shift in how organizations must operate, moving beyond self-preservation to embrace a more sustainable and impactful future (Kuo et al., 2022). Some researchers used environmental, green, and eco-innovation as synonymous terms that aim to decrease the environmental harm caused by economic practices (Ali et al., 2021; Ansari et al., 2022). Eco-innovation was defined as the inclusion of creating, adopting, or using something new (a product, process, service, or business method) for an organization, which must reduce environmental harm compared to similar things already available. Throughout its entire lifespan, it must bring about less risk, pollution, and resource use (including energy) (Kemp & Pearson, 2007). While management plays a crucial role in environmental sustainability, employees can also be a driving force for innovation, in both processes and products (Kianto et al., 2017). This makes human resource management (especially Green HRM) essential for fostering a culture of eco-innovation within the organization (Ansari et al., 2022).

Green HRM has rocketed from a buzzword to a business necessity, fueled by rising global awareness of sustainable technology and eco-innovation (Shen et al., 2019). Today, green HRM goes beyond environmental concerns, shaping the economic and social fortunes of both organizations and their workforce (Ali et al., 2021). Abou Raia et al. (2023) indicated that green HRM involves systematically aligning traditional HRM practices with an organization's

environmental objectives. Green HRM was defined as integrating environmental sustainability principles into all HR processes, empowering employees to actively contribute to eco-friendly practices throughout recruitment, selection, training, talent management, and compensation systems (Tang et al., 2018; Shen et al., 2019). Green management gained more momentum, with two key tools emerging as frontrunners: green HRM and green leadership. Both play crucial roles in improving organizations' environmental innovation (Chen & Wu, 2022; Niazi et al., 2023). Studies show that green HRM can significantly boost employee skills, abilities, and stimulation for engaging in eco-friendly actions (Ribeiro et al., 2022). This makes green HRM implementation a critical step for organizations seeking both a competitive edge and improved environmental innovation (Singh et al., 2020; Begum et al., 2022). However, the role of leaders is becoming increasingly crucial. Their decisions and actions hold significant sway over organizations' environmental innovation (Pham et al., 2023).

Robertson (2018) defined green transformational leadership (green TFL) as a leadership competency characterized by the ability to inspire and motivate subordinates to achieve environmental sustainability goals. Green TFL empowers employees to go beyond the expected by providing a clear roadmap for environmental progress and igniting their passion for the environmental cause (Singh et al., 2020). Through powerful visions and infectious enthusiasm, transformational leaders unlock the potential within their teams, unleashing their drive and initiative to achieve their aims (Rizvi & Garg, 2021). Moreover, green transformational leaders are not just managers; they are catalysts for green innovation. By fostering a culture of creative thinking and action, they empower employees to contribute novel ideas and push the boundaries of what is possible (Begum et al., 2022). While the role of transformational leadership in organizational success is well established, its potential for driving environmental sustainability remains understudied globally (Perez et al., 2023). Recent research, however, suggests a promising link. Studies demonstrate that transformational leaders who prioritize environmental goals not only motivate employees to adopt green behaviors but also directly influence the organization's overall environmental performance (Mittal & Dhar, 2016; Nisar et al., 2017; Perez et al., 2023). This is because their focus on inspiring and mobilizing followers translates into enhanced ecological innovation and commitment within the workforce, ultimately leading to greener practices and positive environmental outcomes (Singh et al., 2020; Niazi et al., 2023).

Previous studies examined the relationship between green HRM and green innovation in different contexts like the manufacturing industry (e.g., Ali et al., 2021; Ansari et al., 2022), universities (e.g., Bahmani et al., 2023), SMEs (e.g., Ahakwa et al., 2021; Altassan, 2023), hotel sector (e.g., Munawar et al., 2022), tourism companies (e.g., Elmogy, 2022; Madkhali, 2023), but a substantial knowledge gap that persists in recognizing the indirect relationship between green HRM and employees' eco-innovation within the hospitality and tourism sectors. To our knowledge, no prior study has investigated the indirect correlation between green HRM and employees' eco-innovation, considering green transformational leadership as a potential moderating factor, especially within the hospitality and tourism sector. Consequently, there is a compelling need for empirical research that explicitly targets the hospitality and tourism sectors, as it may offer a more in-depth understanding of the green HRM-eco-innovation relationship. Therefore, this study aimed to bridge the gap in the literature by investigating the moderating role of green transformational leadership in the relationship between green HRM and employees' eco-innovation in the hospitality and tourism industry.

Theoretical Framework and Hypothesis Development

Green HRM and Employees' Eco-Innovation

Building on the established importance of human resource management in bolstering employee capabilities for innovation, Seeck and Diehl (2017) proposed that green HRM practices significantly influence eco-innovation. This notion is fueled by the link between recruiting and selecting employees with a green orientation and their subsequent environment-friendly behavior, both generally and in the context of eco-innovation-related activities (Song et al., 2021). Green hiring offers several advantages. It enhances a firm's greener image and attractiveness in environmental management, drawing talent with shared values who are eager to contribute to innovative green solutions. Moreover, selecting employees with strong environmental sensitivity and expertise fosters the generation of novel and impactful ideas for tackling environmental challenges, propelling eco-innovation (Singh et al., 2020; Jun et al., 2021). Additionally, retaining employees who actively engage in environmental practices fosters a continuous cycle of eco-innovation (Renwick et al., 2016; Ali et al., 2021).

Investing in green training empowers employees to actively identify environmental issues and engage in eco-innovation initiatives (Renwick et al., 2013). Additionally, it equips them with the necessary environmental management skills and knowledge, which can spark the creation of groundbreaking eco-innovation ideas (Guerci et al., 2016). Engaging employees in green initiatives not only strengthens their eco-friendly behaviors (Ansari et al., 2021) but also unlocks opportunities for eco-innovation through skill application (Ansari et al., 2022). Recognizing creative environmental efforts and green process/product ideas further fuels employees' eco-innovation. By recognizing and rewarding employees' green ideas, green HRM practices boost their motivation, skillset, and opportunity to contribute their unique knowledge, ultimately driving their eco-innovation (Singh et al., 2020). By implementing green HRM practices, organizations can foster employee motivation, skills, and opportunities. This, in turn, unlocks their unique expertise in green processes and product innovation (Shahzad et al., 2023). Drawing on the theoretical framework of the ability-motivation-opportunity model (Anwar et al., 2018) and the resource-based view (Munodawafa & Johl, 2019), Ansari et al. (2022) argue that valuing and capitalizing on the potential of their human talent through green HRM empowers organizations to cultivate and execute eco-innovation in both processes and products. Hence, the following hypothesis was formulated:

H1: there is a positive relationship between green HRM and employees' eco-innovation

Green Transformational Leadership and Green HRM

In the face of ever-shifting markets, transformational leaders stand out with their piercing vision for the organization's present and future trajectory (Yuen-Tsang & Healy, 2019). This vision is not just any roadmap; it is a spark of innovation, fueled by the leader's unwavering conviction. Moreover, their ability to clearly articulate and share this vision is what ignites excitement and belief in their followers. They do not merely dictate, but they inspire a shared goal toward a future that their team cannot get behind (Morkevičiūtė & Endriulaitienė, 2020). Green TFL is the leadership behaviors that drive follower motivation and performance in achieving environmental goals, exceeding expected levels of sustainability (Chen & Chang, 2013). Green transformational leaders champion green values, both personally and professionally, and inspire employees to adopt more sustainable behaviors within the workplace (Chen et al., 2014). This influence

transcends individual actions, prompting the development and implementation of green human resource management policies and practices (Huelgas & Arellano, 2021).

On the other hand, green HRM focuses on the environmental aspect of employee practices as contrary to traditional HR (Renwick et al., 2013). Green HRM aims to foster a workplace where employees adopt green behaviors in every aspect of their work (Dumont et al., 2017). This shift towards environmental consciousness is heavily influenced by the leadership's beliefs and values, as manifested in their green transformational leadership approach (Jia et al., 2018). Recent research suggests that green TFL is crucial for driving green innovation and performance within organizations (Arshad, 2020; Singh et al., 2020). This leadership style, focused on employees' individual needs and motivations, is seen as a key factor in shaping supportive green HRM policies and practices (Huelgas & Arellano, 2021). These green HRM initiatives, in turn, empower employees and help them align with the organization's green strategies and vision, ultimately contributing to improved environmental performance (Sun et al., 2022). As a result, green TFL assumes a more prominent role in the execution of positive green HRM practices, encompassing recruitment and selection, training and development, performance appraisal and management, and compensation and incentive systems (Cahyadi et al., 2022). This strategic engagement is intended to serve as a means of inspiring, stimulating, and motivating employees to achieve organizational objectives (Perez et al., 2023). Therefore, the following hypothesis was proposed:

H2: there is a positive relationship between green TFL and green HRM

Green Transformational Leadership and Employees' Eco-Innovation

Environmental pressures from external institutions often drive organizations towards greener practices. This environmental pressure motivated organizations to encourage employees' eco-innovation (Chen et al., 2017) and adopt green transformational leadership styles (Chen et al., 2018). Eco-innovation is a complex undertaking, and its success hinges heavily on leaders and their specific traits (Andriopoulos & Lewis, 2010). Their ability to champion environmental sustainability acts as a critical catalyst (Chen & Wu, 2022). Zhao et al. (2018) demonstrated that relying on internal resources (e.g., leadership styles) has proven sufficient for some organizations to achieve eco-innovation. Green TFL, characterized by its focus on environmental sustainability and inspiring followers to exceed expectations, plays a crucial role in fostering green innovation within organizations (Chen & Chang, 2013). Recognizing this, researchers like Bahzar (2019) and Alsaeedi (2020) proposed adopting green TFL, which enhances eco-innovation by fostering employees' creative thinking and driving them toward exceeding performance expectations.

Research has consistently shown that transformative leadership, characterized by its emphasis on vision, inspiration, and intellectual stimulation, is essential for unlocking innovative potential (Mittal & Dhar, 2016; Sun et al., 2022). Where Singh et al. (2020) underscored the role of green transformational leadership in fostering eco-innovation. As green transformational leaders through their clear vision and inspirational approach, encourage their employees to introduce innovative green ideas. Zhou et al. (2021) noted that when green transformational leaders hold the reins of strategic direction, they actively advocate for and prioritize green innovation. In addition, they observe competitors going green and seek to keep pace or even surpass them through employees' eco-innovation practices (Zhou et al., 2021). Studies by Rizvi & Garg (2021), Begum et al. (2022), and Niazi et al. (2023) indicated how green transformational leaders

can help their organizations build an innovative climate, conducive to creative green developments. This growing body of research strengthens the link between green transformational leadership and positive outcomes in eco-innovation (Tian et al., 2023). Therefore, the following hypothesis was formulated:

H3: there is a positive relationship between green TFL and employees' eco-innovation

The Moderating Role of Green Transformational Leadership

Effective organizational management relies on two crucial pillars: leadership (Leroy et al., 2018) and human resource management (Del Giudice et al., 2018). HRM focuses on designing and implementing systematic processes to influence employees on a broader scale (DeCenzo et al., 2016). While leadership delves deeper. It examines the interpersonal dynamics within an organization, seeking to understand, predict, and guide individuals and teams toward shared goals (Dugan, 2017). The relationship between leadership and HRM in managing people is complex and multifaceted. While both are involved in influencing employees, they do so from different perspectives (Leroy et al., 2018). Some studies argued that leadership mediates the effect of HRM practices on employee outcomes like motivation and performance. Leaders act as a bridge, translating HR policies into concrete actions that drive engagement and effectiveness (Piening et al., 2014; Sikora et al., 2015). Others indicated that leadership moderates the relationship between HRM practices and employee outcomes. This means that the effectiveness of HR practices depends on the leadership style or behaviors present (Vasilaki, 2011; Vasilaki et al., 2016). Finally, some scholars propose that leadership is an antecedent, meaning it directly influences both HRM practices and their subsequent outcomes. In this view, strong leadership shapes effective HR strategies, which then lead to motivated and high-performing employees (Renwick et al., 2013; Jia et al., 2018). However, Singha et al. (2020) suggested that green TFL plays a particularly critical role as an antecedent in SMEs. They argue that in such contexts, strong green TFL directly shapes green HRM practices, which then drive eco-innovation and ultimately environmental performance.

Similarly, current research argues that organizations can leverage green TFL to empower and motivate employees toward green work behaviors, ultimately improving environmental performance (Chen & Chang 2013; Renwick et al., 2013). GHRM practices implemented under GTFL can spark green passion (Jia et al., 2018), green innovation (Renwick et al., 2013; Jia et al., 2018), and a sense of modernism among employees (Chen & Chang, 2013; Zhou et al., 2021). Le and Lei (2018) proposed that green TFL fosters an environment where followers are empowered to seek new knowledge and become drivers of green innovation. GTFL utilizes green HRM practices to empower and motivate followers (Huelgas & Arellano, 2021). This, in turn, fosters their engagement in environmental management activities (Awan et al., 2023), ultimately leading to improved green innovations and environmental performance (Dumont et al., 2017; Singh et al., 2020; Begum et al., 2022; Perez et al., 2023). Therefore, the following hypothesis was proposed:

H4: green TFL positively moderates the relationship between green HRM and employees' eco-innovation

The conceptual framework of the study is illustrated in Figure 1 below.

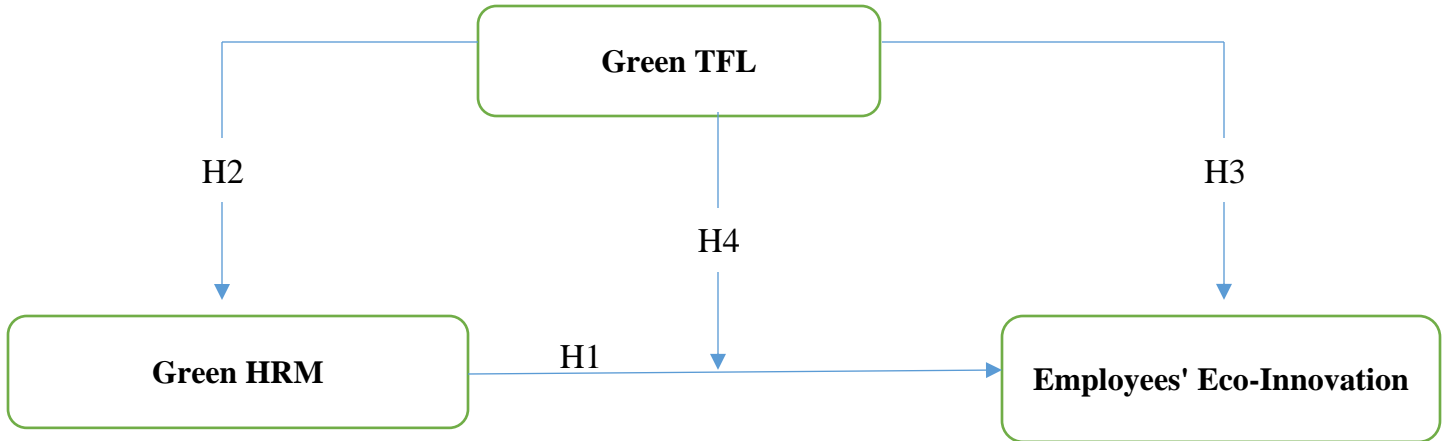


Figure (1): Conceptual framework of the study

Methodology

Measures

Green human resources management (GHRM) was assessed by a 6-item scale developed by Dumont et al. (2017). For example, “My organization sets green goals for its employees” and “My organization provides employees with green training to promote green values”. In addition, Eco-innovation was measured by a 6-item scale adapted from Valdez-Juárez and Castillo-Vergara (2020). For instance, “In the last 2 years, your organization has designed products that reduce the use of materials” and “In the last 2 years, your organization has designed products with components for reuse or recycling”. Moreover, green transformational leadership was measured by a 6-item scale adapted from Chen and Chang (2013). Sample items include: “The leader inspires the organization members with the environmental plans” and “The leader provides a clear environmental vision for the members to follow”. See more details on measurement scales in Appendix (A). The study utilized a five-point Likert scale to assess all latent variables, ranging from 1 for strongly disagree to 5 for strongly agree.

Sampling, data collection and analysis

The business categories of five-star hotels and travel agencies were chosen due to their significant presence in Egypt's hospitality and tourism industry, which primarily caters to international tourists. The study collected data from the Greater Cairo region of Egypt using a convenience sample strategy due to the large population and limited resources of the researchers. The Egyptian Ministry of Tourism reported in 2018 that the country had 158 five-star hotels and 2222 category (A) travel agents (The Ministry of Tourism, 2018). 600 questionnaires were distributed in the investigated businesses, with 402 valid responses. The response rate was 67%, with 62.94% (n=253) of the respondents working in 20 five-star hotels and 37.06% (n=149) in 40 travel agencies. The study utilized the PLS-SEM approach with WarpPLS software version 7.0 to analyze its measurement and structural model and evaluate its research hypotheses.

Results

Participant's profile

The study involved 402 employees, with 281 (69.90%) being men and 121 (30.10%) being women. Over half of the respondents, comprising 210 (52.24%), were aged between 30 and less than 45. The majority of the respondents (305, 75.87%) held a bachelor's degree. Most of the

employees (n=205, 51%) had between two and less than five years of work experience. About two-thirds of employees (n=253, 62.94%) were employed in five-star hotels, while 149 (37.06%) were employed in travel agencies.

Table 1. Participant’s profile (N=402)

		Frequency	Percent
Gender	Male	281	69.90
	Female	121	30.10
Age group	< 30 years	130	32.34
	30: < 45 years	210	52.24
	≥45 years	62	15.42
Education	High schools/institute	70	17.41
	Bachelor	305	75.87
	Master/PhD	27	6.72
Tenure	1:< 2 years	90	22.39
	2 to <5 years	205	51.00
	5 to 8 years	60	14.93
	> 8 years	47	11.69
Enterprise	Hotels	253	62.94
	Travel agency	149	37.06

Measurement model

The confirmatory factor analysis (CFA) revealed acceptable item loadings between 0.608 and 0.957, as per Hair et al. (2010). The Cronbach's alpha and composite reliability values for all variables are above 0.7, indicating scale reliability. Results found that all variables have AVE values above 0.5, indicating scale reliability Hair et al. (2020). Moreover, the variance inflation factor (VIF) is calculated to indicate pathological collinearity and common method bias, with a value of ≤3.3 (Kock, 2015).

Table 2. Factor loadings, Cronbach’s, CR, AVE, and VIF

	Item loading	CR	CA	AVE	VIF
Green Human Resources Management (GHRM)	-	0.951	0.936	0.764	1.387
GHRM .1	0.920**				
GHRM .2	0.862**				
GHRM .3	0.844**				
GHRM .4	0.928**				
GHRM .5	0.957**				
GHRM .6	0.709**				
Eco-Innovation (EcIn)	-	0.916	0.887	0.648	1.807
EcIn .1	0.795**				
EcIn .2	0.745**				
EcIn .3	0.937**				

EcIn .4	0.880**				
EcIn .5	0.824**				
EcIn .6	0.608**				
Green Transformational Leadership (GTL)	-				
GTL .1	0.782**	0.930	0.910	0.691	1.934
GTL .2	0.870**				
GTL .3	0.795**				
GTL .4	0.830**				
GTL .5	0.861**				
GTL .6	0.843**				
“CR: Composite reliability; CA: Cronbach's alpha; AVE: average variance extracted; VIF: variance inflation factors” ** P value for item loading (<0.001)					

The research model's discriminant validity is confirmed by the results in Table (3), which show a significant correlation between latent variables and an AVE value, which is greater than the greatest common value.

Table 3. Research model’s discriminant validity

	GHRM	GTL	EcIn
Green Human Resources Management (GHRM)	0.874	0.453	0.393
Green Transformational Leadership (GTL)	0.453	0.831	0.659
Eco-Innovation (EcIn)	0.393	0.659	0.805

The research model fit

The current study research model, as presented in Appendix (B), has achieved all ten "model fit and quality indices" suggested by Kock (2021).

Structural model and testing hypotheses

Figure 2 shows the results of testing the four (H1, H2, H3, and H4) hypotheses proposed in this study. Results revealed that there is a positive impact of green HRM on employees' Eco-Innovation ($\beta=0.20$, $P<0.01$). This means that when green HRM increases, employees' Eco-Innovation tends to be high. Therefore, H1 is supported. In addition, green transformational leadership has a positive effect on green HRM ($\beta=0.54$, $P<0.01$) and employees' Eco-Innovation ($\beta=0.56$, $P<0.01$). This means that when green transformational leadership increases, both green HRM and employees' Eco-Innovation tend to be high. Therefore, H2 and H3 are supported. Furthermore, green transformational leadership has a positive moderating effect on the relationship between green HRM and employees' Eco-Innovation ($\beta=0.10$, $P=0.02$). This means that green transformational leadership strengthens the positive relationship between green HRM and employees' Eco-Innovation. Thus, H4 is supported. Figure 2 also shows that green transformational leadership interprets 29% of the variance in green HRM ($R^2=0.29$), while green HRM and green transformational leadership interpret 56% of the variance in employees' Eco-Innovation ($R^2=0.56$).

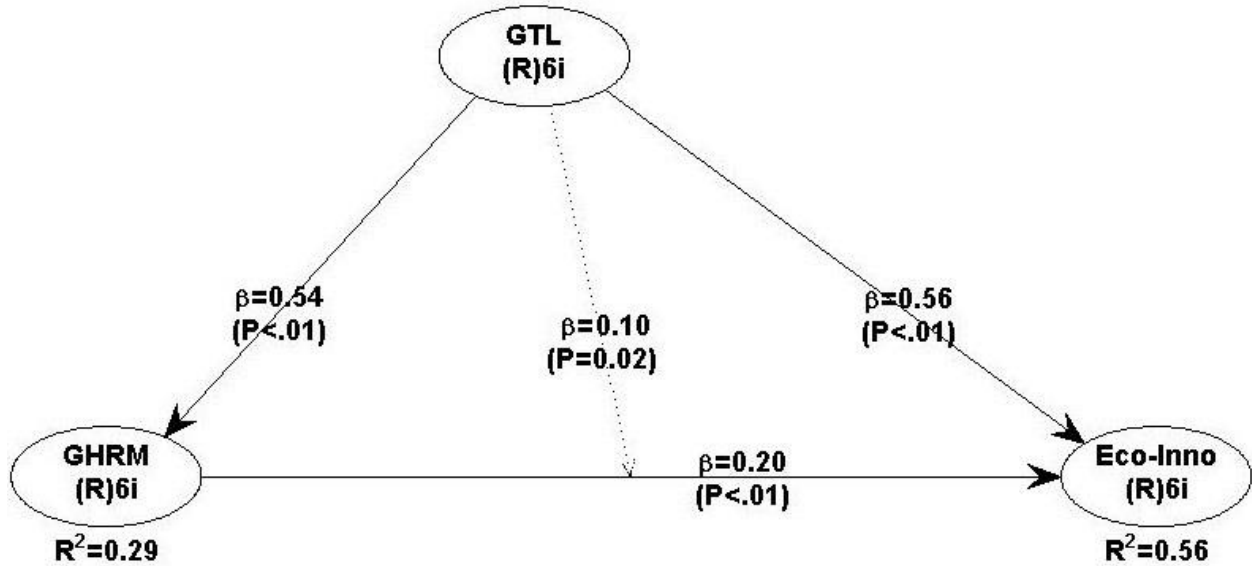


Figure 2: Final model of the study

Discussion

The study aims to explore the effect of green HRM on employees' Eco-Innovation with a focus on the moderating role of green transformational leadership. The conceptual model was developed and tested using the PLS-SEM approach. Findings reveal that green HRM has a positive effect on employees' Eco-Innovation (H1: supported). This finding is consistent with previous results of Seeck and Diehl (2017) who argued that green HRM practices have a considerable impact on eco-innovation. Green HRM practices significantly influence eco-innovation by recruiting and selecting employees with a green orientation. This approach enhances a firm's greener image, attracts talent with shared values, and fosters innovative ideas for tackling environmental challenges. Retaining employees who actively engage in environmental practices fosters a continuous cycle of eco-innovation. In other words, implementing Green HRM practices can spark green passion, innovation, and modernism among employees.

Findings also revealed that green transformational leadership positively affects green HRM and eco-innovation; it also positively moderates the relationship between green HRM and eco-innovation. These results are consistent with previous studies of Rizvi & Garg (2021), Begum et al. (2022), and Niazi et al. (2023) which claimed that green transformational leaders can foster an innovative climate within organizations, promoting creative green developments. Green transformational leaders inspire employees to introduce innovative green ideas, advocating for green innovation and observing competitors' green practices to keep pace or surpass them in strategic direction. Green transformational leaders can also motivate employees towards green work behaviors, improving environmental performance. Green transformational leaders foster an environment where followers seek knowledge and drive green innovation, leading to improved environmental performance and engagement in environmental management activities.

Theoretical and practical implications

The study's previously reported results have implications for both theoretical understanding and practical applications. For contribution to the theory, the study's findings help to lessen

ambiguity in the existing literature on green HRM concerning eco-innovation in hospitality and tourism organizations. The results of our research add to the body of knowledge in the area of how green HRM improves employees' eco-innovation in the hospitality and tourism industry. This study highlights the importance of green HRM practices as a powerful tool for unlocking employee eco-innovation within hospitality and tourism organizations. It argues that in the context of both green HRM and green TFL, employees represent the most crucial resource for implementing environmentally friendly practices. The proposed framework offers HR managers valuable insights into utilizing green HRM practices to attract, train, motivate, and retain employees who can drive the organization's eco-innovation goals.

The study's theoretical framework, utilizing experimental data and statistical analysis, delved into the influence of green HRM practices on employee eco-innovation within the hospitality and tourism industry, with green transformational leadership acting as a moderating variable. These findings provide empirical evidence solidifying the documented association between green human resource management and employees' eco-innovation, confirming prior findings (Singh et al., 2020; Ansari et al., 2022; Shahzad et al., 2023). By addressing the calling for investigating moderating variables in earlier studies (Ali et al., 2021; Huelgas & Arellano, 2021; Ansari et al., 2022; Abou Raia et al., 2023), this investigation delves into the moderating role of green transformational leadership. The study's findings unveil compelling evidence that green transformational leadership moderates the link between green HRM initiatives and employee eco-innovation within the hospitality and tourism industry. In line with theories of the ability-motivation-opportunity and the resource-based view used in the study by Ansari et al. (2022), the current study embraces the significant role of green transformational leadership to promote employees' eco-innovation through green HRM.

Investing in green HRM practices goes beyond attracting and keeping environmentally conscious employees, to boost organizations' competitive edge by driving green innovation (Ansari et al., 2022). This research provides practical guidance for managers and practitioners in the hospitality and tourism sectors on how to leverage GHRM practices to unlock employees' eco-innovation, with green transformational leadership serving as the key bridge. Firstly, the current study suggests that adopting green HRM practices is beneficial to hospitality and tourism organizations in becoming more innovative, as employees actively seek to work for organizations prioritizing sustainability. Hospitality and tourism organizations can leverage this trend by effectively implementing green HRM practices and shaping employee behavior towards eco-friendly choices. Moreover, a key element of GHRM is green training and rewards. Green training equips employees with relevant skills and environmental awareness empowers them to tackle environmental challenges and confidently propose green initiatives. In addition, acknowledging and rewarding employees' eco-friendly innovation may inspire them to engage in more eco-innovativeness activities. Secondly, Top managers' green transformational leadership style plays a significant role in shaping green HRM practices in the organization. To gain a competitive edge through environmentally sustainable processes, products, and services, organizations need a workforce driven by green beliefs and values. Green human resource management practices are crucial for attracting, developing, and retaining such employees. Green transformational leadership can play a key role in this process by fostering a supportive environment where employees with green skills and motivation feel valued and empowered. By providing opportunities for these individuals to unlock their green potential and contribute to green innovation, organizations can ensure they remain relevant and competitive in today's increasingly eco-conscious markets. Moreover, green transformational leaders play a key role in

formulating supportive green HRM policies and practices, ensuring all efforts pull in the same direction towards the goal of environmental sustainability through employee eco-innovation. Thirdly, Top managers' green transformational leadership style plays a significant role in improving employees' eco-innovation. Where green transformational leaders actively provide the vision and set the direction that inspires and motivates employees, unlocking their potential for green innovation. Furthermore, Leaders should prioritize employees' eco-innovation as a strategic resource and utilize it in achieving the organization's environmental management objectives. Where unconditional support and commitment from top management are considered the cornerstone of successfully promoting employees' eco-innovation. This translates into fostering a culture where green human resource practices are not only encouraged but also actively incentivized.

Limitations and further research

While limitations exist, this study also offers valuable insights and paves the way for further research. First, the study investigated the relationship between green HRM and employees' eco-innovation with green TGL within the context of five-star hotels and travel agencies category (A). Its theoretical framework and findings offer useful insights for similar organizations with shared characteristics. Further research exploring these relationships in different industries or cultural contexts could build a more holistic understanding of these complex interdependencies. Therefore, replicating this study in diverse settings like travel agencies (B & C), restaurants, green hospitality venues, or airlines might yield different results. This could enrich our knowledge of the intricate connections between these variables. Second, the current study delved into the moderating role of green TGL in the relationship between green HRM and employees' eco-innovation. Therefore, further research is required to investigate the potential mediation impact of green TGL in the green HRM and employees' eco-innovation relationship or explore the mediating/moderating role of other factors like green innovation culture, dynamic eco-innovation practices, green commitment, green knowledge sharing, etc.

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Appendix (A): Measurement Scales

GHRM

(Dumont et al., 2017)

- My organization sets green goals for its employees
- My organization provides employees with green training to promote green values
- My organization provides employees with green training to develop employees' knowledge and skills required for green management
- My organization considers employees' workplace green behavior in performance appraisals
- My organization relates employees' workplace green behaviors to rewards and compensation
- My organization considers employees' workplace green behaviors in promotion

Eco-innovation

Valdez-Juárez and Castillo-Vergara (2020)

In the last 2 years, your organization has:

- Designed products that reduce the use of materials.
- Designed products with components for reuse or recycling.
- Designed products to avoid or reduce the use of hazardous materials.
- Used production processes that minimize or reduce waste.
- Cooperated and linked with sustainable suppliers.
- Used processes and technologies focused on energy efficiency.

Green transformational leadership

Chen and Chang (2013)

- The leader inspires the organization members with environmental plans.
- The leader provides a clear environmental vision for the members to follow.
- The leader gets the organization members to work together for the same environmental goals.
- The leader encourages the organization members to achieve environmental goals.
- The leader acts by considering the environmental beliefs of the organization's members.
- The leader stimulates the organization members to think about green ideas.

Appendix (B) Model fit and quality indices

	Assessment	Criterion	Supported/Rejected
Average path coefficient (APC)	0.350, P<0.001	P<0.05	Supported
Average R-squared (ARS)	0.422, P<0.001	P<0.05	Supported
Average adjusted R-squared (AARS)	0.419, P<0.001	P<0.05	Supported
Average block VIF (AVIF)	1.727	acceptable if ≤ 5 , ideally ≤ 3.3	Supported
Average full collinearity VIF (AFVIF)	1.575	acceptable if ≤ 5 , ideally ≤ 3.3	Supported
Tenenhaus GoF (GoF)	0.572	small ≥ 0.1 , medium ≥ 0.25 , large ≥ 0.36	Supported
Sympson's paradox ratio (SPR)	1.000	acceptable if ≥ 0.7 , ideally = 1	Supported
R-squared contribution ratio (RSCR)	1.000	acceptable if ≥ 0.9 , ideally = 1	Supported
Statistical suppression ratio (SSR)	1.000	acceptable if ≥ 0.7	Supported
Nonlinear bivariate causality direction ratio (NLBCDR)	1.000	acceptable if ≥ 0.7	Supported

الملخص العربي

إدارة الموارد البشرية الخضراء والابتكار البيئي للموظفين في فنادق الخمس نجوم ووكالات السفر: الدور المعدل للقيادة التحويلية الخضراء

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أصبح الابتكار البيئي أولوية قصوى لمنظمات الضيافة والسياحة في السوق التنافسية اليوم. ولذلك، تبحث هذه الدراسة في تأثير إدارة الموارد البشرية الخضراء على الابتكار البيئي للموظفين في فنادق الخمس نجوم ووكالات السفر مع التركيز على الدور المعدل للقيادة التحويلية الخضراء. استخدمت الدراسة منهج PLS-SEM مع الإصدار 7.0 من برنامج WarpPLS لتحليل 402 استجابة تم جمعها من العاملين بفنادق الخمس نجوم ووكالات السفر فئة (أ) بالقاهرة الكبرى. كشفت النتائج عن تأثير إيجابي لإدارة الموارد البشرية الخضراء على الابتكار البيئي لدى الموظفين. كما أن القيادة التحويلية الخضراء لها تأثير إيجابي على إدارة الموارد البشرية الخضراء والابتكار البيئي للموظفين. علاوة على ذلك، فإن القيادة التحويلية الخضراء لها تأثير إيجابي معدل على العلاقة بين إدارة الموارد البشرية الخضراء والابتكار البيئي للموظفين. تقدم الدراسة إرشادات عملية للمديرين والممارسين، مع التركيز على القيادة التحويلية الخضراء باعتبارها جسراً رئيسياً لإطلاق العنان للابتكار البيئي للموظفين.

الكلمات المفتاحية: إدارة الموارد البشرية الخضراء، الابتكار البيئي للموظفين، القيادة التحويلية الخضراء، فنادق الخمس نجوم، وكالات السفر.