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THE NEXUS BETWEEN GREEN TRANSFORMATIONAL LEADERSHIP AND HOTEL EMPLOYEES' NON-GREEN BEHAVIOR: THE MEDIATING ROLES OF GREEN WORK ENGAGEMENT AND GREEN KNOWLEDGE SHARING

Meshael BATARFI[1], Hazem Ahmed KHAIRY [2], Mohamed Fathy AGINA [3*], Haidar ALMUBARAK[4], Abdul Wasea ALMEKHLAFI [5], Mohammed Awad ALASMRAI [6], Amani ABDALATTI [7], Mohamed ALI [8]

[1] University of Business and Technology, Sports Management Department, Jeddah, Saudi Arabia; mashael@ubt.edu.sa (M.B.)
[2] University of Sadat City, Faculty of Tourism and Hotels, Hotel Management Department, Sadat City, Egypt; hazem.khaiery@fth.usc.edu.eg; (H.A.K.)
[3] Higher Institute for Specific Studies, Hotel Management Department, Heliopolis, Cairo, Egypt; mohamadfathy.eg@gmail.com (M.F.A.)
[4] Saudi Electronic University, Department of Information Technology, Riyadh, Saudi Arabia; h.almubarak@seu.edu.sa (H.A.)
[5] Prince Sattam bin Abdulaziz University, Business Administration Faculty, Al-Kharj, Saudi Arabia; abomonef2010@gmail.com (A.W.A.)
[6] University of Tabuk, Department of Education and Psychology, College of Education and Arts, Tabuk, Saudi Arabia; malasmrai@ut.edu.sa; (M.A.A.)
[7] King Khalid University, Applied Management Program, Applied College at Muhyle Assir, Abha, Asir, Saudi Arabia; Aelseik@kku.edu.sa (A.A.)
[8] Beni-Suef University, Faculty of Tourism and Hotels, Hotels Management Department, Beni Suef, Egypt; mohamed.ali@fth.bsu.edu.eg (M.A.)

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Abstract: This study, which focuses on employees' non-green behavior, corresponds with global interest in green performance. The goal of this study was to examine how green transformational leadership (GTL) affects non-green behavior (NGB) in the hotel industry, with green work engagement (GWE) and green knowledge sharing (GKS) acting as mediators. Data was collected from full-time employees working in five-star hotels operating in Egypt. The PLS-SEM approach was used to analyze 390 valid responses collected by Warppls v.7. The findings revealed that GTL is positively associated with GWE; however, GTL is negatively associated with NGB. In addition, the results revealed that GWE and GKS negatively associated with NGB. Moreover, the negative link between GTL and NGB is found to be mediated by GWE and GKS. Theoretically, screening the literature in the hospitality field revealed that there hasn't been ample research conducted to explain how non-green behaviors might be avoided. The authors' research also reveals a knowledge gap in the mechanisms connecting green transformational leadership, workplace engagement, and knowledge sharing with non-green behavior in hotel businesses. The study shed light on how cutting-edge concepts like green transformational leadership, green work engagement, and knowledge sharing interact to anticipate and reduce non-green behavior in the hotel business. Practically, hotel management should formulate and deliver environmental training programs that would enhance green transformational leadership competencies, get employees committed to paying attention to the involvement in the green processes, and diminish the non-green behavior in hotel enterprises. This study makes a significant theoretical contribution by advancing the understanding of how GTL influences employees' non-green behavior, particularly within the context of five-star hotels in Egypt. By incorporating GKS and GWE as mediators, the study builds on existing leadership and sustainability literature, offering a more nuanced perspective on the mechanisms through which GTL fosters environmentally friendly behaviors. It expands the theoretical framework of GTL by highlighting the importance of knowledge dissemination and engagement in promoting sustainable practices among employees. Additionally, the study enriches the understanding of non-green behavior by linking it to green leadership and work engagement.

Keywords: green transformational leadership; employees non-green behavior; green work engagement, green knowledge sharing

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INTRODUCTION

Recently, there has been a growing awareness among companies about the deteriorating ecological environment, leading to an increased focus and involvement in management practices pertaining to environmental issues (Ahmad, 2015). The hotel business is widely recognized as a substantial source of water and power use, as well as sewage production (Chan et al., 2009). Management in the hospitality industry is compelled to implement environmentally sustainable practices as a response to challenges arising from the decline in biodiversity and resource shortages (Kim et

* Corresponding author

al., 2019; Merli et al., 2019; Rezapouraghdam et al., 2019). Adopting organizational strategies that focus on promoting a sustainable environment has become a vital approach for companies to gain an edge over competitors (Liu et al., 2015; Molina-Azorín et al., 2015). Today's astute customers exhibit heightened awareness about the effective utilization of energy and water resources and display a greater satisfaction and inclination towards patronizing hotels that adhere to environmentally sustainable practices (Kim et al., 2019; Merli et al., 2019; Wang et al., 2018). In this regard, Hilton Hotels, for example, has expressed its dedication to achieving a 50% reduction in its environmental impact by the year 2030. This objective will be pursued through the implementation of responsible sourcing rules, waste reduction measures, carbon footprint mitigation strategies, energy conservation efforts, and a decrease in water use (Hilton, 2022).

However, the successful execution of these strategies and attainment of environmental goals are contingent upon the employees' perception of environmental issues, active involvement, and subsequent behaviors (Boiral, 2009; Boiral et al., 2015; Del Brío et al., 2007; Zhang et al., 2014). Therefore, identifying the environmentally responsible activities of employees holds significance for both business effectiveness and environmental conservation (Karatepe et al., 2020). "Non-green behavior" (NGB) denotes employees' lack of involvement in pro-environmental activities (Paillé et al., 2019), while "green transformational leadership" (GTL) represents the conduct that leaders exhibit to inspire their subordinates to pursue green objectives and achieve superior outcomes (Chen & Chang, 2013; Mittal & Dhar, 2016). Hence, it is crucial to foster employees' pro-environmental habits through managerial interventions (Li et al., 2020a).

An examination of existing literature underscores the significance of adopting environmental approaches and fostering sustainable activities among hotel employees (Pham et al., 2019; Wang et al., 2018). Unfortunately, it is widely acknowledged that staff frequently participate in environmentally unfriendly actions (Ones & Dilchert, 2012; Paillé et al., 2019). However, existing empirical hospitality research has investigated the influence of GTL on several environmental outcomes, such as "corporate social responsibility" (CSR) for "small and medium-sized" (SMEs) restaurants located in ecologically sensitive island areas in North Cyprus (Tosun et al., 2022), hotels' green identity and creativity in Uttarakhand, India (Mittal & Dhar, 2016), 3-5-star hotels' green creativity and environmental performance in Bangladesh (Riva et al., 2021), large hotels' environmental innovation, CSR, and performance in Saudi Arabia (Sobaih et al., 2022b), and 4-5-star hotels' green innovation, CSR, and employees' green work engagement in Turkey (Çop et al., 2021), without explicitly examining the effect of GTL on employees' NGBs.

Moreover, there exists a dearth of research on the intermediary functions of GWE and GKS between GTL and hospitality employees' NGBs. Regarding the mediating role of GWE, previous empirical hospitality research has examined it in the impact of, for example, 4-5-star hotels' management dedication to the natural environment on staff's green creativity and cautious work-related environmentally friendly behaviors in Turkey and South Korea (Karatepe et al., 2022a), 4-5-star hotels' perceived green support on staff's work-related environmentally conscious conduct in Kaohsiung, Taiwan (Karatepe et al., 2022b; Agina et al., 2023), and 4-5-star hotels' GTL on green team resilience in Turkey (Çop et al., 2021; Elshaer et al., 2022). Specifically, only one empirical study, conducted by Karatepe et al. (2020), has provided clarification on how to prevent hotel employees' NGBs. However, excluding GTL, Karatepe et al.'s (2020) study investigated the intermediary function of work engagement for guest-contact employees between job uncertainty, absenteeism, and non-green conduct in the global 4-5-star hotels in Guangzhou, China. Considering the mediating role of GKS, prior empirical investigation in hospitality has studied it between several factors, such as inclusive leadership and green innovative service behavior for full-time employees and team leaders in Chinese 3-4-star hotels (Asghar et al., 2023), "environmentally-specific empowering leadership" (ESEL) and green creativity for full-time employees of Pakistani 3-5-star hotels (Badar et al., 2023; Beirat et al., 2025; Agina, 2020), and "green human resources management" (GHRM) and green competitive advantage for full-time employees of South Korean 4-5-star hotels (Kim et al., 2023).

Thus, to the best of the authors' knowledge, no previous empirical research has examined the influence of GTL on hotel employees' NGB or even tested the mechanism (i.e., the intermediary functions of GWE and GKS) through which GTL is associated with NGB. To address this previous literature gap, by drawing on Spence's (1973) signaling theory, "job demands-resources" (JD-R) theory (Demerouti et al., 2001), "conservation of resources" (COR) theory (Hobfoll, 2001), "social exchange" (SE) theory (Cropanzano & Mitchell, 2005), and the "stimulus-organism-response" (SOR) model (Jacoby, 2002; Mehrabian & Russell, 1974; Agina et al., 2017), this study develops and examines an integrative model that seeks to elucidate the influence of GTL on hotel employees' NGB in Egypt. Additionally, it explores the intermediary functions of GWE and GKS between GTL and NGB. The study's findings contribute to the existing empirical research on GTL, GWE, GKS, and employees' NGB in the hospitality industry. It offers insightful knowledge into the influence of GTL, GWE, and GKS on lowering employees' NGBs and proposes practical recommendations for hospitality organizations seeking to promote sustainability and reduce their environmental impact. This study's subsequent sections are as follows: Initially, the notional foundation and propositions formulation are elucidated. Next, the methodology is clarified. Subsequently, the findings are reported and discussed. Afterward, the theoretical and practical implications of the findings are explained. Lastly, the confines and areas for future investigation are highlighted.

2. Theoretical foundation and hypotheses formulation

Drawing on Spence's (1973) signaling theory, JD-R theory (Demerouti et al., 2001), COR theory (Hobfoll, 2001), SE theory (Cropanzano & Mitchell, 2005), and the SOR model (Jacoby, 2002; Mehrabian & Russell, 1974), this study proposes an integrative model, as depicted in Figure 1, of the influence of GTL on employees' NGB and the intermediary functions of GWE and GKS between GTL and NGB.

GTL and employees' NGB

While NGB pertains to the lack of involvement by employees in environmentally friendly practices instead of their deliberate involvement in detrimental actions as such (Paillé et al., 2019), GTL denotes the behavioral patterns exhibited by leaders that stimulate and encourage their subordinates to actively pursue green objectives and surpass their own expectations in order to achieve superior environmental performance (Chen & Chang, 2013; Mittal & Dhar, 2016).

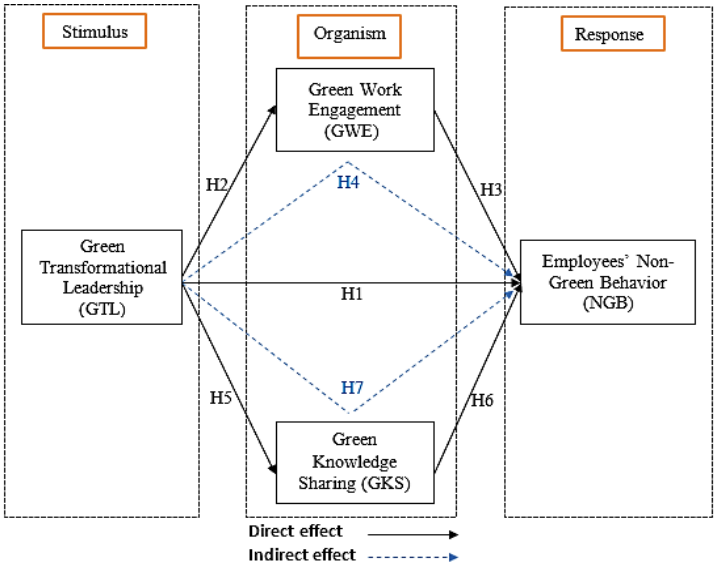

Figure 1. Hypothesized model

GTL can act as a remedy for employees' NGB. Generally, existing empirical studies in the hospitality field have consistently demonstrated the significance of GTL in improving key environmental outcomes. GTL improves CSR for SMEs restaurants located in ecologically sensitive island areas in North Cyprus (Tosun et al., 2022), employees' "organizational citizenship behavior for the environment" (OCBE) in Sharm El-Sheikh hotels in Egypt (Elshaer et al., 2022), 3-5-star hotels' GHRM and staff's environmentally friendly practices in India (Sachdeva & Singh, 2023), employees' environmental value congruence and environmental work-related and work-unrelated activities in six Indian hotels (Agrawal & Pradhan, 2023), employees' environmentally friendly conduct in Pakistani hotels (Xu et al., 2022) and Chinese hospitality corporations (Zheng et al., 2023), staff's work-related and environmentally conscious actions and green performance in food firms in Saudi Arabia (Sobaih et al., 2022a), hotels' green identity and creativity in Uttarakhand, India (Mittal & Dhar, 2016), 3-5-star hotels' green creativity and performance in Bangladesh (Riva et al., 2021), large hotels' environmental innovation, CSR, and performance in Saudi Arabia (Sobaih et al., 2022b), and 4-5-star hotels' employees' GWE in Turkey (Çop et al., 2021). Moreover, Elshaer et al. (2024) examined how leadership styles influence pro-environmental behavior among hotel staff in Egypt, highlighting the importance of cultural and operational dynamics specific to the local context.

The signaling theory (Spence, 1973) justifies the influence of GTL on employees' NGB. A sender communicates information, while a receiver interprets it (Connelly et al., 2011). Company green initiatives and practices serve as indicators of the intentions and priorities set by managerial positions, indicating investment in green knowledge and sustainability, while positive interpretations of these signals lead to employees' environmentally friendly tasks and active environmental conservation (Karatepe et al., 2022a). According to Brown & Kasser (2005), transformational leaders that exhibit environmentally conscious behaviors have the potential to influence the behavior of their followers, as they are perceived as role models. The integration of sustainable practices by a leader within the workplace has the potential to inspire and encourage their followers to adopt similar behaviors (Sachdeva & Singh, 2023). When leaders in the work environment adopt green behaviors, it has a compelling influence on their subordinates, as it facilitates the interchange of environmental values, promotes the utilization of sustainable practices, and encourages the development and implementation of strategies to address environmental problems (Graves et al., 2013). A leader's mindset on environmental damage avoidance, through relevant work and ambitious persuasion, has a significant impact on subordinates' willingness to carry out environmental protective actions (Cordano & Frieze, 2000), hence attenuating employees' NGB. Consequently, an increase in GTL is anticipated to result in a decrease in employees' NGB.

H1: GTL significantly attenuates employees' NGB.

The mediating role of GWE

GWE denotes the extent of employees' commitment and devotion to their obligations to environmentally sustainable work practices. This encompasses their inclination to exert effort in promoting sustainability and their extent of engagement in duties related to environmentally friendly work (Aboramadan, 2022). GWE signifies a characteristic that comprises a strong and active staff's commitment to activities linked to environmental sustainability (Çop et al., 2021). It is defined by qualities such as high levels of energy, mental flexibility, diligence, dedication, excitement, pride, motivation, and active involvement

(Schaufeli et al., 2002; Xanthopoulou et al., 2013). According to Schaufeli et al. (2006), this phenomenon is distinguished by a high level of absorption and the capacity to maintain concentration on tasks connected to environmental concerns. The significance of leaders in cultivating engagement among their followers is widely acknowledged by both scholars and professionals. Generally, prior empirical hospitality research has shown that leadership is a key predictor of employees' work engagement. While it diminishes under abusive supervision in 4-5-star hotels in Accra, Ghana (Ampofo, 2021), work engagement among employees flourishes under high ratings for supervisors' warmth, competence, and morality in US restaurants (Orlowski et al., 2021; Khairy et al., 2024), high ratings for supervisors' motivating language in hotels in Bangkok and Phuket, Thailand (Rabiul et al., 2022), high quality leader-member exchange in a prominent luxurious hotel in southern China (Li et al., 2012), humble leadership in hospitality organizations in Jordan (Al Hawamdeh, 2022), servant and authentic leadership styles in 5-star hotels in Antalya, Turkey (Kaya & Karatepe, 2020), empowering leadership in five upscale hotels in Beijing, China (Wen et al., 2023), and paradoxical leadership in Pakistani hotels (Kundi et al., 2023). Furthermore, transformational leadership encourages greater work engagement among employees. This is the case, for example, in 3-5-star chain hotels in Spain (Buil et al., 2019), luxury hotels in Italy (Aftab et al., 2022), and 5-star hotels in Saudi Arabia (Abolnasser et al., 2023). Specifically, GTL nurtures employees' GWE in 4-5-star hotels in Turkey (Çop et al., 2021).

The relationship between GTL and GWE is elucidated via the lens of the JD-R theory (Çop et al., 2021; Demerouti & Bakker, 2006). The JD-R theory (Demerouti et al., 2001), delineates two key operational factors inside the workplace. Firstly, job demand refers to the exertion of physical or mental effort required in performing tasks. Secondly, job resources encompass elements that mitigate physiological and psychological burdens, establish functional stability, and foster personal development. The presence of job resources might serve as an indication of the aspects that promote work engagement (Bakker & Demerouti, 2008). Job resources encompass several elements such as voice, coaching, supervision, work diversity, social support, prospects, growth, and avenues for learning. These resources are organized and facilitated by transformational leaders (Çop et al., 2021; Demerouti et al., 2001; Alhemimah et al., 2024; Abou Kamar et al., 2023). Recent findings by Suliman et al. (2023) emphasized the role of transformational leadership in shaping environmental engagement among frontline employees in five-star hotels in Egypt.

Non-green work behaviors are unproductive habits (Ones & Dilchert, 2012) that jeopardize an organization's commitment to a sustainable environment (Paillé et al., 2019). The firm's green goals may be compromised by non-green practices, which can be exacerbated by emotional weariness (Karatepe et al., 2021b; Yan et al., 2020; Yu et al., 2020; Zheng et al., 2023). As per the COR theory, people tend to safeguard their limited resources, but when resources are threatened, undesirable behaviors, like non-green behaviors, may result (Hobfoll, 2001).

Work engagement can help offset such harmful behaviors (Karatepe et al., 2020). Consistent with the JD-R theory, motivation has an influence on work performance (Bakker & Demerouti, 2017). Generally, staff who are actively involved in their job have the drive and excitement necessary to succeed (Bailey et al., 2017; Orlowski et al., 2021; Ozturk et al., 2021). Prior studies have demonstrated that employees' involvement has a positive impact on both their work-related and non-work performance (Karatepe et al., 2018). Specifically, highly engaged staff are more inclined to display pro-environmental behaviors because they find their work to be inspiring and important, contribute to the business by doing everyday activities in an ecologically responsible manner, and take initiative to complete their environmental and green chores (Ababneh, 2021; Khairy et al., 2025; Aboramadan, 2022; Karatepe et al., 2021a; Karatepe et al., 2022a, b).

In line with the SE theory, highly engaged staff are more inclined to have strong and reliable ties with their employers, leading to positive outcomes in terms of their jobs (Cropanzano & Mitchell, 2005; Saks, 2006). By doing so, employees may be encouraged to participate in environmentally conscious activities and commit to eco-friendly projects, leading to promoting the idea of environmentally friendly conduct and promoting organizational and community sustainability (Aboramadan, 2022; Luu, 2019). Positive work engagement encourages employees' voluntarily pro-environmental conduct (Raza et al., 2021). In other words, people who work because of positive reciprocal interactions exhibit a low level of non-green conduct (Karatepe et al., 2020), which is crucial for businesses like hotels that make investments in green environments (Kim et al., 2019; Pham et al., 2019; IRAWAN et al.,2024).

The SOR model provides theoretical reasoning to support the notion that GWE's mediating role could clarify the process by which GTL affects employees' NGB. The SOR model (Jacoby, 2002; Mehrabian & Russell, 1974) posits that an ambient cue (a stimulus) exerts influence on the internal cognitive and emotional intermediary state of an individual (organism) that intercedes between the stimulus and the manifestation of an individual's approach or avoidance behavior (response). Overall, previous empirical hospitality studies proved the intermediary function of GWE. GWE has played a crucial role as a mediator in the influence of, for example, 4-5-star hotels' GTL on green team resilience in Turkey (Çop et al., 2021), 4-5-star hotels' management dedication to the natural environment on staff's green creativity and cautious work-related environmentally friendly behaviors in Turkey and South Korea (Karatepe et al., 2022a), and 4-5-star hotels' perceived green support on staff's work-related environmentally conscious conduct in Kaohsiung, Taiwan (Karatepe et al., 2022b). Thus, considering the SOR model, this research suggests that a green transformational leader, who effectively inspires and motivates their followers to actively pursue environmental objectives and exceed their own expectations (stimulus), can enhance employees' engagement and commitment towards their responsibilities related to environmentally sustainable work practices (organism). This, in turn, reduces employees' non-green work practices that undermine an organization's commitment to environmental sustainability (response). Based on the a forementioned reasoning, the following hypotheses are posited:

H2: GTL significantly promotes GWE.

H3: GWE significantly diminishes employees' NGB.

H4: GWE mediates the influence of GTL on employees' NGB.

The mediating role of GKS

GKS encompasses activities that smooth the exchange of both explicit and implicit aspects of environmentally sustainable knowledge for the purpose of environmental protection among hotel employees (Kim et al., 2023). In light of its significance, prior empirical investigation in hospitality has studied how to boost full-time employees' GKS by, for example, inclusive leadership in Chinese 3-4-star hotels (Asghar et al., 2023), ESEL in Pakistani 3-5-star hotels (Badar et al., 2023), and GHRM in South Korean 4-5-star hotels (Kim et al., 2023).

Generally, GKS among full-time employees in the hospitality industry is significantly influenced by inclusive leadership, ESEL, and GHRM (Asghar et al., 2023; Badar et al., 2023; Kim et al., 2023). Inclusive leadership, characterized by openness, accessibility, and providing social and emotional support, fosters a positive work environment where employees feel respected and valued, leading to increased GKS (Asghar et al., 2023; Mulyadi et al., 2024). ESEL further encourages GKS by explicitly empowering employees to participate in environmentally related decision-making, providing them with the autonomy and resources to share green knowledge and ideas (Badar et al., 2023; Yiamjanya, 2024; Agina et al., 2025). GHRM practices, such as green training programs and performance appraisals that consider eco-friendly behavior, equip employees with the necessary knowledge and motivation to engage in GKS (Kim et al., 2023). Overall, these leadership styles and management practices collectively create a workplace culture that values environmental sustainability and encourages the open exchange of green knowledge among employees.

Existing empirical hospitality research has investigated the effect of GKS on, for example, green creativity and environmental performance for managerial personnel of 3-5-star hotels in Bangladesh (Riva et al., 2021) and OCBE for operational-level employees of the Ghanian hotel sector (Andoh et al., 2024).

Generally, GKS is a critical factor that influences both green creativity and environmental performance (Andoh et al., 2024; Yakupova, 2024; Riva et al., 2021). When organizational members, including managers, actively share their green knowledge, it creates a collective understanding of environmental issues and solutions. Riva et al. (2021) emphasized that managers with a strong understanding of environmental concerns can effectively promote green initiatives and strategies within their organizations. By fostering a culture of knowledge exchange, hotels can encourage employees to think creatively and develop innovative solutions for improving environmental performance.

Furthermore, Andoh et al. (2024) emphasize that GKS leads to the development of organizational green culture, which in turn encourages employees to engage in OECB. OECB represents voluntary actions taken by employees to promote environmental sustainability within the organization. Through GKS, employees gain awareness of green expectations and best practices, leading to the establishment of shared green values and norms.

This collective understanding of environmental responsibility encourages employees to go above and beyond their formal duties to contribute to the organization's environmental performance.

The SOR model offers a theoretical framework that elucidates how GKS mediates the relationship between GTL and employees' NGB. The SOR model (Jacoby, 2002; Mehrabian & Russell, 1974) asserts that an ambient cue (stimulus) shapes the inner cognitive and emotional intermediary condition of a person (organism), which mediates the relationship between the stimulus and the resulting approach or avoidance behavior (response). Generally, extant empirical research proved the intermediary role of GKS. GKS has a significant mediating role in the effect of, for instance, GHRM on green service behaviors for frontline employees of Bangladeshi banking industry (Rubel et al., 2021), green leadership on sustainable performance of Pakistan's manufacturing SMEs (Khan et al., 2023), eco-centric leadership on pro-environmental behaviors for employees working at the lower cadre (i.e., sweepers and cleaners) in Pakistani hospitals (Hasan et al., 2024), and GHRM on green self-efficacy for Bangladeshi university staff (Miah et al., 2024).

Extant empirical studies (Hasan et al., 2024; Singtuen & Gałka,2024; Khan et al., 2023; Miah et al., 2024; Rubel et al., 2021) generally support the mediating role of GKS by establishing a logical link between organizational initiatives and individual behaviors. By disseminating environmental knowledge, organizations equip employees with the understanding and awareness needed to make environmentally responsible decisions and engage in pro-environmental behaviors. GHRM practices, as explored by Rubel et al. (2021) and Miah et al. (2024), create a framework for promoting environmental awareness and providing employees with the necessary knowledge and skills to act in an environmentally responsible manner. This knowledge sharing, in turn, empowers employees to translate organizational goals into individual actions, whether it's through green service behaviors or more general pro-environmental behaviors. Similarly, Khan et al.'s (2023) findings on green leadership and sustainable performance highlight the importance of leaders actively fostering a knowledge-sharing environment to achieve organizational sustainability goals.

Hasan et al. (2024) further corroborate this, suggesting that eco-centric leadership indirectly influences pro-environmental behaviors by promoting GKS. Moreover, Miah et al. (2024) demonstrated that GKS not only directly impacts behavior but also contributes to employees' green self-efficacy, which further reinforces their commitment to pro-environmental actions. Therefore, GKS isn't simply a passive transfer of information but an active process that empowers individuals and aligns their actions with organizational sustainability objectives. Overall, GKS serves as a crucial mechanism by which GHRM practices and green leadership can affect favorable environmental outcomes.

By promoting the dissemination and exchange of environmental sustainability knowledge, organizations can enhance environmental awareness and responsibility among employees, leading to improved green behaviors and sustainable performance. Hence, in light of the SOR framework, this research proposes that a green transformational leader, who successfully inspires and motivates their subordinates to actively chase environmental objectives and surpass their own expectations (stimulus), can boost employees' exchange of both explicit and implicit aspects of environmentally sustainable

knowledge (organism). This, subsequently, decreases employees' non-green work activities that weaken a hotel's commitment to environmental sustainability (response). In light of the preceding rationale, the following hypotheses are proposed:

H5: GTL significantly boosts GKS.

H6: GKS significantly reduces employees' NGB.

H7: GKS mediates the effect of GTL on employees' NGB.

MATERIAL AND METHODS

Questionnaire design and study measures

The data required was gathered via a structured survey as part of a quantitative research approach. A survey was utilized to address green transformational leadership in hotel businesses (the five-star hotels) and its impact on green work engagement, green knowledge sharing, and non-green behavior. A two-part survey is included. In the first part, we covered employee profiles, such as gender, age, education, and work experience. In the second part, the three explored concepts were analyzed. A five-point Likert scale was used to evaluate all items. To avoid socially desirable responses resulting from self-reporting, we followed Donaldson et al. (2002) advice, and asked participants at the end of the survey if they felt worried that their answers may jeopardize their employment, to be excluded. Green transformational leadership was measured by a 6-item scale adapted from Chen & Chang (2013). In addition, non-green behavior was assessed by a 5-item scale developed by Paillé et al. (2019). Moreover, green work engagement was evaluated by a 6-item scale adapted from Aboramadan (2022). Finally, five items scale was adopted from Wong (2013); Rubelet al. (2021) to measure green knowledge sharing. A comprehensive measurement scale is presented in Appendix (A).

Sample and data collection procedures

The current research population consists of full-time staff working at five-star hotels in Egypt's Greater Cairo region. Five-star hotels represent the highest tier of service and operational standards within the hospitality industry. These establishments typically employ a large, diverse workforce and operate under structured management systems, making them ideal environments for studying organizational behaviors, leadership practices, and sustainability initiatives.

Their complex operational frameworks and strong brand reputations also necessitate strategic investments in employee engagement, innovation, and corporate social responsibility. Moreover, five-star hotels are more likely to implement and report advanced environmental and HRM practices, thus providing a rich context for exploring variables such as green transformational leadership, work engagement, and sustainability performance. Focusing on this segment enhances the generalizability of findings to other high-standard hospitality settings while ensuring the relevance of insights to both academia and industry. The Egyptian Ministry of Tourism (2018) reported that there were a total of 30 hotels with a 5-star rating in the Greater Cairo region of Egypt. A judgmental sampling technique was used when selecting the five-star hotels.

This sampling approach is especially useful when the researcher does not have the funds or time to conduct a large-scale survey. The convenience sampling method was also employed to obtain data from these organizations' staff members (those who volunteered to participate in the research). Given the wide geographical scope of this study and the distribution of five-star hotels across Egypt, the convenience sampling method was utilized. After making phone calls to human resources departments to obtain permission to visit and distribute the questionnaire on their premises, 600 questionnaires were distributed to the enterprises under investigation. Only 390 valid forms were gathered from 25 five-star hotels, resulting in a 65% response rate. The current study uses the Cochran (1963) sampling equation to produce a representative sample that equals ≥385 responses for large populations when a list of populations, as in the case of the current study, cannot be obtained. This is because there are no official data that reflect the total number of employees in Egypt's five-star hotels, either in total or by region. Cochran's (1963) sampling equation was included in the manuscript as follows:

$$n_0 = \frac{Z^2 pq}{e^2} = \frac{(1.96)^2(.5)(.5)}{(.05)^2} = 385$$

Where n_0 is the sample size, Z^2 is the abscissa of the normal curve that cuts off an area a at the tails (1 - a equals the desired confidence level, e.g., 95%), *e* is the desired level of precision, *p* is the estimated proportion of an attribute that is present in the population, and *q* is 1-p.

Data analysis

PLS-SEM is widely utilized as an analytical instrument across various disciplines, including the study of tourism and hospitality (Amaro & Duarte, 2015). Analyzing complex structural models that establish connections between multiple variables through both direct and indirect pathways is facilitated by this method (Manley et al., 2020).Hence, this study utilized the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach with WarpPLS software 7.0 to analyze the measurement and structural model and to assess the research hypotheses (Kock, 2021).

This study used WarpPLS version 7.0 for Partial Least Squares Structural Equation Modeling (PLS-SEM), a choice that aligns well with the complex constructs studied, such as digital dynamic capabilities, green knowledge management, and green technology innovation. Although SmartPLS 3 and 4 are commonly used for PLS-SEM, WarpPLS offers unique advantages that enhance the study's analysis (Kock, 2017, 2019; Singh et al., 2024).

First, WarpPLS can model both linear and nonlinear relationships, which is crucial for understanding the complex, interactive nature of sustainability-oriented constructs and digital transformation dynamics.

This feature allows for a more comprehensive analysis, capturing potential nonlinearities that linear models may miss. Additionally, WarpPLS provides a broader array of model fit indices, such as the Average Path Coefficient (APC), Average R-squared (ARS), Tenenhaus GoF, and Full Collinearity VIFs. These indices, not available in SmartPLS, strengthen model evaluation by validating both explanatory power and predictive relevance.

Moreover, WarpPLS is particularly effective with small to medium-sized samples, which are common in applied organizational research. This capability ensures accurate estimations even when respondent access is limited, making it ideal for sustainability and innovation studies. WarpPLS also includes features that detect and adjust for statistical biases like common method bias, suppression effects, and Simpson's paradox, which further strengthens the methodological validity of the findings. Another advantage is its ability to model complex relationships, including mediation, with direct outputs for interaction terms, effect sizes, and p-values, essential for analyzing conditional effects in this study.

Finally, WarpPLS's robustness to non-normal data distributions makes it especially suitable for research in the social and environmental sciences, where latent constructs and skewed data are common.

RESULTS

Participant's profile

Table 1 and Figure 2 summarize the demographic profile of the respondents, including gender, age distribution, educational background, and years of work experience. The majority was male, held a bachelor's degree, and had between 2 to 5 years of work experience.

Table 1. Participants' profile (n=390)

		Number	%
Gender	Male	265	67.9
	Female	125	32.1
Age	< 30 years	98	25.1
	30 : < 40 years	104	26.7
	40 :50 years	98	25.1
	>50	90	23.1
Education	High schools/institute	83	21.3
	Bachelor	265	67.9
	Master/PhD	42	10.8
Work experience	< 2 years	92	23.6
	2:5 years	144	36.9
	6:10 years	112	28.7
	>10 years	42	10.8

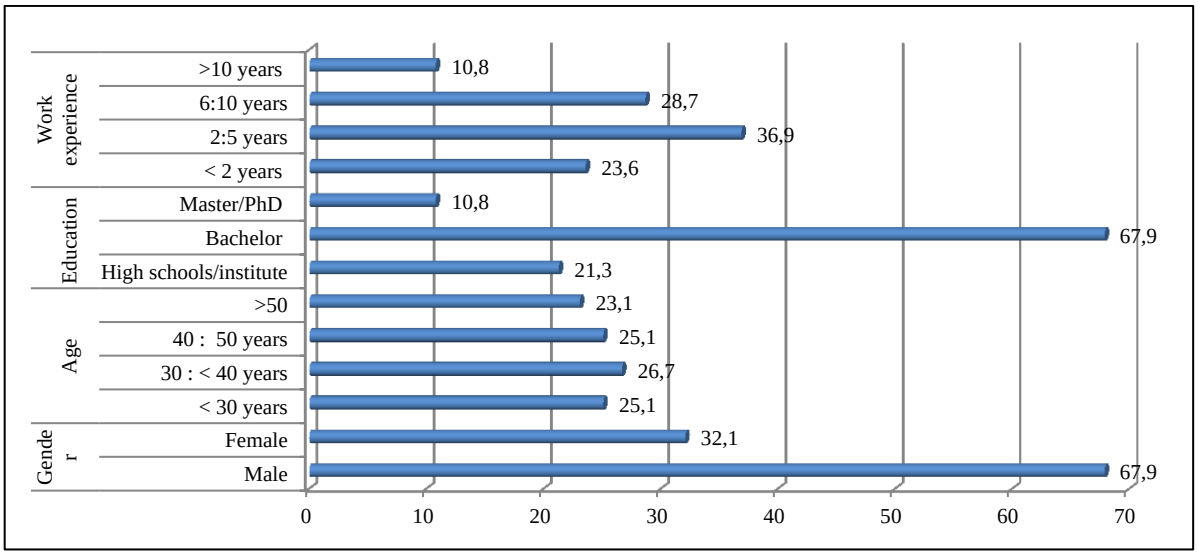

Figure 2. Participants' profile in percentage

4.1. Reliability and validity

A confirmatory factor analysis was conducted, as shown in Table 2. The item loadings were estimated and varied from 0.626 to 0.943. Hair et al. (2010) deemed factor loading values greater than 0.5 as satisfactory. Table 1 demonstrates that the Cronbach's alpha and composite reliability values for all variables above 0.7, indicating a high level of reliability. Moreover, the scales' validity has been shown by satisfying the Hair et al. (2020) requirements, as evidenced by the AVE values over 0.5. Furthermore, variance inflation factors (VIFs) for each latent variable in a model are estimated, suggesting that it is free of common method bias since the VIF values are ≤3.3 (Kock, 2015).

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

	Item loading	CR	CA	AVE	VIF
Non-green behavior (NGB)	-	0.892	0.848	0.625	1.106
NGB.1	0.756				
NGB.2	0.663				
NGB.3	0.837				
NGB.4	0.835				
NGB.5	0.847				
Green transformational leadership (GTL)	-	0.890	0.849	0.578	1.435
GTL.1	0.582				
GTL.2	0.799				
GTL.3	0.790				
GTL.4	0.862				
GTL.5	0.860				
GTL.6	0.621				
Green work engagement (GWE)	-	0.903	0.867	0.612	3.123
GWE.1	0.825				
GWE.2	0.881				
GWE.3	0.857				
GWE.4	0.742				
GWE.5	0.806				
GWE.6	0.531				
Green knowledge sharing (GKS)	-	0.911	0.877	0.672	2.726
GKS.1	0.818				
GKS.2	0.786				
GKS.3	0.841				
GKS.4	0.793				
GKS.5	0.857				
"CR: Composite reliability; CA: Cronbach's alpha; AVE: average variance extracted; VIF: variance inflation factors "					

In addition, as stated by Franke & Sarstedt (2019), "the correlation between two latent variables must be significantly less than unity to prove discriminant validity, and the AVE value for each variable must be greater than the greatest common value". According to the results in Table 3, the study model has successfully demonstrated discriminant validity.

Table 3. Discriminant validity results

	NGB	GTL	GWE	GKS
Non-green behavior (NGB)	0.791	-0.260	-0.041	-0.112
Green transformational leadership (GTL)	-0.260	0.761	0.493	0.377
Green work engagement (GWE)	-0.041	0.493	0.782	0.691
Green knowledge sharing (GKS)	-0.112	0.377	0.691	0.820

The findings to confirm validity are good, as shown by the HTMT for validity, which was also calculated (Table 4), where all values were less than 0.90.

Table 4. HTMT for validity

HTMT ratios "good if < 0.90, best if < 0.85"	NGB	GTL	GWE	GKS
Non-green behavior (NGB)				
Green transformational leadership (GTL)	0.306			
Green work engagement (GWE)	0.100	0.625		
Green knowledge sharing (GKS)	0.127	0.443	0.896	

Quality and model fit indices for the research model

Validation of the model's fit is performed prior to hypothesis testing. All model fit and quality index findings are in accordance with the requirements given by Kock (2021) (Appendix B).

The structural model and hypotheses testing results

Results of the structural model and hypotheses testing are shown in Figure (3) and Table (4).Findings indicated that green transformational leadership (GTL) negatively affects hotel employees non-green behavior (NGB) (β=-0.29, P<0.01). This means that GTL decreases hotel employees' NGB. Therefore, H1 is supported. In addition, GTL positively affects green work engagement (GWE) (β=0.56, P<0.01) and green knowledge sharing (GKS) (β=0.44, P<0.01). This means that when GTL increase GWE and GKS tend to be higher. H2 and H5 are therefore supported. Moreover, hotel employees' NGB negatively affected by GWE (β=-0.09, P=0.03) and GKS (β=-0.16, P<0.01). This means that when GWE and GKS increase NGB tends to be lower. H3 and H6 are therefore supported.

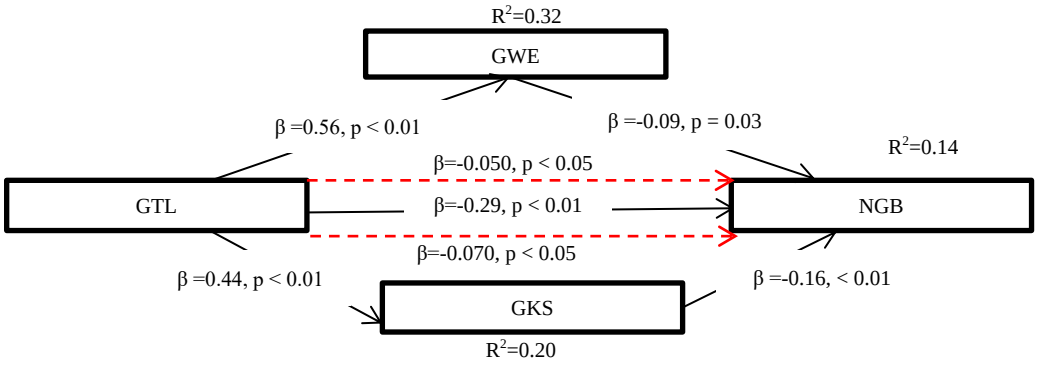

Figure 3. Final model of the study

Lastly, to explore the GTL→GWE→NGB, "Bootstrapped Confidence Interval" analysis was performed (Table 4). For the GWE mediating effect, the indirect effect's Std. β=-0.050 (0.560×-0.090) was significant (p-value <0.05), which had a t-value of -2.191. Furthermore, "95% Bootstrapped Confidence Interval": (LL= -0.095, UL= -0.005), does not intersect a zero point in between, which confirms mediation. Therefore, there was statistically significant evidence for GWE's role as a mediator in GTL→NGB relationship. Thus, H4 is supported. Lastly, to explore the GTL→GKS→NGB, "Bootstrapped Confidence Interval" analysis was performed (Table 4). For the GKS mediating effect, the indirect effect's Std. β=-0.070 (0.440×-0.160) was significant (p-value <0.05), which had a t-value of -3.061. Furthermore, "95% Bootstrapped Confidence Interval": (LL= -0.115, UL= -0.025), does not intersect a zero point in between, which confirms mediation. Therefore, there was statistically significant evidence for GKS's role as a mediator in GTL→NGB relationship. Thus, H7 is supported.

Table 5. Mediation analysis "Bootstrapped Confidence Interval"

Hypothesis 4	Path a GTL→GWE	Path b GWE-NGB	Indirect Effect	SE	t-value	95% LL	95% UL	Decision
GTL→GWE→NGB	0.560	-0.090	-0.050	0.023	-2.191	-0.095	-0.005	Mediation
GTL→GKS→NGB	0.440	-0.160	-0.070	0.023	-3.061	-0.115	-0.025	Mediation

DISCUSSION

The objective of this study is to analyze how green transformational leadership (GTL) influences the non-green behavior (NGB) of hotel employees, specifically by investigating the role of green work engagement (GWE) and green knowledge sharing (GKS) as mediators. Our findings are interesting since previous researchers have urged for a more in-depth investigation of employees' non-green behavior (e.g., Paillé et al., 2019; Tandon et al., 2023), and we can confirm a direct negative relationship between GTL, GWE, and GKS with NGB. Also, we can confirm the indirect effect of GWE and GKS in the GTL→ NGB relationship. A leader's green conduct at work, according to social psychology literature, inspires subordinates to comply with and follow it allows them to share green values, promotes sustainability, and expands and enforces concepts for addressing environmental problems (Graves et al., 2013; Alsetoohy et al., 2022). On the basis of this idea, it is thought that transformational leaders who exhibit environmentally friendly behaviors can influence the behavior of their followers because organizational leaders are viewed as role models (Brown & Kasser, 2005; Sachdeva & Singh, 2023), thereby reducing non-green behavior at work. The notion of transformational leadership supports the beneficial relationship between GTL and GWE and claims that when leaders incorporate green practices in the workplace, they inspire followers to do the same.

According to the theory, transformational leaders can inspire and empower their people to effect good change and improve green practices. This, in turn, can have a positive impact on the organization's green performance (Graves et al., 2013), increasing GWE while decreasing NGB. In addition, employees who are more engaged because of transformational leadership, according to the social exchange theory, are more likely to have secure and high-quality connections with their work, resulting in better work attitude (Cropanzano & Mitchell, 2005; Saks, 2006). Employees may be encouraged to participate in eco-friendly activities and commit to green initiatives as a result of this, supporting the concept of green behavior and organizational sustainability (Aboramadan, 2022; Luu, 2019), this in turn, could decreases non-green behavior.

Moreover, GTL can play a pivotal role in reducing non-green behavior by promoting green knowledge sharing within an organization (Elshaer et al., 2024). Leaders who practice GTL encourage the dissemination of knowledge and expertise related to sustainability, which in turn inspires employees to adopt eco-friendly behaviors. Through fostering open communication and collaboration, GTL helps develop a shared understanding of environmental issues and the importance of sustainable practices among employees. Additionally, GTL supports skill development by providing training programs and workshops that enhance employees' ability to implement sustainable practices effectively. This leadership approach also creates a positive organizational climate that values sustainability, motivating employees to engage in environmentally friendly behaviors. Green knowledge sharing acts as a mediator in this process, reducing non-green behavior (Khan et al., 2022) by enabling employees to identify and correct unsustainable practices. It also enhances environmental awareness, increasing employees' understanding of the impact of their actions on the planet. Furthermore, by sharing best practices and innovative ideas, GKS contributes to improved organizational performance, helping the organization achieve its sustainability goals.

Theoretical implication

This manuscript makes a significant theoretical contribution by advancing the understanding of how GTL influences employees' non-green behavior, particularly within the context of five-star hotels in Egypt. By incorporating GKS and GWE as mediators, the study builds on existing leadership and sustainability literature, offering a more nuanced perspective on the mechanisms through which GTL fosters environmentally friendly behaviors.

It expands the theoretical framework of GTL by highlighting the importance of knowledge dissemination and engagement in promoting sustainable practices among employees. Additionally, the study enriches the understanding of non-green behavior by linking it to green leadership and work engagement, proposing that GTL not only inspires employees to adopt sustainable practices but also encourages the sharing of green knowledge and fosters an organizational environment that supports sustainability. This research contributes to the growing body of literature on green leadership by offering empirical evidence of the impact of GTL on sustainability outcomes and providing a theoretical basis for the development of strategies aimed at reducing non-green behaviors in organizations. The inclusion of GKS and GWE as mediators also introduces new pathways for understanding how green leadership influences organizational sustainability, opening up opportunities for further exploration in different industries and contexts.

Practical implications

This study provides several actionable recommendations for hospitality managers aiming to foster green transformational leadership and improve green competitiveness within their organizations. Based on the findings of our study, we propose the following practical strategies:

First, training programs for developing green transformational leadership should target specific competencies that enable leaders to effectively promote sustainability. These programs should focus on articulating a clear and compelling sustainability vision, providing individualized support to employees' green initiatives, and stimulating innovative thinking related to environmental challenges. Practical interventions may include experiential learning workshops on sustainability leadership, one-on-one coaching for hotel managers, and scenario-based simulations that reflect real-world sustainability dilemmas in hotel operations. These interventions can equip leaders with the tools to drive green behavior at the organizational level.

Second, to operationalize green competitiveness, hotels should embed sustainability into daily practices through systematic strategies. Managers can integrate sustainability indicators into departmental performance evaluations, foster interdepartmental collaboration by forming green committees, and implement digital platforms that facilitate the sharing of green knowledge. These measures will help create a culture where sustainability becomes ingrained in all levels of the organization, driving long-term competitive advantages in an environmentally conscious market.

Third, human resource management practices play a crucial role in ensuring sustainable behavior. Hotels should revise their recruitment and selection criteria to prioritize candidates who demonstrate a commitment to environmental sustainability. Additionally, onboarding programs should include modules on expected green behaviors, and recognition and reward systems should be established to celebrate employees who consistently contribute to sustainability efforts. These HR strategies will foster a more engaged workforce and enhance green work engagement, ensuring sustainability is not just a managerial priority but a shared organizational value. Lastly, to maintain behavioral consistency and ensure accountability, hotels should implement monitoring systems for tracking non-green behaviors. Rather than relying solely on punitive measures, we recommend using constructive feedback mechanisms and establishing peer coaching programs that encourage reflection and behavioral adjustments. By fostering a psychologically safe environment, employees will be more motivated to align their behaviors with sustainability goals, thus strengthening the organization's green competitiveness.

Limitations and further research

This study has several limitations that should be acknowledged. First, the focus on five-star hotels in Egypt may limit the generalizability of the findings to other industries or regions, as the dynamics of the hospitality sector in Egypt may differ from other contexts. Additionally, if the study relies on a cross-sectional design, it restricts the ability to draw causal conclusions about the relationships between GTL, GKS, GWE, and non-green behaviors. The use of self-reported data could introduce biases, such as social desirability bias, potentially affecting the accuracy of the findings.

Furthermore, while the sample size may be adequate within this specific context, future research could benefit from a more diverse sample that includes different types of hotels to provide a broader understanding. Moreover, the study might not account for all potential confounding variables, such as organizational culture, local environmental policies, or economic factors, which could influence sustainability behaviors. For future research, several avenues could be explored to build on these findings. Cross-cultural studies could provide insights into how GTL influences green behaviors in different countries or cultural contexts, helping to understand the global applicability of the findings. Longitudinal research would allow for a deeper exploration of how GTL impacts green behaviors over time, providing valuable information on the long-term effectiveness of green leadership practices. Additionally, research could examine the role of other organizational factors, such as corporate social responsibility initiatives, in shaping sustainable behaviors. A mixed-methods approach combining quantitative surveys with qualitative interviews could offer a more nuanced understanding of employees' experiences with GTL and GKS. Future studies could also investigate additional mediators and moderators, such as intrinsic motivation or leadership styles, to further explain how GTL influences non-green behavior. Exploring the role of technology in supporting sustainability initiatives and conducting studies across different industries could offer further insights into how GTL can be leveraged to reduce non-green behaviors in various organizational settings.

Appendix (A): Measurement Scales

Green transformational leadership (GTL) Chen & Chang (2013).
GTL.1.The leader inspires the organization members with the environmental plans.
GTL.2.The leader provides a clear environmental vision for the members to follow.
GTL.3. The leader gets the organization members to work together for the same environmental goals.
GTL.4. The leader encourages the organization members to achieve the environmental goals.
GTL.5. The leader acts by considering the environmental beliefs of the organization members.
GTL.6. The leader stimulates the organization members to think about green ideas.
Green work engagement (GWE) Aboramadan (2022).
GWE.1.My environmental-related tasks inspire me
GWE.2. I am proud of the environmental work that I do
GWE.3.I am immersed in my environmental work
GWE.4.I am enthusiastic about my environmental tasks at my job
GWE.5.I feel happy when I am working intensely on environmental tasks
GWE.6. With environmental tasks at my job, I feel bursting with energy.
Non-green behavior (NGB) Paillé et al. (2019)
NGB.1. In the workplace, I do not care about the consumption of water or electricity.
NGB.2. At work, I let others worry about environmental protection.
NGB.3. In my work, ask my colleagues to prioritize productivity and not the environment.
NGB.4. Whenever I have the chance, I tell my coworkers that environmental performance is a waste of time.
NGB.5. I do not apply environmental standards that could slow my pace of work.
Green knowledge sharing (GKS) Wong(2013) and Rubelet al. (2021)
GKS.1. I always share green knowledge obtained from newspapers, magazines, journals, television and other sources.
GKS.2. I enjoy sharing environment-friendly knowledge with my colleagues.
GKS.3. In my organization, people share expertise from work experience with each other.
GKS.4. Sharing my knowledge with colleagues is pleasurable.
GKS.5. I believe that knowledge sharing can benefit all parties involved.

Appendix (B): Model fit and quality indices

	Assessment	**Criterion**	Supported/Rejected
Average path coefficient (APC)	0.310, P<0.001	P<0.05	Supported
Average R-squared (ARS)	0.217, P<0.001	P<0.05	Supported
Average adjusted R-squared (AARS)	0.213, P<0.001	P<0.05	Supported
Average block VIF (AVIF)	1.894	acceptable if ≤ 5, ideally ≤ 3.3	Supported
Average full collinearity VIF (AFVIF)	2.098	acceptable if ≤5, ideally ≤3.3	Supported
Tenenhaus GoF (GoF)	0.367	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

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REFERENCES

Ababneh, O. M. A. (2021). How do green HRM practices affect employees' green behaviors? The role of employee engagement and personality attributes. *Journal of Environmental Planning and Management*, *64*(7), 1204–1226. https://doi.org/10.1080/09640568.2020.1814708

Aboramadan, M. (2022). The effect of green HRM on employee green behaviors in higher education: The mediating mechanism of green work engagement. *International Journal of Organizational Analysis*, *30*(1), 7–23. https://doi.org/10.1108/IJOA-05-2020-2190

Abou Kamar, M., Aliane, N., Elbestawi, I., Agina, M. F., & Alsetoohy, O. (2023). Are coastal hotels ready for climate change? The case of Alexandria, Egypt. *International Journal of Environmental Research and Public Health*, *20*(6), 5143. https://doi.org/10.3390/ijerph20065143

Aftab, J., Sarwar, H., Kiran, A., Abid, N., & Ahmad, S. B. (2022). Do transformational leadership and work engagement matter for job performance in luxury hotels? Exploring the role of leaders' managerial skills. *Journal of Hospitality and Tourism Insights*. https://doi.org/10.1108/JHTI-05-2022-0208

Agina, M. F. (2020). Impression management strategies and employee performance in hotels: Is there a relationship? *Journal of the Faculty of Tourism and Hotels-University of Sadat City*, *4*(2/1), 84-106. https://doi.org/10.21608/mfth.2020.166898

Agina, M. F., & Abuelnasr, A. (2021). Presenteeism of restaurants employees: Interaction effects of responsible leadership, organizational commitment and turnover intentions. *Journal of Association of Arab Universities for Tourism and Hospitality*, *21*(5), 131–155. https://doi.org/10.21608/jaauth.2021.105881.1263

Agina, M. F., Aliane, N., Sawy, O. E., Khairy, H. A., & Fayyad, S. (2023). Risks in relation to adopting Airbnb accommodation: The role of fear of COVID-19. *Sustainability*, *15*(6), 5050. https://doi.org/10.3390/su15065050

Agina, M. F., Farrag, D. A., Jaber, H. M., Fayyad, S., Abbas, T. T., Salameh, A. A., & Elziny, M. N. (2025). The influence of customer incivility on hotel frontline employees' responses and service sabotage: Does co-worker support matter? *GeoJournal of Tourism and Geosites*, *58*(1), 89–104. https://doi.org/10.30892/gtg.58108-1393

Agina, M. F., Farrag, D. A., Khairy, H. A., Alhemimah, A., & Al-Romeedy, B. S. (2025). Talent management and innovative work behavior in tourism and hospitality businesses: Does absorptive capacity matter? *Journal of Human Resources in Hospitality & Tourism*, *24*(2), 367–391. https://doi.org/10.1080/15332845.2025.2432621

Agina, M., Mohammed, M. A., & Omar, A. (2017). Role of leader-member exchange and impression management in employee performance at hotels. *Journal of the Faculty of Tourism and Hotels-University of Sadat City*, *1*(2/1), 1-20. https://doi.org/10.21608/mfth.2017.26103

Agrawal, S., & Pradhan, S. (2023). Employee green behavior in hotels: The role of green human resource management, green transformational leadership and value congruence. *Consumer Behavior in Tourism and Hospitality*, *18*(2), 241–255. https://doi.org/10.1108/CBTH-11-2022-0191

Ahmad, S. (2015). Green human resource management: Policies and practices. *Cogent Business & Management*, *2*(1), 1030817. https://doi.org/10.1080/23311975.2015.1030817

Al Hawamdeh, N. (2022). The influence of humble leadership on employees' work engagement: The mediating role of leader knowledge-sharing behaviour. *VINE Journal of Information and Knowledge Management Systems*. https://doi.org/10.1108/VJIKMS-03-2022-0083

Alhemimah, A., Agina, M. F., Alotaibi, S., Semlali, Y., Aliane, N., Abdou, M. Y., & Ahmed, M. (2024). The impact of climate changes on environmental conservation in coastal tourism and beach resort. *Rocznik Ochrona Środowiska*, *26*, 1-17. https://doi.org/10.54740/ros.2024.028

Alola, U. V., Avci, T., & Ozturen, A. (2018). Organization sustainability through human resource capital: The impacts of supervisor incivility and self-efficacy. *Sustainability*, *10*(8), 2610. https://doi.org/10.3390/su10082610

Alsetoohy, O., Al-Abyadh, M. H. A., Döngül, E. S., Agina, M. F., & Elshaer, A. (2022). How humble leadership affects voluntary green behavior and green performance? The roles of job autonomy and green supporting climate in hotels. *Problemy Ekorozwoju/Problems of Sustainable Development*, *17*(2), 230–242. https://doi.org/10.35784/pe.2022.2.25

Amaro, S., & Duarte, P. (2015). An integrative model of consumers' intentions to purchase travel online. *Tourism Management*, *46*, 64–79. https://doi.org/10.1016/j.tourman.2014.06.006

Ampofo, E. T. (2021). Do job satisfaction and work engagement mediate the effects of psychological contract breach and abusive supervision on hotel employees' life satisfaction? *Journal of Hospitality Marketing & Management*, *30*(3), 282–304. https://doi.org/10.1080/19368623.2020.1817222

Andoh, R. P. K., Owusu, N. K., Hayford, C., Ansong, L. O., & Ansong, A. (2024). Implications of green knowledge sharing, organizational green culture and green training and development for organizational environmental citizenship behavior in the hotel sector. *Journal of Hospitality and Tourism Insights*. https://doi.org/10.1108/JHTI-04-2024-0342

Asghar, M., Gull, N., Xiong, Z., Shu, A., Faraz, N. A., & Pervaiz, K. (2023). The influence of inclusive leadership on hospitality employees' green innovative service behavior: A multilevel study. *Journal of Hospitality and Tourism Management*, *56*, 347–355. https://doi.org/10.1016/j.jhtm.2023.07.007

Badar, K., Kundi, Y. M., Siddiquei, A. N., & Abualigah, A. (2023). Linking environmentally-specific empowering leadership to hotel employees' green creativity: Understanding mechanisms and boundary conditions. *Journal of Service Theory and Practice*, *33*(3), 412–435. https://doi.org/10.1108/JSTP-07-2022-0158

Bailey, C., Madden, A., Alfes, K., & Fletcher, L. (2017). The meaning, antecedents and outcomes of employee engagement: A narrative synthesis. *International Journal of Management Reviews*, *19*(1), 31–53. https://doi.org/10.1111/ijmr.12077

Bakker, A. B., & Demerouti, E. (2008). Towards a model of work engagement. *Career Development International*, *13*(3), 209–223. https://doi.org/10.1108/13620430810870476

Bakker, A. B., & Demerouti, E. (2017). Job demands–resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology*, *22*(3), 273–285. https://doi.org/10.1037/ocp0000056

Beirat, M. A., Tashtoush, D. M., Khasawneh, M. A., Az-Zo'bi, E. A., & Tashtoush, M. A. (2025). The effect of artificial intelligence on enhancing education quality and reduce the levels of future anxiety among Jordanian teachers. *Applied Mathematics & Information Sciences*, *19*(2), 279–290. https://doi.org/10.18576/amis/190205

Boiral, O. (2009). Greening the corporation through organizational citizenship behaviors. *Journal of Business Ethics*, *87*(S2), 221–236. https://doi.org/10.1007/s10551-008-9881-2

Boiral, O., Talbot, D., & Paillé, P. (2015). Leading by example: A model of organizational citizenship behavior for the environment. *Business Strategy and the Environment*, *24*(6), 532–550. https://doi.org/10.1002/bse.1835

Brown, K. W., & Kasser, T. (2005). Are psychological and ecological well-being compatible? The role of values, mindfulness, and lifestyle. *Social Indicators Research*, *74*(2), 349–368. https://doi.org/10.1007/s11205-004-8207-8

Buil, I., Martínez, E., & Matute, J. (2019). Transformational leadership and employee performance: The role of identification, engagement and proactive personality. *International Journal of Hospitality Management*, *77*, 64–75. https://doi.org/10.1016/j.ijhm.2018.06.014

Chan, W., Wong, K., & Lo, J. (2009). Hong Kong hotels' sewage: Environmental cost and saving technique. *Journal of Hospitality & Tourism Research*, *33*(3), 329–346. https://doi.org/10.1177/1096348009338525

Chen, Y. S., & Chang, C. H. (2013). The determinants of green product development performance: Green dynamic capabilities, green transformational leadership, and green creativity. *Journal of Business Ethics*, *116*(1), 107–119. https://doi.org/10.1007/s10551-012-1452-x

Chen, Y. S., Chang, C. H., & Lin, Y. H. (2014). Green transformational leadership and green performance: The mediation effects of green mindfulness and green self-efficacy. *Sustainability*, *6*(10), 6604–6621. https://doi.org/10.3390/su6106604

Cochran, W. G. (1963). *Sampling techniques* (2nd ed.). Wiley.

Connelly, B. L., Certo, S. T., Ireland, R. D., & Reutzel, C. R. (2011). Signaling theory: A review and assessment. *Journal of Management*, *37*(1), 39–67. https://doi.org/10.1177/0149206310388419

Çop, S., Olorunsola, V. O., & Alola, U. V. (2021). Achieving environmental sustainability through green transformational leadership policy: Can green team resilience help? *Business Strategy and the Environment*, *30*(1), 671–682. https://doi.org/10.1002/bse.2646

Cordano, M., & Frieze, I. H. (2000). Pollution reduction preferences of US environmental managers: Applying Ajzen's theory of planned behavior. *Academy of Management Journal*, *43*(4), 627–641. https://doi.org/10.2307/1556358

Cropanzano, R., & Mitchell, M. S. (2005). Social exchange theory: An interdisciplinary review. *Journal of Management*, *31*(6), 874–900. https://doi.org/10.1177/0149206305279602

Del Brío, J. Á., Fernandez, E., & Junquera, B. (2007). Management and employee involvement in achieving an environmental action-based competitive advantage: An empirical study. *The International Journal of Human Resource Management*, *18*(4), 491–522. https://doi.org/10.1080/09585190601178687

Demerouti, E., & Bakker, A. B. (2006). Employee well-being and job performance: Where we are and where we should go. In J. Houdmont & S. Leka (Eds.), *Occupational health psychology: European perspectives on research, education and practice* (Vol. 3, pp. 153-172). Nottingham University Press.

Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, *86*(3), 499–512. https://doi.org/10.1037/0021-9010.86.3.499

Donaldson, S. I., & Grant-Vallone, E. J. (2002). Understanding self-report bias in organizational behavior research. *Journal of Business and Psychology*, *17*(2), 245–260. https://doi.org/10.1023/A:1019637632584

Elshaer, A. M., Al-Abyadh, M. H. A., Alsetoohy, O., Marzouk, A. M., & Agina, M. F. (2022). COVID-19 pandemic: A motive for pro-environmental behaviors (Pebs) in the Egyptian tourism and hospitality industry. *Rocznik Ochrona Środowiska*, *24*, 259-273. https://doi.org/10.54740/ros.2022.030

Elshaer, I. A., Azazz, A. M., Semlali, Y., Mansour, M. A., Elziny, M. N., & Fayyad, S. (2024). The nexus between green transformational leadership, employee behavior, and organizational support in the hospitality industry. *Administrative Sciences*, *14*(6), 107. https://doi.org/10.3390/admsci14060107

Franke, G., & Sarstedt, M. (2019). Heuristics versus statistics in discriminant validity testing: A comparison of four procedures. *Internet Research*, *29*(3), 430–447. https://doi.org/10.1108/IntR-12-2017-0515

Graves, L. M., Sarkis, J., & Zhu, Q. (2013). How transformational leadership and employee motivation combine to predict employee proenvironmental behaviors in China. *Journal of Environmental Psychology*, *35*, 81–91. https://doi.org/10.1016/j.jenvp.2013.05.002

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th ed.). Pearson Prentice Hall.

Hair Jr., J. F., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research*, *109*, 101–110. https://doi.org/10.1016/j.jbusres.2019.11.069

Hasan, A., Zhang, X., Mao, D., Kashif, M., Mirza, F., & Shabbir, R. (2024). Unraveling the impact of eco-centric leadership and pro-environment behaviors in healthcare organizations: Role of green consciousness. *Journal of Cleaner Production*, *434*, 139704. https://doi.org/10.1016/j.jclepro.2023.139704

Hilton. (2022). *2022 Environmental, social and governance report*. https://esg.hilton.com/wp-content/uploads/sites/4/2023/04/Hilton-2022-Environmental-Social-and-Governance-Report.pdf

Hobfoll, S. E. (2001). The influence of culture, community, and the nested-self in the stress process: Advancing conservation of resources theory. *Applied Psychology*, *50*(3), 337–421. https://doi.org/10.1111/1464-0597.00062

Irawan, L. Y., Arinta, D., Suprianto, A., Kurniawati, E., Hidajat, H. G., Fahim, A., & Shaherani, N. (2024). Tourism development strategy based on environmental services with integrated coastal zone management (ICZM) to achieve sustainable development goals (SDGs) in Jolosutro Beach of Blitar Regency Indonesia. *GeoJournal of Tourism and Geosites*, *55*(3), 1392-1405. https://doi.org/10.30892/gtg.55338-1310

Jacoby, J. (2002). Stimulus-organism-response reconsidered: An evolutionary step in modeling (consumer) behavior. *Journal of Consumer Psychology*, *12*(1), 51–57. https://doi.org/10.1207/S15327663JCP1201_05

Karatepe, O. M., Hsieh, H., & Aboramadan, M. (2022). The effects of green human resource management and perceived organizational support for the environment on green and non-green hotel employee outcomes. *International Journal of Hospitality Management*, *103*, 103202. https://doi.org/10.1016/j.ijhm.2022.103202

Karatepe, O. M., Rezapouraghdam, H., & Hassannia, R. (2020). Job insecurity, work engagement and their effects on hotel employees' non-green and nonattendance behaviors. *International Journal of Hospitality Management*, *87*, 102472. https://doi.org/10.1016/j.ijhm.2020.102472

Karatepe, O. M., Rezapouraghdam, H., & Hassannia, R. (2021a). Does employee engagement mediate the influence of psychological contract breach on pro-environmental behaviors and intent to remain with the organization in the hotel industry? *Journal of Hospitality Marketing & Management*, *30*(3), 326–353. https://doi.org/10.1080/19368623.2020.1812142

Karatepe, O. M., Rezapouraghdam, H., & Hassannia, R. (2021b). Sense of calling, emotional exhaustion and their effects on hotel employees' green and non-green work outcomes. *International Journal of Contemporary Hospitality Management*, *33*(10), 3705–3728. https://doi.org/10.1108/IJCHM-01-2021-0104

Karatepe, O. M., Yavas, U., Babakus, E., & Deitz, G. D. (2018). The effects of organizational and personal resources on stress, engagement, and job outcomes. *International Journal of Hospitality Management*, *74*, 147–161. https://doi.org/10.1016/j.ijhm.2018.04.005

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

Kaya, B., & Karatepe, O. M. (2020). Does servant leadership better explain work engagement, career satisfaction and adaptive performance than authentic leadership? *International Journal of Contemporary Hospitality Management*, *32*(6), 2075–2095. https://doi.org/10.1108/IJCHM-05-2019-0438

Khairy, H. A., Agina, M. F., Aliane, N., & Hashad, M. E. (2023a). Internal branding in hotels: Interaction effects of employee engagement, workplace friendship, and organizational citizenship behavior. *Sustainability*, *15*(5), 4530. https://doi.org/10.3390/su15054530

Khairy, H. A., Agina, M. F., Ahmad, M. S., & Fayyad, S. (2025). Distributive injustice effect on employee's innovative behavior in hotels: Roles of workplace envy and workplace spirituality. *Journal of Human Resources in Hospitality & Tourism*, *24*(3), 1–28. https://doi.org/10.1080/15332845.2025.2484949

Khairy, H. A., Ahmed, M., Asiri, A., Gazzawe, F., Abdel Fatah, M. A., Ahmad, N., Qahmash, A., & Agina, M. F. (2024). Catalyzing green work engagement in hotel businesses: Leveraging artificial intelligence. *Sustainability*, *16*(16), 7102. https://doi.org/10.3390/su16167102

Khairy, H. A., Elzek, Y., Aliane, N., & Agina, M. F. (2023b). Perceived environmental corporate social responsibility effect on green perceived value and green attitude in hospitality and tourism industry: The mediating role of environmental well-being. *Sustainability*, *15*(6), 4746. https://doi.org/10.3390/su15064746

Khan, K., Shams, M. S., Khan, Q., Akbar, S., & Niazi, M. M. (2022). Relationship among green human resource management, green knowledge sharing, green commitment, and green behavior: A moderated mediation model. *Frontiers in Psychology*, *13*, 924492. https://doi.org/10.3389/fpsyg.2022.924492

Khan, R. U., Saqib, A., Abbasi, M. A., Mikhaylov, A., & Pinter, G. (2023). Green leadership, environmental knowledge sharing, and sustainable performance in manufacturing industry: Application from upper echelon theory. *Sustainable Energy Technologies and Assessments*, *60*, 103540. https://doi.org/10.1016/j.seta.2023.103540

Kim, T. T., Kim, W. G., Majeed, S., & Haldorai, K. (2023). Does green human resource management lead to a green competitive advantage? A sequential mediation model with three mediators. *International Journal of Hospitality Management*, *111*, 103486. https://doi.org/10.1016/j.ijhm.2023.103486

Kim, Y. J., Kim, W. G., Choi, H. M., & Phetvaroon, K. (2019). The effect of green human resource management on hotel employees' eco-friendly behavior and environmental performance. *International Journal of Hospitality Management*, *76*, 83–93. https://doi.org/10.1016/j.ijhm.2018.04.007

Kock, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of e-Collaboration*, *11*(4), 1–10. https://doi.org/10.4018/ijec.2015100101

Kock, N. (2017). *WarpPLS user manual* (Version 6.0). ScriptWarp Systems.

Kock, N. (2019). Factor-based structural equation modeling with WarpPLS. *Australasian Marketing Journal*, *27*(1), 57–63. https://doi.org/10.1016/j.ausmj.2019.02.002

Kock, N. (2021). *WarpPLS user manual* (Version 7.0). ScriptWarp Systems.

Kundi, Y. M., Aboramadan, M., & Abualigah, A. (2023). Linking paradoxical leadership and individual in-role and extra-role performance: A multilevel examination. *Management Decision*. https://doi.org/10.1108/MD-10-2022-1353

Li, W., Bhutto, T. A., Xuhui, W., Maitlo, Q., Zafar, A. U., & Bhutto, N. A. (2020). Unlocking employees' green creativity: The effects of green transformational leadership, green intrinsic, and extrinsic motivation. *Journal of Cleaner Production*, *255*, 120229. https://doi.org/10.1016/j.jclepro.2020.120229

Li, X., Sanders, K., & Frenkel, S. (2012). How leader–member exchange, work engagement and HRM consistency explain Chinese luxury hotel employees' job performance. *International Journal of Hospitality Management*, *31*(4), 1059–1066. https://doi.org/10.1016/j.ijhm.2012.01.002

Li, Z., Xue, J., Li, R., Chen, H., & Wang, T. (2020). Environmentally specific transformational leadership and employee's pro-environmental behavior: The mediating roles of environmental passion and autonomous motivation. *Frontiers in Psychology*, *11*, 1408. https://doi.org/10.3389/fpsyg.2020.01408

Liu, W., Tian, J., Chen, L., Lu, W., & Gao, Y. (2015). Environmental performance analysis of eco-industrial parks in China: A data envelopment analysis approach. *Journal of Industrial Ecology*, *19*(6), 1070–1081. https://doi.org/10.1111/jiec.12233

Luu, T. T. (2019). Building employees' organizational citizenship behavior for the environment: The role of environmentally-specific servant leadership and a moderated mediation mechanism. *International Journal of Contemporary Hospitality Management*, *31*(1), 406–426. https://doi.org/10.1108/IJCHM-07-2017-0425

Manley, S. C., Hair, J. F., Williams, R. I., & McDowell, W. C. (2021). Essential new PLS-SEM analysis methods for your entrepreneurship analytical toolbox. *International Entrepreneurship and Management Journal*, *17*(4), 1805–1825. https://doi.org/10.1007/s11365-020-00687-6

Mehrabian, A., & Russell, J. A. (1974). *An approach to environmental psychology*. The MIT Press.

Merli, R., Preziosi, M., Acampora, A., Lucchetti, M. C., & Ali, F. (2019). The impact of green practices in coastal tourism: An empirical investigation on an eco-labelled beach club. *International Journal of Hospitality Management*, *77*, 471–482. https://doi.org/10.1016/j.ijhm.2018.08.011

Miah, M., Rahman, S. M., Biswas, S., Szabó-Szentgróti, G., & Walter, V. (2024). Effects of green human resource management practices on employee green behavior: The role of employee's environmental knowledge management and green self-efficacy for greening workplace. *International Journal of Organizational Analysis*. https://doi.org/10.1108/IJOA-04-2024-4462

Ministry of Tourism. (2018). *Tourism in figures*. General Department of Information and Statistics.

Mittal, S., & Dhar, R. L. (2016). Effect of green transformational leadership on green creativity: A study of tourist hotels. *Tourism Management*, *57*, 118–127. https://doi.org/10.1016/j.tourman.2016.05.007

Molina-Azorín, J. F., Tarí, J. J., Pereira-Moliner, J., Lopez-Gamero, M. D., & Pertusa-Ortega, E. M. (2015). The effects of quality and environmental management on competitive advantage: A mixed methods study in the hotel industry. *Tourism Management*, *50*, 41–54. https://doi.org/ 10.1016/j.tourman.2015.01.008

Mulyadi, B., Sirojuzilam, S., Lubis, S., & Purwoko, A. (2024). The role of Caldera Geopark in tourism development of Lake Toba Super Priority Destinations, Indonesia. *GeoJournal of Tourism and Geosites*, *55*(3), 1426–1437. https://doi.org/10.30892/gtg.55342-1314

Ones, D. S., & Dilchert, S. (2012). Environmental sustainability at work: A call to action. *Industrial and Organizational Psychology*, *5*(4), 444–466. https://doi.org/10.1111/j.1754-9434.2012.01478.x

Orlowski, M., Bufquin, D., & Nalley, M. E. (2021). The influence of social perceptions on restaurant employee work engagement and extra-role customer service behavior: A moderated mediation model. *Cornell Hospitality Quarterly*, *62*(2), 261–275. https://doi.org/10.1177/1938965520910103

Ozturk, A., Karatepe, O. M., & Okumus, F. (2021). The effect of servant leadership on hotel employees' behavioral consequences: Work engagement versus job satisfaction. *International Journal of Hospitality Management*, *97*, 102994. https://doi.org/10.1016/j.ijhm.2021.102994

Paillé, P., Mejía Morelos, J. H., Raineri, N., & Stinglhamber, F. (2019). The influence of the immediate manager on the avoidance of non-green behaviors in the workplace: A three-wave moderated-mediation model. *Journal of Business Ethics*, *155*(3), 723–740. https://doi.org/10.1007/s10551-017-3519-1

Pham, N. T., Tučková, Z., & Jabbour, C. J. C. (2019). Greening the hospitality industry: How do green human resource management practices influence organizational citizenship behavior in hotels? A mixed-methods study. *Tourism Management*, *72*, 386–399. https://doi.org/10.1016/j.tourman.2018.12.008

Rabiul, M. K., Promsivapallop, P., Al Karim, R., Islam, M. A., & Patwary, A. K. (2022). Fostering quality customer service during Covid-19: The role of managers' oral language, employee work engagement, and employee resilience. *Journal of Hospitality and Tourism Management*, *53*, 50–60. https://doi.org/10.1016/j.jhtm.2022.09.002

Raza, A., Farrukh, M., Iqbal, M. K., Farhan, M., & Wu, Y. (2021). Corporate social responsibility and employees' voluntary pro-environmental behavior: The role of organizational pride and employee engagement. *Corporate Social Responsibility and Environmental Management*, *28*(3), 1104–1116. https://doi.org/10.1002/csr.2109

Rezapouraghdam, H., Alipour, H., & Arasli, H. (2019). Workplace spirituality and organization sustainability: A theoretical perspective on hospitality employees' sustainable behavior. *Environment, Development and Sustainability*, *21*(4), 1583–1601. https://doi.org/10.1007/s10668-018-0120-4

Riva, F., Magrizos, S., & Rubel, M. R. B. (2021). Investigating the link between managers' green knowledge and leadership style, and their firms' environmental performance: The mediation role of green creativity. *Business Strategy and the Environment*, *30*(7), 3228–3240. https://doi.org/10.1002/bse.2799

Rubel, M. R. B., Kee, D. M. H., & Rimi, N. N. (2021). The influence of green HRM practices on green service behaviors: The mediating effect of green knowledge sharing. *Employee Relations: The International Journal*, *43*(5), 996–1015. https://doi.org/10.1108/ER-07-2020-0326

Sachdeva, C., & Singh, T. (2023). Green transformational leadership and pro-environmental behaviour: Unravelling the underlying mechanism in the context of hotel industry. *International Journal of Organizational Analysis*. https://doi.org/10.1108/IJOA-09-2022-3420

Saks, A. M. (2006). Antecedents and consequences of employee engagement. *Journal of Managerial Psychology*, *21*(7), 600–619. https://doi.org/10.1108/02683940610690169

Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement*, *66*(4), 701–716. https://doi.org/10.1177/0013164405282471

Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness Studies*, *3*(1), 71–92. https://doi.org/10.1023/A:1015630930326

Singh, R., Singh, C. D., & Singh, T. (2024). Structural equation modelling of core functional competencies based on partial least square method using WarpPLS 7.0. *International Journal of Process Management and Benchmarking*, *16*(2), 215–230. https://doi.org/10.1504/IJPMB.2024.135759

Singtuen, V., & Gałka, E. (2024). New holistic approach to creative tourism and sustainable territories in Chi River Basin, NE Thailand. *GeoJournal of Tourism and Geosites*, *55*(3), 1090–1101. https://doi.org/10.30892/gtg.55310-1282

Spence, M. (1973). Job market signaling. *The Quarterly Journal of Economics*, *87*(3), 355–374. https://doi.org/10.2307/1882010

Suliman, M. A., Abdou, A. H., Ibrahim, M. F., Al-Khaldy, D. A. W., Anas, A. M., Alrefae, W. M. M., & Salama, W. (2023). Impact of green transformational leadership on employees' environmental performance in the hotel industry context: Does green work engagement matter? *Sustainability*, *15*(3), 2690. https://doi.org/10.3390/su15032690

Tandon, A., Dhir, A., Madan, P., Srivastava, S., & Nicolau, J. L. (2023). Green and non-green outcomes of green human resource management (GHRM) in the tourism context. *Tourism Management*, *98*, 104765. https://doi.org/10.1016/j.tourman.2023.104765

Tosun, C., Parvez, M. O., Bilim, Y., & Yu, L. (2022). Effects of green transformational leadership on green performance of employees via the mediating role of corporate social responsibility: Reflection from North Cyprus. *International Journal of Hospitality Management*, *103*, 103218. https://doi.org/10.1016/j.ijhm.2022.103218

Wang, J., Wang, S., Wang, Y., Li, J., & Zhao, D. (2018). Extending the theory of planned behavior to understand consumers' intentions to visit green hotels in the Chinese context. *International Journal of Contemporary Hospitality Management*, *30*(8), 2810–2825. https://doi.org/10.1108/IJCHM-04-2017-0223

Wen, J., Huang, S. S., & Teo, S. (2023). Effect of empowering leadership on work engagement via psychological empowerment: Moderation of cultural orientation. *Journal of Hospitality and Tourism Management*, *54*, 88–97. https://doi.org/10.1016/j.jhtm.2022.12.012

Wong, S. K. S. (2013). Environmental requirements, knowledge sharing and green innovation: Empirical evidence from the electronics industry in China. *Business Strategy and the Environment*, *22*(5), 321–338. https://doi.org/10.1002/bse.1746

Xanthopoulou, D., Bakker, A. B., & Fischbach, A. (2013). Work engagement among employees facing emotional demands: The role of personal resources. *Journal of Personnel Psychology*, *12*(2), 74–84. https://doi.org/10.1027/1866-5888/a000085

Xu, L., Mohammad, S. J., Nawaz, N., Samad, S., Ahmad, N., & Comite, U. (2022). The role of CSR for de-carbonization of hospitality sector through employees: A leadership perspective. *Sustainability*, *14*(9), 5365. https://doi.org/10.3390/su14095365

Yakupova, J. B., Khalelova, R. A., Khairullina, A. K., Zharmaganbetova, N. S., & Abdusheva, G. Z. (2024). Prospects for the development of geological tourism in West Kazakhstan. *GeoJournal of Tourism and Geosites*, *55*(3), 1238-1249. https://doi.org/10.30892/gtg.55322-1294

Yan, M., Xie, Y. P., Zhao, J., Zhang, Y. J., Bashir, M., & Liu, Y. (2020). How ingratiation links to counterproductive work behaviors: The roles of emotional exhaustion and power distance orientation. *Frontiers in Psychology*, *11*, 2238. https://doi.org/10.3389/fpsyg.2020.02238

Yiamjanya, S., Kankaew, K., Sitikarn, B., Nakpathom, P., Awain, A. M. S. B., & Jabjainai, T. (2024). Wetland and biocultural heritage regeneration through thematic ecological tourism practice: The case of Patan Sub-District, Khun Tan District, Chiang Rai, Thailand. *GeoJournal of Tourism and Geosites*, *56*(4), 1474–1483. https://doi.org/10.30892/gtg.56404-1318

Yu, Y., Kim, H., & Qu, H. (2020). A deep acting perspective on Generation Y hotel employees' workplace deviance. *International Journal of Contemporary Hospitality Management*, *32*(2), 835–852. https://doi.org/10.1108/IJCHM-05-2019-0426

Zhang, Y., Wang, Z., & Zhou, G. (2014). Determinants of employee electricity saving: The role of social benefits, personal benefits and organizational electricity saving climate. *Journal of Cleaner Production*, *66*, 280–287. https://doi.org/10.1016/j.jclepro.2013.10.021

Zheng, Y., Gao, Y. L., Li, M., & Dang, N. (2023). Leadership styles and employee pro-environmental behavior in the tourism and hospitality industry: A cognitive-affective personality system perspective. *International Journal of Hospitality Management*, *113*, 103509. https://doi.org/10.1016/j.ijhm.2023.103509

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