

Advancing Sustainable Development Goals Through Green Inclusive Leadership in Hospitality Industry: A Dual Study Perspective

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Abstract

Implementing green innovation is paramount for the luxury hospitality industry in accomplishing its sustainable development goals (SDGs). Therefore, identifying the key drivers that enable green innovation (GI) is essential for promoting sustainable development. Existing literature on luxury hospitality management has overlooked exploring the key factors that drive green innovation. This study leverages the natural resource-based view to examine the mediating roles of green dynamic capability and green environmental orientation in the relationship between green inclusive leadership (GIL) and green innovation. The research further examines the effect of GI on a hotel's environmental performance and a hotel's green image. The theoretical model was evaluated through two distinct studies focusing on Italian employees in the hospitality sector. The findings underscore the significance of GIL practices with environmental initiatives to promote sustainable GI. Expanding the GI debate offers compelling insights that might help hotel professionals make informed strategic decisions contributing to SDGs.

Keywords: Green Inclusive Leadership; Green Dynamic Capability; Green Environmental Orientation; Green Innovation; Hotel Environmental Performance; Hotel Green Image

STATEMENT OF NOVELTY

This study advances the discourse on sustainable development in the luxury hospitality industry by integrating the Natural Resource-Based View (NRBV) to explore the overlooked relationship between Green Inclusive Leadership (GIL) and Green Innovation (GI). Unlike prior research, which has primarily focused on general sustainability practices, this dual-study approach empirically establishes the mediating roles of Green Dynamic Capability (GDC) and

Green Environmental Orientation (GEO) in enabling GI. By employing a rigorous multi-wave design across two distinct studies in the Italian hospitality sector, this research provides robust evidence on how GIL fosters GI and enhances both a hotel's environmental performance (HEP) and green image (HGI). The study's findings offer novel theoretical contributions by expanding the NRBV framework within luxury hospitality and delivering practical implications for hotel leaders seeking to align their innovation strategies with Sustainable Development Goals (SDGs).

1. INTRODUCTION

In response to the escalating global environmental challenges and the introduction of stringent environmental regulations guided by the United Nations Sustainable Development Goals (UNSDGs), there has been a notable increase in market demand and heightened corporate awareness regarding environmental issues (Janjua et al., 2024). This shift reflects a broader recognition of the importance of sustainability, compelling organizations to refine their practices to align with these emerging standards and to contribute positively to the global environment (Singh & Joshi, 2024). The hospitality industry represents one of the largest sectors experiencing increasing environmental and economic impacts (Ali et al., 2024). The hospitality industry, on average, is responsible for approximately 20.6 kilograms of carbon dioxide emissions per hotel room per night. Furthermore, it generates an average of one kilogram of waste per guest daily and consumes approximately 218 gallons of water for each room daily (Aslam et al., 2024). Hotels generate an estimated 0.8 to 1.2 kilograms of waste per guest daily. The waste composition is primarily made up of organic matter (44%), followed by glass (16%), plastics (13%), paper (11%), and unsorted waste (7%) (Aslam et al., 2024; Sharma & Gupta, 2024). This information highlights the significant environmental impact of the hospitality industry and underscores the importance of implementing sustainable waste management practices. Consequently, scholars have instigated a discourse concerning how the

hospitality industry can sustain its growth while adhering to sustainability standards and conservational accountability (Awan et al., 2023). Academics argue that organizations must advance and promote environmentally sustainable innovations to decrease carbon emanations and address potential conservational risks (Awan et al., 2023; Janjua et al., 2024).

Former investigations have underscored the implication of green innovation (GI) in services industries as a critical element for attaining sustainable performance (Begum et al., 2022; Cui et al., 2023). Nevertheless, extensive investigations into the factors contributing to green innovations in the service sector have not yielded a conclusive result (Begum et al., 2022). Evidence from studies shows that efforts to identify green inventions are in their nascent stages and have yet to yield positive outcomes (Appiah et al., 2023; Khanra et al., 2022). With the burgeoning apprehensions encircling environmental and conservation sustainability, focusing on filling this knowledge gap is crucial to obtaining a more thorough understanding of GI-related issues (Janjua et al., 2024). Thus, this research investigates the factors contributing to the GI's emergence in the service (hotel) organization. Prior studies have shown limited attention to the strategies employed by luxury hotels to foster green innovation (Arici et al., 2023). The former studies have established a connection between different leadership styles that encourage environmental awareness and the eco-friendly actions of employees. These leadership styles include ethical leadership (Nwanzu & Babalola, 2024), servant leadership (Aboramadan et al., 2024; Javed et al., 2024), transformational leadership (Aslam & Sahibzada, 2024), and green transformational leadership style (Janjua et al., 2024; Sachdeva & Singh, 2024). There is a burgeoning scholarly interest in examining the effects of green leadership practices on employees' behaviour and ecological outcomes. However, there remains a notable shortage of investigation within the luxury hospitality sector that specifically probes leadership strategies that could substantially shape pro-environmental conduct and sustainable innovation of organizations. The notion of green, inclusive leadership (GIL) has recently received

prominence, particularly in contemporary discourses on sustainable and equitable organizational practices (Aboramadan et al., 2022; Thabet et al., 2023). GIL pertains to the conduct of leaders who foster an approachable and accessible work environment and demonstrate a willingness to engage with employees to achieve environmental objectives, particularly those associated with the expansion of cleaner processes and services (Bhutto et al., 2021; Thabet et al., 2023). Prior investigation has confirmed a strong link between GIL and positive behavioural outcomes of employees. These include enhanced green employee creativity (Asghar, Ullah, et al., 2023; Bhutto et al., 2021), employee green behaviour (Aboramadan et al., 2022), green HRM (Patwary et al., 2023). However, the exploration of sustainable organizational behaviour and practices such as GI in luxury hotels has been limited, particularly concerning the role of GIL in driving the sustainability agenda and promoting green-oriented organizational behaviour (Farooq et al., 2022). Studies in the area have recognized the need for further investigation owing to a noticeable absence of an in-depth understanding of the causal variables contributing to the existing shortage of knowledge (Farooq et al., 2022; Thabet et al., 2023). Thus, the study represents an early endeavour to investigate the connection between GIL and GI.

Furthermore, it is worth noting that the correlation between GIL and GI is intricate, multifaceted, and subject to various interceding factors that supplement or weaken the effect. Therefore, the natural- resource-based-view (NRBV) (Hart, 1995) is utilized to understand the association between GIL and GI. Using the NRBV paradigm, an organization can leverage its resources and capabilities to maximize its impact while minimizing its environmental footprint (Begum et al., 2022). The study contends that the resources and capabilities of a hotel encompass two critical components, (i.e.) green dynamic capability (GDC) and green-environmental orientation (GEO). These elements, when combined, form the foundation of a hotel's sustainability strategy and are essential for its long-term success in the hospitality

industry. Academicians have posited that GI depends on the dynamic capability of an organization (Yuan & Cao, 2022) and environmental orientation (Zameer et al., 2022). Therefore, it is commended that utilising GIL as an organisation's robust resource can augment a hotel's ability to acquire GI, which can increase both GDC and GEO. Previous inquiries have explored the role of GDC as an intermediary in the association between CSR and GI links in the industrial sector (Yuan & Cao, 2022) and the relationship between stakeholder pressures and GI in SMEs (Singh et al., 2022). Moreover, researchers have examined the rapport amongst GEO, GI, and green competitive advantage as a potential predictor in the industrial sector (Zameer et al., 2022). Nevertheless, how the organization's GDC and GEO intercede amid the GIL and GI remains unresolved, particularly in luxury hotels. This field's lack of comprehensive research has generated a void in the knowledge this investigation aims to address. This study offers insight into luxury hotel operators by highlighting the underlying mechanisms influencing the correlation between GIL and GI.

Drawing upon the NRBV framework (Hart, 1995), GIL, as a rare organizational resource, can augment GI as an organization's competency, thus enabling the accomplishment of both hotel environmental performance (HEP) and hotel green image (HGI) as green outcomes within the hotel industry. Previous research has shown limited attention given to the influence of a hotel's GI on its HEP and HGI. Prior research has indicated a correlation between environmental performance and green HRM in the manufacturing sector, as demonstrated by (Aftab et al., 2023). Additionally, environmental performance is associated with CSR in SMEs, as highlighted by (Simmou et al., 2023). Furthermore, environmental performance has been linked to “green intellectual capital” in publicly listed establishments (Asiaei et al., 2023). However, scholarly research examining the determinants of environmental performance within the luxury hospitality sector is scarce. In addressing the existing gap within the Italian hospitality sector, this study proposes a novel perspective on environmental performance. It

articulates this concept as the specific actions and outcomes hotels achieve through their environmental initiatives, characterizing it as the hotel's environmental performance (HEP). Moreover, the association between corporate green image and environmental corporate social responsibility has been discussed by (Ali et al., 2023), while (Khan et al., 2023) have explored the notion of green intellectual capital with corporate green image. Moreover, environmental performance was studied in the SME business as a mediating factor between CSR and corporate social performance (Fosu, Fosu, et al., 2024). However, it is primarily unknown how the GI influences environmental performance (Singh et al., 2020) and corporate green image within the services sector (Fosu, Fosu, et al., 2024). There is a significant lack of study in these specific areas of inquiry, and further empirical investigations are necessary (Singh et al., 2020). This study conceptualizes the corporate green image within the particular context of hotels, highlighting the perception of these establishments about their commitment to environmental sustainability. Consequently, it characterizes this perception as the hotel green image (HEP). By focusing on these critical elements, we can develop a more engaging narrative about the significance of environmental responsibility in the hotel industry and how hotels can strengthen their reputation within a sustainable framework. Examining the relationships among GIL, GDC, and GEO to GI presents an opportunity to enhance HEP and HGI. In this context, we propose three critical research inquiries: RQ1: What is the relationship between GIL and GI? RQ2: To what extent do GDC and GEO mediate the relationship between GIL and GI? RQ3: How is GI associated with HEP and HGI? This structured approach aims to provide valuable insights into these dynamics and their implications for improving hotel environmental performance and its positive green image. The current research seeks to validate the underlying hypotheses by examining multi-wave, multi-source data collected from employees across 65 luxury hotels in 19 distinct cities throughout Italy. Therefore, the study significantly enhances the field of organizational pro-environmental behavior by conducting an exhaustive analysis of the crucial

relationship, employing a time-lagged approach to gain a profound understanding of the phenomena under study.

The present study offers significant scholarly contributions to the hospitality literature, particularly regarding eco-friendly organizational behaviors. Utilizing the NRBV framework, this research addresses the determinants of GI within the service sector, an area that has previously yielded inconclusive findings (Appiah et al., 2023; Begum et al., 2022; Khanra et al., 2022). The relationship between GIL and GI and GI's direct influence on HEP and HGI has not been previously explored in the context of luxury hospitality. This presents a unique opportunity for research to fill this gap and contribute valuable insights to the field of hospitality. Second, the study's distinctive contribution lies in its utilization of a dual-path mediation model, which has not been previously examined in any framework about the association of GIL. This model elucidates the complex relationship between antecedents of GI and its subsequent outcomes in luxury hotels by conceptualizing the intervening role of GDC and GEO in the connection between GIL and GI. Considering the service industry's unique environmental challenges, this approach differs from the industrial sector.

THEORETICAL UNDERPINNING and HYPOTHESES DEVELOPMENT

2.1. Natural-Resource-Based View Theory (NRBV)

Building upon the resource-based view, which does not fully account for the challenges presented by the natural environment, the natural resource-based View (NRBV) posits that future strategic planning and the attainment of competitive advantage hinge upon the development of capabilities that facilitate environmentally sustainable economic activities (Hart, 1995). The primary objective of the framework is to elucidate the interplay between an organization's resources, competencies, and external environment (Begum et al., 2022). organizations can adapt to evolving market conditions by comprehensively understanding this

interaction and capitalize on their unique capabilities to achieve sustainable competitive advantage. This framework presents three interconnected strategic competencies for effective resource allocation: pollution prevention, product stewardship, and sustainable development (Farooq et al., 2022; Hart & Dowell, 2011). The primary objective of pollution mitigation is eliminating waste, effluents, and emissions from the human environment. Product management also emphasizes reducing environmental impacts associated with products and processes throughout their life cycles. This requires a comprehensive assessment of the effects at each stage of development, which includes enhancing energy efficiency and delivering more excellent value to consumers. Furthermore, a sustainable development strategy underscores the importance of the long-term advancement of environmentally friendly products and processes while addressing economic and social considerations (Begum et al., 2022; Janjua et al., 2024). The behaviors delineated are fundamentally integral to the principles of ecological integrity and GI, which endeavour to preserve the environment and advocate for a more sustainable approach to energy consumption (Appiah et al., 2023).

Moreover, GIL has prioritized fostering awareness and motivation throughout the organization to reach its environmental objectives effectively (Hu et al., 2024). The study asserts that GIL constitutes a significant asset within hospitality organizations as a fundamental basis for developing and enhancing novel products. The extent to which a company is willing and capable of achieving environmental objectives is primarily determined by the connection between leadership and innovation (Ahmad et al., 2022a). This indicates that GIL might be crucial in fostering an organizational culture that prioritizes sustainability and encourages innovative practices to reduce environmental impacts. GIL sets clear environmental goals and motivates and empowers its teams to explore and implement green innovations, ultimately driving the company toward more sustainable operations (Hu et al., 2024).

Moreover, the NRBV principles focus on evaluating the environmental implications associated with using organizational resources and the processes and product innovation that emerge from these resources (Aslam et al., 2024). Drawing on the Natural Resource-Based View (NRBV) principles, it is asserted that the effective utilization of organizational resources, such as GIL, along with critical competencies like GDC and GEO, is essential for fostering sustainable practices and achieving a competitive advantage. The current research asserts that the GIL enabled by the GDC and the GEO plays a significant role in advancing GI. This advancement, in turn, can lead to improved HEP and HGI within the service (hotel) industry.

2.2. Green Inclusive Leadership and Green Innovation

Green inclusive leadership (GIL) denotes leaders who are approachable, available, and willing to engage with personnel to achieve environmentally friendly and sustainable procedures and service objectives in the service industries (Carmeli et al., 2010). GIL fosters sustainable outcomes by employing the communally engaged leadership style, establishing truth and confidence via transparent, genuine, and ethically upright activities (Aboramadan et al., 2022). The Natural Resource-Based View (NRBV) theory suggests that leaders can effectively promote a sustainable vision among their teams by embodying a commitment to environmental stewardship. By utilizing the GIL style, the leader can inspire and motivate staff, ultimately leading to enhanced green innovation (GI) within the organization (Begum et al., 2022). GIL fosters the mindset and resilience required to create, communicate, and execute environmental-friendly initiatives (Hu et al., 2024). Former scholarships have established a strong association between GIL and positive behavioural outcomes among employees. These include enhanced green employee creativity and innovation (Amabile & Pratt, 2016; Asghar, Ullah, et al., 2023; Bhutto et al., 2021), employee green conduct (Aboramadan et al., 2022), and green- HRM (Patwary et al., 2023). Though green leadership practices have begun to garner

academic interest as a latent catalyst for green results among personnel, research is scarce in the hospitality industry regarding green-specific leadership approaches that could substantially influence the pro-environmental behaviour of organizations such as green innovation (GI).

This study investigates the notion of GIL as a fundamental factor influencing green organizational behavior. Due to the dearth of statistical indicators about the influence of GIL on organizational green behavioral outcomes (i.e., GI). It is imperative to conduct further research on this type of leadership (Aboramadan et al., 2022). This is significant because, unlike other leadership styles that focus on environmental concerns, such as green servant leadership or green transformational leadership, GIL could be referred to as a social influencing mechanism that constructs and produces emergent coordination and desired change and innovation (Aboramadan et al., 2022). Moreover, the exploration of sustainable organizational behaviour and practices such as GI in luxury hotels has been limited, predominantly concerning the role of GIL in driving the sustainability agenda and promoting green-oriented organizational behaviour (Farooq et al., 2022). Studies in the area have recognized the need for further investigation due to a noticeable absence of understanding. (Farooq et al., 2022; Thabet et al., 2023). Therefore, we suggest.

H1: Green, inclusive leadership positively impacts green innovation.

2.3. Mediating Role of GDC

Green dynamic capability (GDC) refers to an organization's ability to identify and adapt to changing market conditions by utilizing specialized procedures and resources (Chen & Chang, 2013). This includes incorporating green knowledge and fostering collaboration to impact the environment positively (Teece, 2007). Much evidence indicates that organizational environmental sustainability could be enhanced by employing green innovation and adopting more environmentally friendly products and procedures, provided they reach an optimal standard of (GDC) (Yuan & Cao, 2022). The preceding discourse underscores the critical

matter of cultivating these (GDCs), specifically within the luxury hotel sector. A former study has found that leadership is central to fostering the necessary GDC to drive growth and innovation in (SMEs)(Ahmad et al., 2022b). Nevertheless, no statistical investigation has been conducted on the relationship between GIL-GDC in the Italian hotel sector. A deeper understanding of how green inclusive leadership can enhance GDC is highly valuable. The connection can also be viewed as credible in light of the NRBV's theoretical proposition, which states that eco-environmentalism requires the efficient application of an organization's resources (GIL) as well as vital competencies (GDC) (Aslam et al., 2024).

GDC is considered essential for GI, as demonstrated by a recent investigation (Ahmad et al., 2022b). Former investigations have shown that GDC ensures GI in various sectors associated with products or processes. This includes significant contributions to recycling waste, promoting environmental conservation in businesses, implementing energy-saving measures, designing products with a pro-environmental focus, and preventing pollution. (Singh et al., 2022; Yuan & Cao, 2022). Therefore, GDC positively influences GI as it can recognize, collect, and predict market trends for environmentally friendly products and advancements in eco-friendly technologies and devise policies concerning green initiatives (Ahmad et al., 2022b). To achieve an enduring competitive advantage, organizations must efficiently convert GDC into green innovation (Ahmad et al., 2022b). The preceding discourse provides a fundamental basis for investigating latent indirect influence. Hence, it is supposed that.

H2: Green inclusive leadership positively impacts green dynamic capability.

H2a: Green dynamic capability positively impacts green innovation.

H2b: Green dynamic capability mediates between green inclusive leadership and green innovation.

2.4. Mediating Role of GEO

Green environmental orientation (GEO) is a valued intangible asset that guides strategic actions and eventually enhances performance (Chan et al., 2012). Based on NRBV principles, an organization's green environmental orientation may be integral to its fundamental corporate values and beliefs (Yasir et al., 2020). Often, corporate leaders initiate this initiative driven by their pro-environmental ideology. This individual ideology ultimately permeates the entire organization due to the encouragement of such leaders (Sharma, 2000). Previous studies have demonstrated that adopting inclusive leadership is an exceedingly effective leadership style for achieving organizational ecological goals (Aboramadan et al., 2022). Numerous positive outcomes have been associated with inclusive leadership in past studies. Several researchers have espoused that inclusive leadership can lead to positive outcomes in various areas. These include organizational identification (Naseer et al., 2023), increased happiness at the workplace (Jha et al., 2023), fostering meaningful work (Shafaei & Nejati, 2023), improved organizational empowerment (Lu et al., 2023), promotion of green innovative service behaviour (Asghar, Gull, et al., 2023) and building resilience capacity (Gong et al., 2024). Nevertheless, there is an absence of investigations into the GIL- GEO association within the Italian hotel industry. A thorough understanding of how GIL can improve GEO is fundamental in the hotel industry. The rationale behind this correlation can be explained through the notion of the NRBV, suggesting that the efficacious consumption of an organization's resource (GIL) and essential capabilities (GEO) is crucial for the effectual execution of eco-eco-friendly practices (Zameer et al., 2022).

Incorporating cost-effective GI in producing products and processes permits organizations to be congruent with conservational guidelines and uphold social responsibilities (Zameer et al., 2022). A recent study has shown that organizations with ISO 14001 certification might not observe substantial improvements in ecological performance. Contradictorily, organizations prioritizing environmental sustainability must maintain an unwavering

commitment to continuously improving their production procedures (Palmié et al., 2023). However, it remains uncertain if organizational GEO can facilitate GI (Palmié et al., 2023). The extant leadership scholarship proposes a need for a thorough examination to determine the interceding variables that connect GIL and GI (Begum et al., 2022). Therefore, we propose that GEO acts as a mediator connecting GIL and GI.

H3: Green inclusive leadership positively impacts green environmental orientation

H3a: Green environmental orientation positively impacts green innovation

H3b: Green environmental orientation mediates between green inclusive leadership and green innovation.

2.5. Green Innovation and Hotel Environmental Performance

Emphasizing conservation performance can significantly diminish waste generation (Awan et al., 2023). GI's cost-effective and waste-reducing nature makes it an ideal solution for organizations seeking to optimize their operations (Gu, 2022). The function of GI is crucial to an organization because it is related to its conservational policy (Aftab et al., 2023). A multitude of scholarly research has primarily acknowledged the benefits of GI on the environment (Aftab et al., 2023; Singh et al., 2020). Prior inquiries suggest that the organization's environmental performance is impacted by several aspects, such as green product quality, the execution of sustainable processes, and the integration of environmentally conscious factors into an organization's day-to-day activities (Asadi et al., 2020; Dubey et al., 2015; Singh et al., 2019). Previous research emphasizes the importance of considering GI as more than a mere reaction to stakeholder pressures. Instead of viewing it as a reactive approach, organizations should see enhancing their environmental performance as a proactive measure to gain a competitive edge (Kratzer et al., 2017; Singh et al., 2020). Correspondingly, (Singh et al., 2020) executed research and found that the level of engagement in GI activities influences an organization's environmental performance.

Previous research has indicated that there has been limited attention to the impact of a luxury hotel's GI on HEP (Baah et al., 2024). The connection between GI and its effect on HEP within the luxury hospitality sector remains ambiguous. Further investigation is required to understand the interplay of these factors and their influence on overall service delivery and environmental performance (Fosu et al., 2023). There is a significant absence of comprehensive studies in these specific domains of inquiry, which underscores the necessity for further empirical research to enhance our understanding (Fosu, Yi, et al., 2024; Singh et al., 2020). The significance of this matter cannot be overstated, as the hospitality sector is increasingly under pressure from its primary stakeholders to adopt and implement environmentally sustainable management practices. GI strategies have typically been viewed as reactive measures to satisfy stakeholder demands. However, this perspective is limited and may hinder organizational progress (Singh et al., 2020). Organizations must adopt a more proactive approach aimed at enhancing their environmental performance (Baah et al., 2024; Kratzer et al., 2017; Singh et al., 2020). Organizations can significantly improve their sustainability practices by moving beyond mere compliance and ultimately drive better long-term outcomes. Based on this, we contend that a correlation exists between GI and HEP (Singh et al., 2020). Establishing a mechanism that aligns with the organizational objectives and ensures the continuity of environmental performance (Aftab et al., 2023). The argument is further reinforced by the fundamental notions of NRBV, which emphasizes the importance of utilizing an organization's distinctive capabilities and strengths to achieve optimal environmental performance (Awan et al., 2023). Thus, we propose the following.

H4: Green innovation positively impacts hotel environmental performance.

2.6. GI and Hotel Green Image

Green innovation (GI) incorporates technical progressions that effectively preserve energy, alleviate pollution, promote recycling, and incorporate environmentally conscious product designs and operative conservational management (Fosu et al., 2023). GI intends to enhance an organization's environmental performance from multiple perceptions while offering the organization social benefits and competitive advantage through a positive corporate green image (Fosu et al., 2023). The perception of a green hotel image (HGI) pertains to the environmental aspects of an organization that stakeholders perceive (Amores-Salvadó et al., 2014). Research on how organizations can enhance their green image or foster HEP through adopting GI practices is a promising area for future investigations in the hotel sector (Kim et al., 2019). Preceding scholarships have observed the influence of CSR on corporate green image (Alam & Islam, 2021; Ali et al., 2023) and the use of corporate green image as an interceding factor in the connection between CSR and corporate performance (Fosu et al., 2023). These studies demonstrate that CSR initiatives enhance the HGI when coupled with effective environmental management. This proposition is considered plausible within the framework of the NRBV, as it highlights the potential application of strategic resources to promote green innovation (Fosu et al., 2023), ultimately facilitating the acquisition of HGI.

H5: Green innovation positively impacts the hotel's green image.

3. METHODOLOGY

3.1 Study 1

Study 1 utilized the time-lagged research strategy to test the suggested model empirically. The Prolific data collection service was employed to carry out an online survey aimed at hospitality workers in Italy. The present study was done through a tripartite approach, separating each phase by two weeks. Previous leadership scholarship has indicated that a 2-week interval concerning consecutive rounds of data collecting is optimal (Rasheed et al., 2023). At T1, data on supervisors' GIL style was collected from 347 participants. At the T2,

participants were asked to provide their GDC and GEO information. Of 347 participants, 321 submitted scores on (GDC) and (GEO) at T2. Following the T2 wave, 321 participants evaluated the GI at T3, which took place two weeks later. After identifying multivariate outliers, 18 responses were removed from the data set, followed by 303 useable feedback for subsequent analyses. As exclusive codes, the Prolific IDs of the participants were used to correlate and integrate the data they had submitted in the three phases. Among the 303 participants in total, 37.6% were female, and 62.4% were male. Additionally, 24.8% were between 20 and 29, while 35.6% were between 30 and 39. Additionally, 48.2% had a master's degree, and 40.9% had 11-15 years of hospitality experience.

3.2. Study 2

The evaluation of the model involved a thorough analysis using a time-lagged approach and mediation analysis. We employed the Prolific data collecting service for Study 2 from individuals working in the Italian hospitality industry. The research was conducted in two phases, with a one-month interval. Prior research in leadership has signified a temporal gap of 1 month between successive waves of data collection (Khan et al., 2021). At T1, we collected data from 401 participants about GIL, GDC, and GEO metrics. In addition, we collected demographic details, including city-age-level education- and experience in the luxurious hotel sector. Four weeks after T1, we asked 401 participants to provide information on GI, HEP, and HGI at the T2 stage. The T2 survey had a total of 360 participants. Only 349 participants' responses were usable for analysis. After excluding eleven responses identified as multivariate outliers, 349 responses remained for the final analysis.

The data provided by the respondents in two waves were consolidated using their unique Prolific IDs as codes. Out of the 349 participants who took the survey, 63.3% were males, and 36.7% were females. At the same time, 35.2% were from 30 to 39 years, and 25.8% belonged

to the 20-29 age category. Moreover, 47.6% had a master's degree, and 38.4% had 11-15 years of hospitality experience. (Please see Table 1 for definitions used).

Table 1: Questionnaire

Variables	No of Items	Sources	Operational Definitions
Green Inclusive Leadership	09	(Carmeli et al., 2010)	GIL represents a model of leadership characterized by accessibility and engagement with hotel staff to promote environmentally sustainable practices. These leaders demonstrate a commitment to achieving significant service objectives within the hotel while prioritizing sustainability at all operational levels.
Green Environmental Orientation	05	(Banerjee, 2002)	GEO refers to a hotel's commitment to environmental stewardship, acknowledging the potential ecological consequences of its operations. It demonstrates a proactive approach to mitigating such impacts, emphasizing the importance of sustainable practices within the hospitality industry.
Green Dynamic Capabilities	07	(Chen & Chang, 2013)	GDC refers to a hotel's capacity to identify both advantageous and adverse conditions in its external environment, implement tailored strategies and resources to adapt to evolving market dynamics, and influence its surroundings through innovations in green products and processes and collaborative efforts.
Green Innovation	08	(Chen et al., 2006)	GI refers to the advancement of products and processes within the hotel industry that emphasize energy efficiency, pollution reduction, waste management, and the development of environmentally friendly product designs.
Hotel Environmental Performance	07	(Kim et al., 2019)	Environmental performance pertains to the outcomes achieved by a hotel through its implementation of various environmental initiatives aimed at mitigating adverse effects on the environment.
Hotel Green Image	05	(Martinez, 2015)	A green hotel image is a collection of perceptions a guest holds regarding a hotel associated with the establishment's environmental commitments and concerns.

Source: Author(s)

4. Results

4.1. Common Method Bias (CMB) and Multi-Collinearity

To minimize the possibility of bias, the investigation rigorously adhered to the procedural measures clearly defined by (Podsakoff et al., 2003). Initially, a prior testing procedure was conducted in the preparatory stage of the survey. A comprehensive review was undertaken to identify potential improvement areas in the layout and items of the study. The questionnaire was created deliberately to distinguish among the predictor and outcome variables. Randomization of the items was implemented to guarantee an impartial approach to particular responses. Therefore, on purpose, every possible wording and configuration of variables that could have induced an effect of priming was avoided. Furthermore, Harman devised a test to evaluate one single variable. The test did not identify any issues, as a solitary element was described for only 36.6% of the disparity within a sample, considerably lesser than the 50% benchmark. This eliminates apprehension concerning “common method bias” (Volberda et al., 2012). A comprehensive analysis was performed to ascertain the relationships among the constructs. The outcomes indicated that the relationships exhibited adequate strength, with coefficients over 0.90 (Lowry & Gaskin, 2014). Ultimately, we measured the variance inflation factors (VIFs) to ascertain the presence of vertical and lateral collinearity among each component (Kock, 2015). Kock (2015) suggests using a collinearity test to evaluate biases of commonly used research methodologies involving the mathematical modelling of structural equations. One way to estimate the potential bias of widely used research methods involving the mathematical modelling of structural equations is by conducting a collinearity test. Variance inflation factors (VIFs) can signify if the model has no common method bias. The model is deemed unbiased if Variance Inflation Factors (VIFs) are 3.30 or lower. Considering the findings of the comprehensive collinearity test, it is evident that the maximum VIF was below

3.30 (ranging from 2.311 to 3.05). This indicates no problems related to common method bias in the dataset used for this investigation.

4.2. Measurement Model (Study 1)

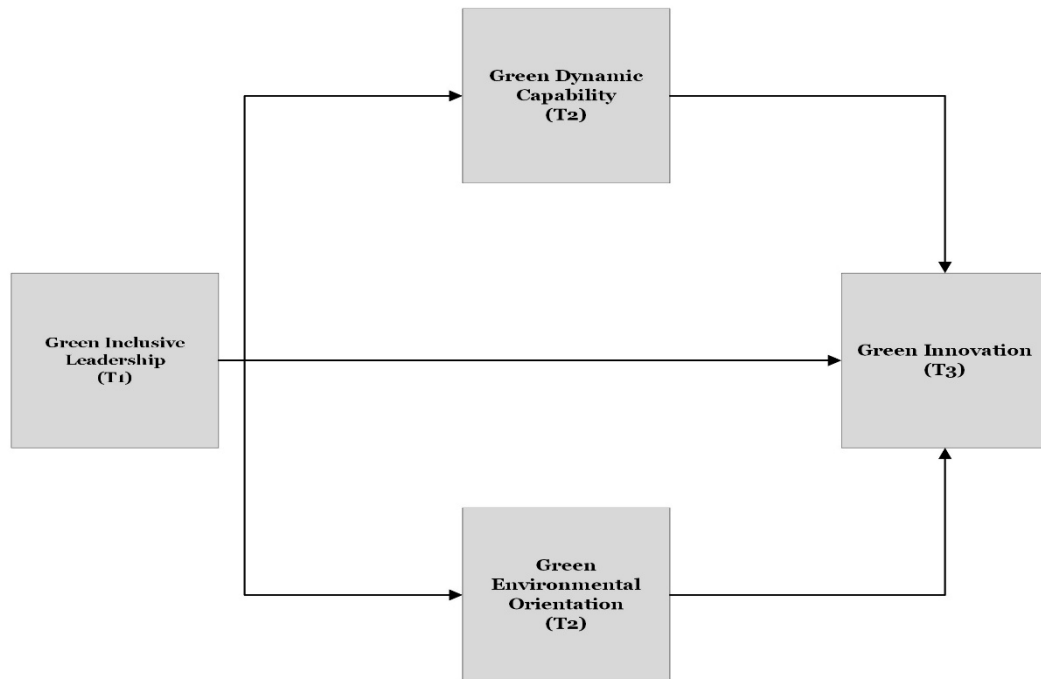


Figure 1: Conceptual Framework for Study 1
Source: Author(s)

The Study 1 model was examined in the research, and its internal consistency was estimated via composite reliability (CR) and Cronbach's alpha metrics. Furthermore, the convergent and discriminant validity of the model was measured through the examination of outer loadings, average variance extracted (AVE), and Fornell-Larcker, in accordance with the methodology described by (Hair et al., 2017). To verify the internal consistency of the study, both Cronbach's alpha and CR must exceed a benchmark of 0.6. (Nunnally, 1967). Table 2 displays the measure of internal consistency.

All scorers with an average (AVE) over 0.5 were kept to measure convergent validity (Hair et al., 2017). However, GDC1, GEO4, and GI2 were excluded. External loadings exceeding 0.6 have been retained for data processing (Hair et al., 2017). Study 1 assessed the

discriminant validity to determine the strength of intra construct correlation compared to inter-construct correlations after confirming convergent validity (Hair et al., 2017). Discriminant validity was assessed by analysing the heterotrait-monotrait ratios (HTMT). It was observed that every value was below 0.85, which aligns with the recommendation of (Hair et al., 2017). Study 1 completed the discriminant validity testing, as indicated in Table 3.

Table 2: Item Loadings, Reliability, and Convergent Validity

	Λ	α	CR	AVE
Green Inclusive Leadership		0.907	0.929	0.684
GIL1	0.860			
GIL2	0.872			
GIL3	0.830			
GIL4	0.826			
GIL5	0.799			
GIL6	0.773			
GIL7	0.716			
GIL8	0.698			
GIL9	0.717			
Green Dynamic Capability		0.875	0.906	0.615
GDC2	0.750			
GDC3	0.763			
GDC4	0.756			
GDC5	0.827			
GDC6	0.836			
GDC7	0.771			
Green Environmental Orientation		0.789	0.864	0.615
GEO1	0.819			
GEO2	0.817			
GEO3	0.686			
GEO5	0.807			
Green Innovation		0.878	0.905	0.579
GI1	0.684			
GI3	0.714			
GI4	0.804			
GI5	0.833			
GI6	0.809			
GI7	0.813			
GI8	0.655			

Source: Author(s)

Table 3: Discriminant Validity (HTMT Criterion)

	GDC	GEO	GI	GIL
GDC				
GEO	0.780			

GI	0.771	0.810	
GIL	0.652	0.646	0.408

Note: All HTMT values are < 0.85

Source: Author(s)

4.3. Structural Model (Study 1)

The study of the structural model involved a sequential evaluation of all hypotheses. Firstly, the influence of T1- GIL on T3- GI was investigated. The impact of T2-GDC and T2- GEO on T3-GI was examined in Study 1 after the causal relationship between T1-GIL and T2- GDC and T2-GEO was examined. To determine the value of direct pathways and the predicted average errors, we employed 5,000 bootstrap resamples (Ringle, 2005). Based on the data presented in Table 4, it is evident that T1- GIL has a noteworthy influence on T3- GI ($\beta = 0.574$, $t = 2.58$, $p = 0.010$). As a result, H1 is supported. In addition, it is evident from the statistical analysis that T1- GIL has a substantial influence on T2- GDC ($\beta = 0.549$, $t = 12.70$, $p < 0.000$) and T2- GEO ($\beta = 0.571$, $t = 10.2$, $p < 0.000$). It has been determined that hypotheses H2 and H3 are supported. Study 1 confirmed the significant impact of T2-GDC ($\beta = 0.493$, $t = 8.00$, $p < 0.000$) and T2-GEO ($\beta = 0.474$, $t = 7.19$, $p < 0.000$) on T3-GI. Therefore, Table 4 offers evidence in favour of H2a and H3a. (Refer to table 4)

Table 4: Structural Equation Model

Hypotheses	Relationships	Sample Mean	Standard Deviation	T statistics	P values
H1	GIL -> GI	0.574	0.069	2.580	0.010
H2	GIL -> GDC	0.549	0.050	12.708	0.000
H2a	GDC -> GI	0.493	0.051	8.003	0.000
H3	GIL -> GEO	0.571	0.053	10.211	0.000
H3a	GEO -> GI	0.474	0.061	7.190	0.000

Source: Author(s)

4.4. Mediation Analysis (Study 1)

In study 1, the researchers evaluated T2-GDC and T2-GEO to assess if they mediate the association between T1-GIL and T3-GI, as shown by H2b and H3b.

The results show that when the mediator is included in the model, the direct effect is positive and statistically significant ($\beta=0.58$, $t=0.53$, $p=.010$). The study found substantial indirect effects for T2-GDC ($\beta=0.257$, $t=6.244$, $p<.000$) and T2-GEO ($\beta=0.279$, $t=8.079$, $p<.000$). According to the results, the relationship between T3-GI and T1-GIL is partly mediated by T2-GDC and T2-GEO in the first study, as shown in table 5.

Table 5: Mediation Outcomes

Total effect (T1- GIL-> T3 - GI)		Direct effect (T1- GIL-> T3 - GI)		Indirect Effects of T1- GIL on T3- GI				
Coefficient	P-value	Coefficien t	p-value		Coefficien t	SD	T value	P- Values
0.53	0.000	0.58	0.010	H2b: T1 - GIL -> T2 - GDC - > T3 - GI	0.257	0.041	6.244	0.000
				H3b: T1 - GIL -> T2 - GEO - > T3 - GI	0.279	0.034	8.079	0.000

Source: Author(s)

4.5. Measurement Model (Study 2)

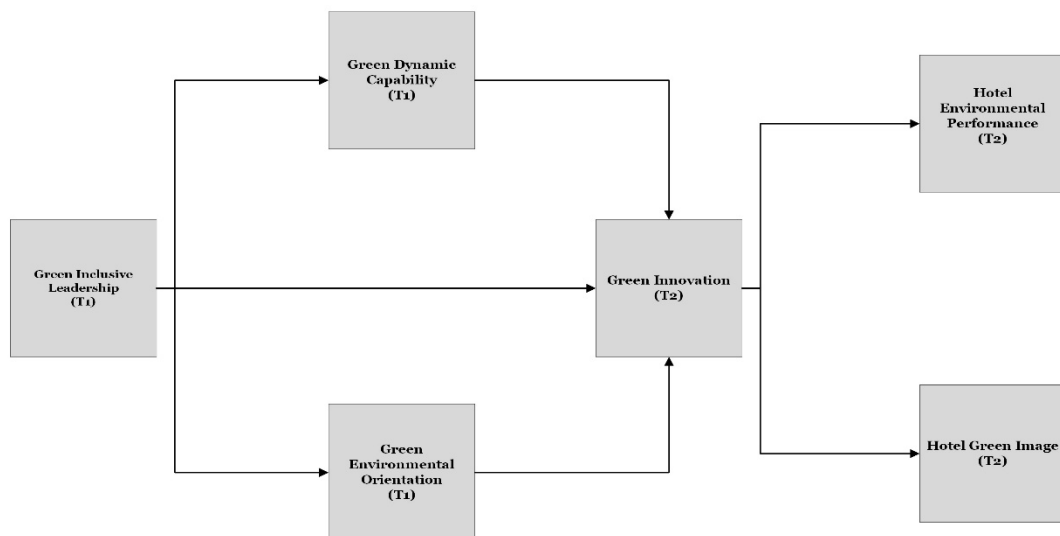


Figure 2: Conceptual Framework for Study 2

Source: Author(s)

Before analysing the study 2 model, the researchers conducted an internal consistency assessment utilizing Cronbach's alpha and composite reliability (CR) metrics. As outlined by Hair et al. (2017), the convergent and discriminant validity of the model was assessed through

the investigation of peripheral loadings, average variance extracted (AVE), and Fornell-Larcker. To determine the internal consistency of the research, Cronbach's alpha and CR scores need to exceed the lowest acceptable level of 0.6 (Nunnally, 1967). Table 6 presents the results that demonstrate a high level of internal consistency. An analysis was conducted on the AVE ratings to assess the convergent validity. The findings indicate that each AVE value exceeds the minimum permissible value of 0.5, as established by (Hair et al., 2017). The indicators' reliability was assessed by estimating the outer loadings. According to Hair et al. (2017), values greater than 0.6 were kept for final data analysis. At this step, it was seen that no items were excluded because their factor loadings were above the required threshold of 0.6.

After validating the convergent validity, Study 1 then assessed the discriminant validity by comparing the correlation within the same construct to the correlation between different constructs, as specified by (Hair et al., 2017).

Upon examining the heterotrait-monotrait ratios (HTMT), we discovered that all values were less than 0.85, which aligns with the recommendation provided by (Hair et al., 2017). Study 2 has efficaciously passed the discriminant validity testing. (Refer to Table 7)

Table 6: Item Loadings, Reliability, and Convergent Validity

	Λ	α	CR	AVE
Green Inclusive Leadership		0.911	0.931	0.693
GIL1	0.812			
GIL2	0.831			
GIL3	0.861			
GIL4	0.830			
GIL5	0.851			
GIL6	0.809			
GIL7	0.779			
GIL8	0.791			
GIL9	0.734			
Green Dynamic Capability		0.933	0.946	0.714
GDC1	0.815			
GDC2	0.846			
GDC3	0.878			
GDC4	0.819			
GDC5	0.835			
GDC6	0.890			

GDC7	0.870			
Green Environmental Orientation		0.910	0.933	0.737
GEO1	0.775			
GEO2	0.891			
GEO3	0.890			
GEO4	0.860			
GEO5	0.872			
Green Innovation		0.937	0.948	0.696
GI1	0.857			
GI2	0.883			
GI3	0.823			
GI4	0.860			
GI5	0.834			
GI6	0.765			
GI7	0.808			
GI8	0.837			
Hotel Environmental Performance		0.933	0.944	0.681
HEP1	0.848			
HEP2	0.818			
HEP3	0.828			
HEP4	0.871			
HEP5	0.806			
HEP6	0.872			
HEP7	0.759			
Hotel Green Image		0.917	0.938	0.751
HGI1	0.834			
HGI2	0.909			
HGI3	0.867			
HGI4	0.866			
HGI5	0.854			

Source: Author(s)

Table 7: Discriminant Validity (HTMT Criterion)

	HEP	GDC	GEO	GI	HGI	GIL
HEP						
GDC	0.716					
GEO	0.708	0.789				
GI	0.638	0.771	0.802			
HGI	0.668	0.627	0.629	0.760		
GIL	0.439	0.476	0.582	0.563	0.421	

Note: All HTMT values are < 0.85

Source: Author(s)

4.6. Structural Model (Study 2)

The examination of the structural model involved a thorough and systematic analysis of all assumptions in a sequential manner. Study 1 explored T1-GIL's effect on T2-GI, while Study 2 examined T1-GDC and T1-GEO's impact on T2-GI. Furthermore, the study also estimated the effect of T2-GI on T2-HEP and T2-HGI. To assess the relevance of direct paths and quantify the mean errors, a total of 5,000 bootstraps resamples were utilized (Ringle, 2005). As shown in Table 8, T1-GIL influences T2-GI positively and statistically significant ($\beta = 0.209$, $t = 3.42$, $p = 0.001$). Hypothesis 1 is supported by Study 2. Furthermore, it is apparent that T1- GIL has a strong and positive influence on both T1- GDC ($\beta = 0.899$, $t = 47.73$, $p < 0.000$) and T1- GEO ($\beta = 0.893$, $t = 38.48$, $p < 0.000$). It has been determined that hypotheses H2 and H3 are supported.

Study 2 demonstrated that T1-GDC and T1-GEO strongly impact T2-GI, as evidenced by the significant beta coefficients and t-values. Thus, it can be concluded that both H2a and H3a are substantiated. The results of study 2 confirmed the substantial effect of T2-GI on T2-HEP ($\beta = 0.877$, $t = 37.56$, $p < 0.000$) and T2-GI on T2-HGI ($\beta = 0.88$, $t = 45.62$, $p < 0.000$). Therefore, H4 and H5 are being supported. (Refer to table 8)

Table 8: Structural Equation Model

Hypothes es	Relationshi ps	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
H1	GIL -> GI	0.209	0.061	3.420	0.001
H2	GIL -> GDC	0.899	0.019	47.738	0.000
H2a	GDC -> GI	0.305	0.063	4.838	0.000
H3	GIL -> GEO	0.893	0.023	38.486	0.000
H3a	GEO -> GI	0.455	0.062	7.357	0.000
H4	GI -> HEP	0.877	0.023	37.567	0.000
H5	GI -> HGI	0.888	0.020	45.627	0.000

Source: Author(s)

4.7. Mediation Analysis (Study 2)

Study 2 evaluates T1-GDC and T1-GEO to see if they mediate the relationship between T1- GIL and T2-GI, as proposed by H2b and H3b. Adding the mediator in the model had a noteworthy and positive direct impact ($\beta=.20$, $t= 0.88$, $p=.001$). Substantial indirect impacts

were found for T1-GDC ($\beta=0.274$, $t=4.87$, $p<.000$) and T1-GEO ($\beta=0.406$, $t=7.22$, $p<.000$), respectively. Thus, the results suggest a degree of mediation in research 2. This suggests that the impact of T1- GIL on T2- GI in study 2 is partially mediated through T1- GDC and T1- GEO. Refer to table 9.

Table 9: Mediation Outcomes

Total effect (T1- GIL-> T3 - GI)		Direct effect (T1- GIL-> T3 - GI)		Indirect Effects of T1- GIL on T3- GI				
Coefficien t	P- value	Coefficie nt	p-value		Coefficien t	SD	T value	P- Values
0.88	0.000	0.20	0.001	H2b: T1 - GIL -> T2 - GDC -> T3 - GI	0.274	0.056	4.873	0.000
				H3b: T1 - GIL -> T2 - GEO -> T3 - GI	0.406	0.057	7.223	0.000

Source: Author(s)

5. DISCUSSION

First, the results suggest that GIL is positively connected with organizational GI. Leaders prioritizing inclusivity foster a culture that values innovation and adaptability, accepting fresh ideas and alternative approaches (Thabet et al., 2023). Such leaders encourage employees to explore various approaches to environmental changes, fostering a learning-based culture from achievements and setbacks (Shafaei et al., 2024). The GIL commitment to continuous development and innovation empowers hotel organizations to stay ahead of emerging sustainability trends and maintain their competitiveness in the market through product and process innovation. This is also consistent with the theatrical underpinning rooted in NRBV, which scrutinizes the potential of organizational resources (GIL) to yield environmental and strategic benefits (Niazi et al., 2023). The GIL approach emphasizes achieving green organizational goals while considering subordinates' perspectives. According to the results, when leaders are accessible and open to discussing environmental concerns, employees tend to perform better (Aboramadan et al., 2022). GIL guides the employees in producing and disseminating green concepts and strategies that reduce the negative impact of the hotel's carbon

and traditional goods emissions, resulting in GI. These findings corroborate prior observed outcomes in the hotel business, demonstrating that GIL practices impacted employees' innovation (Aboramadan et al., 2022) and green creativity (Bhutto et al., 2021). This study is distinct from the prior one due to the limited research conducted thus far on directly examining the influence of GIL on GI. This increases the significance of the existing body of literature concerning GIL.

Second, the results indicate a positive correlation among the variables GIL, GDC, and GEO, aligning with the theoretical model proposed by the NRBV (Hart, 1995). NRBV highlights the importance of developing capabilities like GDC and GEO to promote green initiatives in the hospitality industry. The finding reveals the immense potential of GIL in elevating the GDC and GEO within the hotel industry. Hotel organizations with strong GIL leadership tend to have higher GDC and GEO, indicating a positive correlation. Therefore, it is vital for hotel organizations that aim to expand their GDC and GEO to possess GIL.

Third, the findings of the mediation examination in both inquiries were the same. Studies 1 and 2 confirm that GIL positively influences GI, GDC, and GEO, which leads to improved GI. This shows partial mediation. The study's outcomes propose that GIL is crucial in promoting conservational consciousness and fostering green innovation behavior within the organization (Begum et al., 2022). It can be determined that GIL exerts a considerable impact on GDC, GEO and GI. The results align with previous research on leadership in other industries (Ahmad et al., 2022b; Begum et al., 2022). Moreover, GDC and GEO are proposed to partially intercede in the association between GIL and GI within the hospitality industry. This suggests that GIL can directly influence GI and have an indirect positive effect through its interactions with GDC and GEO. The adoption of GIL enhances an organization's ecological awareness and involves its workers in creative strategies to tackle the degradation of the environment. Improving the HEP

and HGI in the hospitality business is a direct outcome of organizations' enhanced capacity to obtain, execute, or improve their understanding of GI and the integration of SDGs.

Fourth, the study results show that GI directly impacts HEP and HGI. The research findings indicate that a hotel organization's GI can influence both the HEP and HGI positively. These findings align with previous studies conducted outside of the hospitality industry context (Akhtar et al., 2024; Ha et al., 2024; Mehmood et al., 2024). Unlike prior investigations that primarily focused on the linkage between corporate green image and CSR as a pivotal element (Alam & Islam, 2021; Ali et al., 2023), this research broadens the scope by exploring how the GI factor interacts more comprehensively with HGI. Integrating GIL, GDC, GEO, and GI in environmental investigations is critical for improving the environment.

The study's findings indicate that by implementing green innovations and sustainable practices, hotels can significantly reduce carbon emissions, minimize food and water waste, and decrease the carbon footprint associated with extensive transportation distances. Renewable energy sources can substantially mitigate greenhouse gas emissions while enhancing environmental performance. This strategy not only sustains but can also improve a hotel's operational efficiency and environmental reputation, positively impacting all stakeholders' perceptions. These sustainable initiatives reduce the industry's overall ecological footprint, ensuring adherence to global sustainability goals.

5.1.Theoretical implications

Firstly, the study indicates that GIL acts as an essential indicator of GI, which serves as an improved expression of the GI behavior of organizations. Therefore, the study contributes to the prevailing corpus of research, which mainly focuses on verifying the connection between inclusive leadership and employees' environmentally friendly behaviour (Thabet et al., 2023). Even though scholars have investigated the factors that influence GIL and GI, their innovation assessments have been limited to the viewpoint of employees (Aboramadan et al., 2022). Prior

research has neglected to analyze the possible direct influence of GIL on organizational green behaviour (GI).

Second, the study underlines the importance of green GIL in encouraging GI. The interceding roles of GDC and GEO augment this influence. GEO and GDC may promote innovative organizational behavior that can contribute to a more sustainable future, mainly green innovation. Furthermore, prior studies in the context of GIL have shown that leaders may have a significant influence on behavioral impacts like psychological safety and self-esteem in their workforce (Shafaei et al., 2024), climate for green initiative (Thabet et al., 2023), and green psychological climate and work-engagement (Bhutto et al., 2021). Still, there is a scarcity of academic inquiry into the influence of an inclusive leadership style on environmentally friendly innovation within the hospitality organizational setting, in combination with these mediating factors. As a result, our study offers fresh theoretical insights within this context.

Moreover, the study statistically highlights GI's influence on luxury hotels' HEP and HGI. GI practices can aid hotel organizations in gaining societal acceptance because of their positive and reputable image. GI can lower a hotel's marketing expenditures and enhance internal goods and procedures, improving the ecological performance of an organization. In the same vein, GI has the potential to legitimize day-to-day operations from the perspective of personnel and the general public (Fosu, Fosu, et al., 2024). Previous studies have overlooked the direct connection of GI with HEP and HGI. There is still an absence of academic inquiries concerning the effect of GI within the organizational context in conjunction with HEP and HGI. Consequently, our study offers fresh theoretical insights within this context.

5.2. Real-world implications

First, our research firmly supports the employment of GIL amongst hospitality workers to encourage GI within the hospitality sector of Italy, as the findings indicate that GIL substantially impacts GI. It is recommended that hotels that prioritize environmentally

sustainable business practices prioritize GIL conduct (Bhutto et al., 2021). Study findings disclose that GIL plays a noteworthy part in driving GI within a hotel organization by encouraging inclusivity, valuing diversity, forming alliances, boosting employee engagement, enhancing customer satisfaction, and building a culture of green innovation. To promote environmentally sustainable practices in terms of green initiatives (GI) within their organizations, hotel managers can establish a culture of open dialogues regarding conservational responsibility, cultivate healthy interpersonal associations with hotel personnel, and motivate the workforce to generate innovative green-related ideas (Begum et al., 2022; Bhutto et al., 2021).

Furthermore, to attain green innovation (GI), luxury hotels must concentrate on improving their green dynamic capability (GDC) and green environmental orientation (GEO). GDC and GEO are essential organizational resources that empirically facilitate the integration and application of creative, ecologically driven ideologies, the acquisition of sustainable knowledge, and the achievement of responsible production. Successful implementation of ecologically responsible activities necessitates the development of advanced abilities and the efficient use of resources. Hospitality firms ought to invest in renewable energy initiatives to ethically develop environmentally sustainable products and processes. Furthermore, it is advisable to adhere to the 7R framework of circular economy principles. These actions correspond with sustainable development goals, specifically SDGs 7, 8, and 9. These qualities are crucial in promoting sustainable development and innovation (Yuan & Cao, 2022). Managers must acknowledge the importance of GDC and GEO within the operative frame of the hospitality sector. By possessing this awareness, they are capable of efficiently overseeing and directing the strategic trajectory of environmentally sustainable innovation initiatives, as opposed to merely responding to external obligations like complying with regulations related to the environment or addressing environmental issues in the services sector. Furthermore,

integrating green dynamic capability and green environmental orientation is expected to become a substantial success metric for green innovation in the hotel and services industries. Organizations should prioritize environmental management to improve their image with all stakeholders. Nevertheless, services industries are increasingly pressured to incorporate ecologically friendly practices into every aspect of their operations, from products to processes and services, due to the rising demand for GI (Cui et al., 2023).

Lastly, GI contributes significantly to the cultivation of sustainable growth initiatives in the hotel businesses/service arena (Kim et al., 2023). To diminish the adversative environmental effects of a hotel's operative activities, GI is obligatory. Through technological advancements and improved resource effectiveness, GI enhances green performance and brand reputation while contributing to plummeting the hotel's carbon footprint. GI measures aid the hotel in lessening its ecological impression and support SDG 7, accentuating affordable and clean energy access. Moreover, implementing GI yields financial benefits and guarantees adherence to regulatory requirements. By implementing green practices, luxurious hotels can enhance their long-term competitive advantage, reduce their environmental footprint, and attain high levels of green performance. Moreover, realizing green innovation strategies in products and processes has the potential to condense the existence of damaging materials in disposable and recycled products, which helps an organization to exploit it as a means to differentiate itself from its competitors and augment its ecologically friendly standing and green performance. Integrating green innovation is indispensable for nurturing HEP and HGI within the luxury hospitality sector. By adopting sustainable practices, the industry can enhance its operational efficiency, reduce its carbon footprint, and fulfil the increasing consumer demand for eco-friendly services. Investing in green technologies and practices advances environmental sustainability while enabling businesses to succeed in an increasingly competitive market that prioritizes social responsibility. These insights enrich our understanding of sustainable

organizational behaviour and expand our knowledge of organizational learning theories about environmental sustainability.

5.3. Future Research Avenues and Limitations

A thorough mediation model with time-lagged data examined the link between GIL and GI. Future studies may find different results from the experimental design. Furthermore, the survey was conducted specifically at luxurious hotels in renowned vacation hotspots in Italy. Exercising extreme caution is crucial when deriving inferences from our findings. Subsequent investigations should consider various regional variables and diverse hotel categories, considering their dimensions and distinctive attributes. Participating in such experiments will improve the ability to apply the findings to a broader range of settings. Moreover, we evaluated our model in Italy, a country renowned for emphasizing eccentricity and individualism. In this regard, the tourism sector, and the hotel sector in particular, is highly susceptible to the impending problems resulting from environmental deterioration (Fermani et al., 2016). Executing empirical investigations in communities with a strong sense of collectivism can yield various outcomes. Furthermore, this study has examined the impact of GIL on GI within the luxury hospitality sector. Subsequent research efforts may explore the applicability of different leadership styles across various manufacturing and service sectors to derive more generalized conclusions.

Conclusion

This study sought to signify whether and to what degree GIL supports green innovation in the luxury hotel sector directly and indirectly via GDC and GEO. We additionally examined how GI influences HEP and HGI in luxurious hotels in Italy. The results suggest that incorporating GIL into an organization can strengthen its dedication to ecological sustainability. This approach encourages the organization to develop innovative strategies to address environmental damage and integrate SDGs into its business practices. The research findings

have also indicated that improving HEP and HGI in the hotel industry can be attributed to enhanced organizational capacity to attain, execute, and improve their understanding of green innovation. The study's distinctive contribution is its use of a dual-path mediation model. This concept has not been previously examined in the hospitality context about the connection between GIL and GI.

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