Eco-centric Success: Stakeholder Approaches to Sustainable Performance via Green Improvisation Behavior and Environmental Orientation in the Hotel Industry

Abstract

This research delves into the connection between green improvisational behavior (GIB), environmental orientation (EO), a green creative climate (GCC), and how they influence the environmental (EP) and social performance (SP) in the hotel industry. Through the perspective of stakeholder theory, the study examines how these factors work together to cultivate an atmosphere. The data was carefully collected through surveys at Pearl Continental Hotels & Resorts branches, a known chain of luxury hotels in Pakistan. Using Structural Equation Modelling for analysis, the study reveals insights for the hospitality industry in promoting a culture that encourages innovative and sustainable practices through environmentally friendly actions. By understanding what drives the development of an environment, hotels can create an organizational culture that supports eco-friendly initiatives. Additionally, this research contributes to existing knowledge by investigating the role of focus in effectively implementing and utilizing practices that promote a green creative climate for improved environmental and social performance within the hotel industry. The results provide implications for practices within hotels and offer theoretical perspectives on the factors driving sustainability efforts in this field.

Keywords: Green improvisational behavior; Environmental orientation; Green creative climate; Social performance; Environmental performance; Stakeholder theory.

Introduction

Over the past few decades, policymakers and academia have become increasingly concerned with the implications of carbon emissions and climate change. Based on information from the Energy Information Administration (USEIA, 2013), it is expected that by 2035, global carbon emissions will reach 42.4 metric tons, 42.7% more than in 2007. In this regard, over the past few years, sustainability, favorable to long-term environmental, social, and economic development, has become widespread and gained much attention. The tourism and hospitality industry has also seen a proliferation of such initiatives (Al-Hawari et al., 2021; W. Li et al., 2020). Moreover, there is an increasing recognition of incorporating sustainability initiatives into strategic planning within the tourism and hospitality industry. These efforts are now critical to corporate aims, fostering community involvement and offering diverse, environmentally sustainable hotels (Alvarez-Risco et al., 2020). The hospitality sector's rapid growth yields positive environmental and social impacts (Rehman et al., 2020) while significantly straining the ecological system (Mishra et al., 2022). The increasing awareness of environmental issues (Segarra-Ona et al., 2012), the alignment of economic and ecological interests, and other factors such as digitization in recent years have emphasized the need to improve the efficacy and efficiency of hotels (Pereira et al., 2021).

Therefore, the number of "green" hotels striving to be more responsible for the environment has increased directly. Kraus et al. (2020) studied the impact of corporate social responsibility on improving environmental performance. Previous studies (Del Giudice & Della Peruta, 2016; Dubey et al., 2015) have shown that employees inside an organization, regardless of their position of responsibility or function, have an essential impact on environmental performance. However, the significance of top management involvement becomes essential because they possess substantial authority that affects the organization's environmental performance (Hambrick & Quigley, 2014; Singh et al., 2019).

Simultaneously, GIB, which involves the convergence of composition and execution within a specific timeframe, is an essential green strategic resource for businesses seeking to improve their operations or drive innovation in the face of stiff competition (Ciuchta et al., 2021; Fultz & Hmieleski, 2021). There are various perspectives on why GIB supports innovative organizational practices. According to one viewpoint in a study, improvised actions are a response mechanism

that involves modifying existing plans to accommodate unforeseen interruptions(Moorman & Miner, 1998). Organizations with adaptability and prompt responsiveness can enhance their capacity for innovation on new opportunities by effectively sensing the external environment and engaging in internal reconfiguration processes (Liu et al., 2018). Hence, due to the rising concern for the sustainability of the natural environment, corporate decision-makers have placed greater importance on green issues. According to the World Economic Forum's 1,000 business, policy, and thought leaders (Ip, 2019), the significance of EO is emphasized because these issues are ranked as the top risks the world faces based on impact and likelihood. Therefore, the hospitality literature has recently focused on the issue of encouraging employees to participate in environmentally friendly practices to enhance sustainable performance (Rezapouraghdam et al., 2018).

So, in response to the reservations of significant stakeholders on corporate environmental sustainability, some hotels have implemented environmental initiatives and integrated green practices (Elkhwesky, 2022). Thus, the literature on sustainable practices highlights the importance of looking at these practices from stakeholders' viewpoints. Based on stakeholder theory (Berman et al., 1999; Donaldson & Preston, 1995), it is argued that an organization is obligated to recognize its ethical and moral obligations towards its stakeholders while determining its mission and objectives. It involves integrating social and environmental factors into business operations, considering sustainable practices a vital aspect of organizational management (Farmaki, 2019; Theodoulidis et al., 2017). Therefore, in this study, we utilized stakeholder theory to explore the impact of GIB and EO practices on attracting, developing, retaining, and sustaining green employees. Additionally, we examined how these practices contribute to the hotel industry's ability to foster a GCC, leading to enhanced SP and EP. As a result, the current study is being conducted to provide answers to two significant research questions, which are as follows:

1) How does green improvisational behavior affect the green creative climate of the Hotel Industry?
2) Is environmental orientation relevant for implementing and using green creative climate practices for the Hotel's Environmental and Social performance?

This study holds significance in exploring the interplay between GIB, EO, GCC, and the SP and EP of the hotel industry. By delving into these connections, the research provides crucial insights

into effectively integrating sustainable practices and fostering environmentally responsible hotel behavior. Firstly, this research focuses on identifying the elements that drive GCC and providing practical suggestions for hotel managers to nurture such atmospheres effectively. By highlighting the importance of actions, the study emphasizes its crucial role in promoting innovation and sustainability within the hotel industry.

By understanding these factors, hotels can strategically promote a culture that fosters creativity and prioritizes environmental and social stewardship. Moreover, the implications of this research go beyond the hotel industry, offering insights applicable to different sectors looking to enhance their sustainability efforts. Businesses across various fields can embark on a transformative path toward a more sustainable future by acknowledging the interconnectedness between GIB, EO, GCC, SP, and EP.

In addition, the current study contributes to the literature by examining the relationship of GIB with GCC using stakeholder theory. It provides an opportunity to understand how hotels implement sustainability and the effect of EO on inculcating sustainable practices. The hotel industry is very broad and incorporates various sectors that have a unique mode of operations and stakeholders. Besides, hotels can develop more sustainable characteristics to maintain relationships with more stakeholder groups and leverage many other benefits of utilizing GIB. The second primary stakeholder group impacted by GIB includes environmentally conscious guests. Recently, many tourists have made the experience very clear that they consider their hotel's sustainability when searching for accommodation. As a result, hotels that imply a high commitment to sustainability and the need to adapt their footprint to keep a desirable guest in sight are expected to keep and attract these guests. The local community is the third potential stakeholder directly related to a hotel that uses GIB. Hotels that prioritize sustainability and engage in improvisational practices can significantly impact the surrounding environment and community. Lastly, adopting GIB can also have a beneficial impact on employees in the hotel industry. Encouraging employees to participate in sustainability initiatives and promoting their participation in improvisational practices can result in higher job satisfaction, motivation, and a sense of pride in being part of an organization that prioritizes the environment. Thus, the study contributes to both practical knowledge and theoretical understanding of the relationship

between GIB, EO, GCC, SP, and EP, offering valuable insights for strategic planning in the hotel industry.

Theoretical Foundation and Hypothesis Development

Stakeholder theory

Stakeholder Theory suggests that within the natural environment, businesses are motivated to adopt a range of ecological practices and achieve sustainable environmental performance due to the influence exerted by different stakeholders (Darnall et al., 2010; Sarkis et al., 2011). According to Freeman (2010), stakeholders are "any group or individual who can influence or is influenced by the achievement of an organization's purpose. Stakeholders are becoming more concerned about the environment, so organizations face more ecological pressure. This pressure requires companies to develop behaviors, policies, and strategies consistent with their environmental objectives (W. Yu & Ramanathan, 2015). Our study adopts Stakeholder Theory as its conceptual framework for its efficacy in explaining organizational motivations and behaviors, particularly in environmental sustainability(Tariq et al., 2017). This theory posits that businesses respond to diverse stakeholders' expectations and influences, providing valuable insights into the hospitality industry's engagement with ecological concerns (Dogru et al., 2023). Recognizing the pivotal roles of primary and secondary stakeholders, our research highlights how Stakeholder Theory guides the strategic integration of sustainable practices and environmentally responsible behaviors in the hospitality industry. This lens offers a refined understanding of how stakeholder pressures influence decision-making, leading to practices that enhance social and environmental performance. Moreover, our approach goes beyond mere compliance by fostering a green creative climate and stimulating innovative solutions in the hospitality sector. This approach establishes a foundation for investigating sustainable practices and their broader implications for environmental sustainability. Stakeholder Theory, aligning with the industry's complexities, provides a robust framework for exploring the dynamics between stakeholders, sustainable practices, and environmental outcomes.

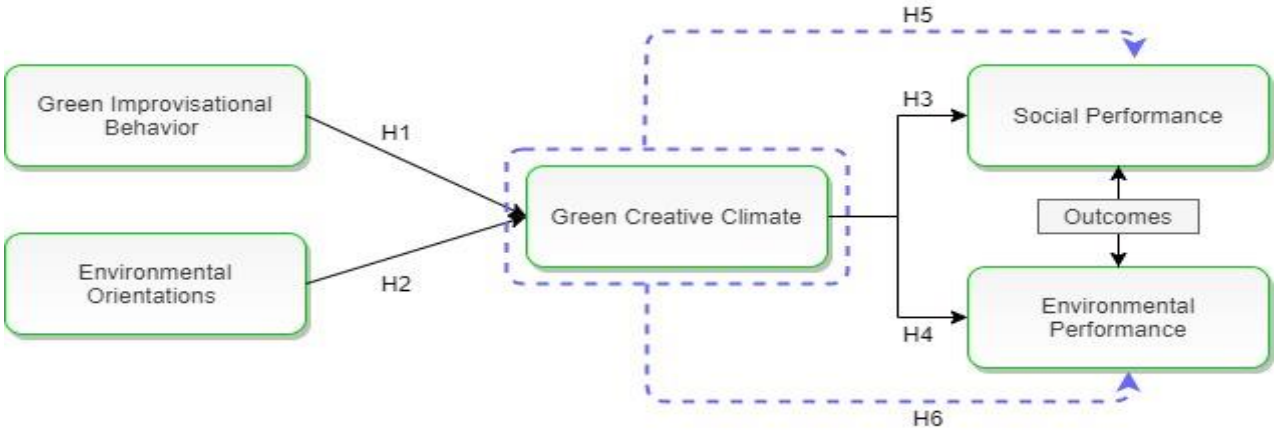

Fig 1. *Theoretical framework*

Green improvisational behavior and green creative climate.

The organizational climate is composed of the fundamental attributes of an industry, such as emotions, behaviors, and attitudes, which are independent of how their constituents perceive or understand them (Ekvall, 1996). Employees in a creative climate receive indications regarding the importance of creative behavior. By comprehending and utilizing these cues, personnel frequently respond to expectations and adjust their creative behavior to enhance their personal satisfaction and sense of pride(Scott & Bruce, 1994). Additionally, Creative climate advocates emphasized two work-climate dimensions: (1) support for creativity and (2) resource provision(Jaiswal & Dhar, 2015). Ren & Zhang (2015) define support for innovation as encouraging team members or employees to independently explore creative and innovative ideas and foster an environment that values diversity and creative work within an organization. Scholars introduced the term "improvisational behavior" into organizational behavior studies in the 1990s. Behavior-based thinking in an organization involves collaborative strategies among staff to promote innovation. Because of that, employees are more inclined to exhibit creative behaviors when they perceive their organization provides essential resources and support for innovation (Yan & Zhang, 2017). According to the definition, improvisational behavior refers to diverging from existing organizational norms and rapid creative decisions to handle unexpected situations. Improvisation is the combination of "spontaneity" and "innovation" (Vera & Crossan, 2005). In the hospitality industry, green improvisational behavior refers to spontaneous and

adaptive actions taken by individuals or hotels to enhance their social and environmental performance. This behavior is facilitated by a 'green creative climate,' signifying an environment encouraging innovative and creative approaches, specifically promoting sustainability and environmentally friendly practices. Therefor, based on the discussion the following hypothesis has been formulated:

***H1**. Green improvisational behavior positively and significantly impacts the green creative climate.*

Environmental orientation and green creative climate.

As the global economy evolves rapidly, governments and businesses increasingly recognize the significant challenges environmental issues pose. These challenges not only hinder economic development but also impact the performance of firms(Huang et al., 2016).In response to mounting pressure from government regulations and policies, firms have been striving to balance improving their performance and ensuring environmental sustainability(Tang et al., 2018). Elsayed (2006) noted that many studies explore why some companies adopt environmental initiatives while others neglect managing the natural environment. Also, another study by Yu Huo (2019) highlighted that among the various concepts discussed in the environmental management literature, environmental orientation is a crucial construct that guides firms in their environmental practices. Focusing on the hotel industry, Fraj et al. (2015) investigated the impact of environmental strategies on hotel competitiveness. Their data also demonstrate a favorable relationship between environmental initiatives and competitiveness. Our hypotheses suggest a significant relationship between green improvisational behavior, environmental orientation, and green creative climate in the hospitality industry. By fostering spontaneous, eco-conscious actions, organizations can contribute to a climate that promotes innovation and creativity directed towards sustainable practices and also hotels not only contribute to global conservation efforts but also appeal to environmentally conscious consumers, enhancing their reputation and promoting a more sustainable and responsible image in the hospitality sector. Our research aims to empirically explore these connections, shedding light on the interplay between environmental orientation, and creativity in steering the hospitality sector towards a more sustainable future. Based on the discussion, the following hypothesis has been formulated:

***H2.** Environment Orientation has a positive and significant impact on green creative climate.*

Social performance and green creative climate.

Social performance refers to the level of satisfaction among relevant stakeholders in various industries, including clients, end users, the community, and the government (Carter & Jennings, 2002; Govindan et al., 2013). Internal and external sharing can enhance social performance by building social bonds. Collaborating with industry peers and expanding connections within the hospitality sector can encourage social engagement, support networking opportunities, and enhance knowledge sharing (Gregory & Halff, 2017). Therefore, this study emphasizes that in the hospitality industry, SP includes promoting inclusivity, community engagement, and ethical labor practices. To create an environmentally conscious and creative atmosphere, businesses should prioritize social responsibility through fair employment, community partnerships, and active promotion of diversity and inclusion. This enhances ethical values and improves the industry's reputation and attractiveness.

Considering green creativity from an organizational perspective enhances organizational performance in environmental aspects and promotes environmentally friendly behavior. Creativity plays a crucial role in adopting green initiatives and practices that enhance the effectiveness of environmental management systems(Cheng, 2019). There is a growing consensus that organizations should prioritize fostering a culture of creativity to generate innovative solutions and effectively manage environmental systems(Dangelico et al., 2017). In the hospitality industry, a GCC integrates SP and EP. This approach emphasizes sustainable practices, including energy efficiency and waste reduction, while promoting social responsibility through fair employment practices, community engagement, and diversity and inclusion initiatives. By combining eco-friendly measures with a socially conscious mindset, businesses can positively impact the environment and society, enhancing their overall reputation and sustainability. Based on these findings, we propose the following hypothesis.

H3. *Green creative climate positively and significantly impacts social performance.*

Green creative climate and environmental performance.

The concept of EP pertains to the efforts made by organizations to meet and surpass societal expectations regarding the natural environment (Chan, 2005). It involves going beyond the minimum requirements set by rules and regulations(Chen et al., 2015). EP encompasses the

impact of organizational processes, products, and resource consumption on the environment, ensuring compliance with legal environmental requirements(Dubey et al., 2015). Research indicates that achieving EP relies on factors such as producing environmentally friendly products, innovation in green processes and products, and integrating ecological sustainability into business operations and product development (Oliva et al., 2018). While researchers concentrate on various organizational capabilities to achieve EP, they may overlook the most crucial factor for success: GCC. Organizations are willing to change and adjust their strategies to establish an effective environmental management system. They strive to develop innovative products, processes, and technologies that are environmentally friendly and minimize environmental negative impacts (Darvishmotevali et al., 2020). Thus, this study emphasizes that the hospitality industry should prioritize environmental sustainability by focusing on energy efficiency, waste reduction, water conservation, and implementing eco-friendly designs. It is essential for long-term competitiveness and to make a positive global environmental impact by engaging in sustainable initiatives, collaborating with environmental groups, and promoting eco-friendly practices to employees and guests. Therefore, this study provides strong evidence of the robust and positive relationship between GCC and EP and we proposed the following hypothesis:

H4. *Green creative climate has a positive and significant impact on environmental performance.*

The mediating role of green creative climate on social performance and environmental performance.

Developing eco-friendly ideas helps to create sustainable products and services in manufacturing and service industries. However, more detailed research should be done on what drives this green creativity, especially in tourism and hospitality (Bhutto et al., 2021). Similarly, GCC helps organizations create and implement eco-friendly solutions to reduce their carbon footprint and address environmental challenges(Awan et al., 2019). In addition to resources and capabilities, integrating a Green creative climate within an organization is crucial in driving social and environmental performance. In our conceptual model, we propose that a green creative climate mediates green improvisational behavior and social performance and mediates between Environmental orientation and environmental performance. This model proposes a strong justification for our relationship and provides evidence for the validity of the mediation we suggest. We assert that a green creative climate mediates green improvisational behavior and

social performance, as well as between environmental orientation and environmental performance. By cultivating a green creative climate within the organization, we create an environment that fosters innovation, collaboration, and the generation of sustainable ideas. This climate harnesses the knowledge and wisdom of employees in the hospitality industry, leading to sustainable outcomes for modern enterprises.

Moreover, the mediation of green improvisational behavior and social performance indicates that by promoting a green creative climate, we facilitate the implementation of improvisational practices that positively impact social performance, such as enhanced employee satisfaction, increased customer loyalty, and active community engagement. The mediation between environmental orientation and environmental performance also suggests that a green, creative climate is crucial in aligning organizational values and practices with environmental sustainability, thereby driving positive environmental performance outcomes. These strong points validate our conceptual model and highlight the significance of a green, creative climate in achieving sustainable business outcomes in the modern era. The following hypotheses are, therefore, proposed.

***H5**. Green creative climate positively and significantly impacts green improvisational behaiour and Social Performance.*

***H6**. Green creative climate will significantly influence environmental orientation and environmental Performance*

Methodology

Data Collection

Pakistan received 1.225 million international visitors in 2017. As a result, Pakistan's worldwide tourist market share in 2017 was a meager 0.08%, much below its potential (Arshad et al., 2018). Considering that the data-collecting method focuses on Pearl-Continental Hotels & Resorts, which is known as the leading chain of five-star hotels in Pakistan and is associated with the 'Hashoo Group' as stated in previous studies(Afaq et al., 2011; Ullah, 2016). We chose this hotel chain for our study mainly because of its pioneering role in developing a new culture in Pakistan and its exceptional hotel services. This hotel brand is committed to offering innovative amenities while maintaining international quality standards. The chain has eight branches in Pakistan,

located in the four main cities: Lahore, Faisalabad, Rawalpindi, and Peshawar. Pearl Continental Hotel was chosen as our study's main focus due to its affiliation with a prominent chain. This deliberate selection allows us to effectively analyze a substantial portion of the hospitality industry, enhancing our findings' representativeness. This approach emphasizes the importance of consistency and standardization in data collection methodologies.

Additionally, partnering with a well-established hotel chain provides valuable support in logistics, resource availability, and data collection cooperation. In addition, by concentrating on a single chain, we can conduct a more comprehensive analysis of its sustainability practices and their impact on environmental performance. While considering resource limitations and practicality, we acknowledge the potential for conducting future comparative analyses among different hotel chains. These endeavors can enhance our understanding of sustainable practices and their environmental repercussions. The reason for choosing one of Pakistan's leading hotel chains was based on its alignment with our study objectives, which aim to provide strong and impactful findings and contribute to the progress of sustainable hospitality protocols. We employed a self-administered survey questionnaire to gather data from the managerial staff of selected hotels, utilizing simple random sampling. This technique ensures representative groups, providing an equal chance of selection for every individual within the population. It minimizes errors, enabling reasonable generalization of findings from the sample (Thornhill et al., 2009). After excluding 30 incomplete surveys due to missing values or insufficient information, the present study received 290 valid responses. According to Hair et al. (2013), it is recommended that the sample size of 290 should exceed ten times the maximum number of structural paths leading to a specific parameter in the structural model.

According to their Hair et al. (2013) recommendation, this sample size is appropriate. The researchers developed a self-administered questionnaire for this study and collected participants' responses for six months, specifically from March 2023 to August 2023. Recommendations and expert opinions were sought before distributing the response questionnaires to strengthen the credibility and dependability of the measurements used in this research. The questionnaires were created based on existing literature, with an English version supported by appropriate literary sources before being translated into Urdu. As proposed by Sperber et al. (1994), the forward and

backward translation procedure was used for all constructs to guarantee the accuracy of the translation.

The sample's demographic characteristics are detailed in Table 1. Due to limited resources and time, the current study used a non-probability convenience sampling strategy. In an environmental context, the objective of the research model was to develop metrics for evaluating green improvisational behavior, environmental orientations, green creative climate, environmental performance, and social performance. It is critical to acknowledge that the purpose of this study was exploratory.

Pilot testing was performed to evaluate the questionnaire's quality. This assessment included thirty individuals with extensive experience in green strategies. Based on the pilot study's findings, the current study improved the wording of the questions and altered the questionnaire. Following the changes, a second round of pilot research was carried out. This pilot research's positive results ensured that the instrument was appropriate for data collection.

Table 1. Demographics

Particulars (N=290)	Categories	Frequency	Percentage
Gender	Male	193	66.6
	Female	97	33.4
Age	18-25	47	16.2
	26-35	103	44.8
	36-45	55	18.9
	46-55	46	15.8
	56 and over	39	13.4
Qualification	Professional Certificate	138	47.5
	Bachelor	19	6.5
	Master	121	41.7
	Doctor	12	4.1
Job experience	1 year and less	37	12.7
	2-5 years	128	44.1
	6-10 years	84	28.9
	11 years and more	41	14.4
Job Title	Supervisor	17	5.4
	Frontline Manager	174	60
	Senior Manager	81	27.1

Constructs and Items

In the present study, existing scales have been used to assess the constructs. A five-point Likert scale set the measurement items, ranging from (1) strongly disagree to (5) strongly agree with the statement. The present study employs the formative constructs of EO; the sample included items on how Our hotel tries to teach employees about environmental preservation and GIB as a higher-order formative construct; the sample included items such as while designing the new products and services (green innovation), our hotel was very good at anticipating environmental demands. Four items were utilized to evaluate GIB (Zheng et al., 2011), with four items from the same source as EO, as taken from the study by Chan (2012). GCC, the mediating variable, is derived from the (Jirakraisiri et al., 2021) study; the sample included items such as how Our hotel can be described as adaptable and constantly adjusting to green change. The dependent variables that assess EP are derived from the study of Singh et al. (2020) and consist of five items and sample included items environment-friendly practices significantly decrease our hotel's overall costs. Another variable that evaluates SP is taken from Li et al. (2019) and is composed of four items, and sample included items; customers' requirements were met at our hotel.

Results and analysis

Data analysis was conducted using Smart PLS' latest version. The study employed structured equation modeling based on partial least squares (PLS-SEM) to examine the relationships between the variables. PLS-SEM was chosen as the most suitable method for this study because it can measure reflective and formative constructs. In our study, the decision to utilize partial least squares structural equation modeling (PLS-SEM) was carefully considered due to its versatile nature and robustness to non-normal data. The partial least squares structural equation modeling approach can handle complicated research models with numerous latent variables and indicators, ensuring that a wide range of constructs can be studied without strict sample restrictions. It is important due to PLS-SEM's resistance to normality assumptions and its applicability to the analysis of actual data. One of its main features is that PLS-SEM stresses predictive quality, enabling us to use our design to predict what will happen and how accurately.

Measurement model

The measurement model was evaluated using various criteria to assess its reliability and validity, including convergence and discriminant validity. Determination of convergent validity involved analyzing factor loadings (outer loadings), composite reliability, Cronbach's Alpha, and Average Variance Extracted (AVE) using the framework proposed by Hair et al. (2020a). The findings presented in Table 2 demonstrate that all item loadings surpassed the recommended threshold of 0.70, as proposed by Chin et al. (2008). Additionally, the composite reliability values, indicating the degree to which the indicators accurately represent the latent construct, exceeded the threshold of 0.7. Similarly, the average variance extracted, which represents the amount of variance explained by the indicators of the latent structure, surpassed the recommended value of 0.5, as suggested by (Hair et al., 2020b).

To assess the internal consistency and reliability of the observed item variables, Cronbach's alpha was employed, with a minimum threshold of 0.70, as recommended by (Hair et al., 2020). This measure examines the interrelationships among the observed items to determine their reliability. Following widely recognized standards, this study employed various methods to assess the reliability of the measurement model. These included examining average variances extracted (AVE), discriminant, and convergent validity. The reliability assessment revealed that all constructs met the criterion of 0.70 (Leguina, et al., 2015). The results of these reliability and AVE assessments can be found in Table 2.

Table 2. Reliability and Validity

Latent Constructs	Factor loading	Cronbach's Alpha (CA)	Composite Reliability (CR)	AVE
EO	0.857-0.816	0.848	0.897	0.686
EP	0.863-0.850	0.884	0.919	0.741
GCC	0.862-0.842	0.851	0.899	0.692
GIB	0.875-0.833	0.865	0.908	0.712
SP	0.849-0.841	0.847	0.897	0.685

Note(s): EO= Environmental Orientation, EP= Environmental Performance, GCC= Green Creative Climate, GIB= Green Improvisational Behavior, SP= Social Performance.

Discriminant validity

To address issues related to multicollinearity, it is necessary to assess discriminant validity in every study involving latent variables. Discriminant validity refers to the degree to which the

latent constructs used to evaluate the underlying relationships in the study are distinct from one another. The Fornell and Larcker criterion is commonly used to evaluate discriminant validity. In this study, discriminant validity was assessed using the Fornell and Larcker method(Fornell & Larcker, 1981a) by comparing the square root of each construct's average variance extracted (AVE) (represented by diagonal bolded values) with the correlation coefficients between the constructs (defined by off-diagonal values). Sufficient discriminant validity is confirmed when the square root of each construct's AVE is more significant than its corresponding correlation coefficients. Furthermore, discriminant validity requires that none of the constructs in the measurement model are strongly correlated(Fornell & Larcker, 1981b). The results in Table 3 indicate that the factors included in the measurement model satisfied the threshold for discriminant validity as evaluated by the Fornell and Larcker criterion.

Table 3. Fornell-Larcker Criterion

	EO	EP	GCC	GIB	SP
EO	0.828				
EP	0.317	0.861			
GCC	0.550	0.380	0.831		
GIB	0.617	0.446	0.541	0.843	
SP	0.631	0.458	0.584	0.673	0.827

The diagonal values highlighted in bold represent the square root of the average variances extracted (AVEs) of latent variables. They indicate the maximum value in each column or row.

Note(s): EO= Environmental Orientation, EP= Environmental Performance, GCC= Green Creative Climate, GIB= Green Improvisational Behavior, SP= Social Performance.

The measurement model met the Fornell-Larcker criterion, as shown in Table 3. The study found that the Fornell-Larcker criterion may not be enough for assessing discriminant validity in certain situations (Henseler et al., 2015). Ali et al. (2018) propose using the HTMT criterion with the Fornell-Larcker criterion. Hair et al. (2019) found that the HTMT value should not exceed 0.85. The HTMT values were lower than 0.85, as shown in Table 4 (see below). It might be stated simply that the current study follows the discriminant validity criteria.

Table 4. Discriminant validity (HTMT criterion).

	EO	EP	GCC	GIB	SP
EO					
EP	0.358				
GCC	0.645	0.433			
GIB	0.715	0.499	0.626		
SP	0.739	0.527	0.684	0.780	

Note(s): EO= Environmental Orientation, EP= Environmental Performance, GCC= Green Creative Climate, GIB= Green Improvisational Behavior, SP= Social Performance. A threshold limit of HTMT is < 0.85.

Structural Model's Analysis

According to Hair et al., (2017), the validated structural model showed that the independent and dependent variables were interconnected. Analysis of the research model was done using the β values (path coefficient), GOF (goodness of fit), Q^2 (predictive relevance), and R^2 (explanatory power) values. The R^2 value of EP was 0.161 and SP was 0.521, showing that the model has significant potential for prediction (Hair et al., 2017).

Hair et al. (2017) also used blindfolding techniques to evaluate the stone-geisser Q^2 for predictive relevance, which is a more accurate method than R^2. The endogenous variables exhibited strong predictive relevance, as evidenced by the Q^2 values of 0.209 for EP, 0.456 for SP, and 0.342 for GCC, all of which were more significant than zero (Hair et al., 2017). Therefore, to assess the significance of the coefficients, the relevance of the hypothesis was evaluated using the bootstrapping technique with 5000 sub-samples. The coefficients were considered significant if the p-value was below 0.05 and the t-value exceeded 1.96. The significant results of the analysis, with a ß-value of 0.326 and a t-value of 4.078, provide strong evidence supporting a substantial and positive association between GIB and GCC. Therefore, the initial hypothesis (H1) has been confirmed and accepted.

The analysis revealed several significant and positive associations. Firstly, the relationship between EO and GCC was significant (ß-value = 0.348, t-value = 4.400), confirming the acceptance of hypothesis H2. Secondly, the association between GCC and SP also yielded a significant and favorable result (ß-value = 0.340, t-value = 4.631), supporting hypothesis H3. The link between GCC and EP also demonstrated a significant and beneficial outcome (ß-value =

0.195, t-value = 2.795), confirming hypothesis H4. Table 4 presents a summary of all the findings. The goodness of fit (GOF) model serves as an indicator for both the outer and inner measurement models, ensuring that the empirical results adequately describe the model. $GoF = \sqrt{R^2 \times AVE}$ It is calculated using global validation cutoff values ranging from 0 to 1 for PLS models, with GOF values of 0.36 considered large, 0.25 considered medium, and 0.1 considered small(Akter et al., 2011). In this case, the model's GOF is 0.486, indicating a good fit to the data and strong predictive potential. As a result, our SRMR value falls within a reasonable range.

Mediation Analysis

Using a bootstrapping method, this study examined the mediating role via H5 and H6, adhering to the standards described (Hussain et al., 2021). As highlighted by (Gaskin et al., 2018), the indirect effect must be significant to confirm a mediating impact. According to the model, there is a substantial relationship between GCC, SP, and EP. Table 5 shows all the mediation analysis results. Furthermore, the mediation analysis indicated a positive and substantial result between GCC and SP (ß-value = 0.111, t-value = 2.441), supporting hypothesis H5. Moreover, another mediation analysis showed a positive relationship with our hypothesis (ß-value = 0.068, t-value = 2.277).

Table 5. Hypothesis results.

	Hypothesized path	β value	t-value	p-value	Decision
H1	GIB -> GCC	0.326	2.795	0.005	Accepted
H2	EO -> GCC	0.348	4.400	0.000	Accepted
H3	GCC -> SP	0.340	4.631	0.000	Accepted
H4	GCC -> EP	0.195	2.795	0.000	Accepted
Mediation					
H5	GIB -> GCC -> SP	0.111	2.441	0.014	Accepted
H6	EO -> GCC -> EP	0.068	2.277	0.022	Accepted

Note(s): EO= Environmental Orientation, EP= Environmental Performance, GCC= Green Creative Climate, GIB= Green Improvisational Behavior, SP= Social Performance.

Table 6- Research items attained values

Constructs	FL	α	Rho_A	CR	AVE	VIF
Environmental Orientation (EO)						
Our hotel tries to teach employees about environmental preservation.	0.857	0.848	**0.850**	**0.897**	**0.686**	2.272
Our hotel has comprehensive environmental policies for all operations.	0.819					2.029
Our hotel focuses a great importance on environmental protection.	0.821					1.757
Our hotel's core corporate value is environmental preservation.	0.815					1.774
Environmental Performance (EP)						
Environment-friendly practices significantly decreased our hotel's overall costs.	0.863	**0.884**	**0.892**	**0.919**	**0.741**	2.523
Environmental-friendly initiatives have significantly reduced hotel lead times.	0.877					2.306
Environmental activities substantially improved the service quality of our hotel.	0.852					2.387
Environmentally friendly practices have improved our hotel's reputation.	0.850					2.047
Green Creative Climate (GCC)						
Our hotel can be described as adaptable and constantly adjusting to green change.	0.861	**0.851**	**0.852**	**0.899**	**0.692**	2.239
Our hotel is environmentally conscious and has a proactive approach to dealing with relevant issues.	0.830					1.943
Our hotel offers the opportunity to pursue green creative ideas during the workday.	0.792					1.685
Our hotel publicly rewards those with green and creative ideas.	0.841					1.980
Green Improvisational Behavior (GIB)						
While designing the new products and services (green innovation), our hotel was very good at considering environmentally friendly approaches.	0.874	**0.865**	**0.872**	**0.908**	**0.712**	2.254
While designing the new products and services (green innovation), our hotel was very good at anticipating environmental demands.	0.846					2.057
While designing the new services (green innovation), our hotel was very good at creatively improvising and imitating the best environmentally friendly approaches	0.821					1.960
Our hotel strictly followed the rules and regulations related to sustainability.	0.832					1.991

Social Performance (SP)						
Our hotel effectively met the needs of the guests	0.848	**0.847**	**0.852**	**0.897**	**0.685**	2.064
Customers' requirements were met at our hotel	0.834					1.995
Our hotel effectively met the government's standards.	0.786					1.760
Our hotel effectively fulfilled the expectations of the public.	0.840					1.955

Note(s): EO= Environmental Orientation, EP= Environmental Performance, GCC= Green Creative Climate, GIB= Green Improvisational Behavior, SP= Social Performance.

Discussion of results

The study highlights the increasing importance of sustainability practices in the hospitality industry. It emphasizes the need for integrating sustainable initiatives into strategic planning procedures and the potential positive impact of such practices on the environment and society. This study's findings supported the proposed H1, which indicated that GIB significantly influences GCC. According to Su et al. (2022), an innovative organizational climate affects employees' improvisational behavior using social information processing theory. Service enterprises with a high organizational, creative climate are likelier to stimulate employees' improvisational behavior. Prior studies also highlighted the considerable influence of improvisation, which focuses on creativity and innovation in any firm. Enterprises can effectively respond by leveraging a creative environment (Brown & Eisenhardt, 1997).

Moreover, GIB and GCC are credible and interconnected parts of the hospitality field about sustainability. Still, in the meantime, it creates an atmosphere where organizational perspectives and innovation are possible and fosters employees to reach for creative answers to safeguard the surroundings (Farrukh et al., 2023). Thus, we discovered a constructive relationship between employees' GIB and GCC levels surrounding safeguarding the environment. One of the main factors of the current paper is the idea of GIB, reflecting the hotel industry's capacity to adapt and innovate in the face of environmental adversity while under extreme competitive pressure. Therefore, current research suggests that GIB gives hotel businesses an essential strategic advantage to boost their systems and trigger innovativeness. In other words, hotels can form a GCC and flow organizational characteristics that make innovation and sustainable development feasible through GIB.

Previous studies have explored the hotel industry's EO and GCC relationship. Mbasera et al., (2016) identified a gap in environmentally friendly hotel practices due to the absence of green management policies. Chou, (2014) also highlighted the significance of a green organizational climate in shaping employees' environmental behavior, emphasizing the importance of corporate engagement and environmental education. The hospitality industry has a strong interconnection between environmental orientation and a green creative climate, with one notion mutually reinforcing and amplifying the other. Environmental orientation refers to hotels' deliberate and strategic commitment to include environmental factors in their operations and decision-making processes (Kim et al., 2023). This strategic alignment establishes clear environmental goals and objectives and promotes a culture that values and embraces sustainability (Ahmad et al., 2024). In this context, a creative climate focused on sustainability emerges as a natural extension of an environmentally conscious mindset fueled by a shared dedication to innovation and long-term viability. In our study, H2 establishes a significant connection, highlighting that promoting eco-conscious actions fosters sustainable practices, benefiting hotels in global conservation and appealing to environmentally conscious consumers. This link guides the hospitality sector toward a more sustainable future.

Prioritizing green creativity at the organizational level enhances environmental performance and promotes improved social performance, reflecting a commitment to sustainability and responsible business practices. Raza & Khan, (2022) found that environmentally specific servant leadership positively influences green work outcomes, mediated by the climate for green creativity. Similarly, Bhutto et al., (2021) showed that green, inclusive leadership is associated with a green psychological climate and work engagement, driving green creativity in the hospitality industry. H3 and H4 in this study show that GCC integrates SP and EP in the hotels. This approach emphasizes sustainable practices, including energy efficiency and waste reduction, while promoting social responsibility through inclusive initiatives.

Studies have explored the relationship between environmental and social performance and green creative climate. Luu, (2021) highlighted the role that creative self-efficacy and harmonious environmental enthusiasm play as mediators between green entrepreneurial orientation and green creative behavior in tourism. By promoting a culture of creativity, hotels can consistently enhance their sustainability practices, resulting in improved social and environmental

performance. Employees are passionate about protecting the planet and allowed to share their ideas are more dedicated to making a difference, leading to measurable advancements in social and environmental strategies (Raza & Khan, 2022). These studies emphasize the importance of green creativity in shaping environmental and social outcomes while highlighting the mediating influence of elements such as green climate. Furthermore, this study examined the role of GCC as a mediator using two distinct techniques. H5 investigated the role of GCC in mediating the relationship between GIB and GCC, whereas H6 demonstrated that GCC plays a significant mediating role in the association between EO and EP.

Hence, our study underscores the growing importance of sustainability practices in the hospitality industry. Key findings include a positive correlation between GIB and GCC, emphasizing the strategic value of fostering a GCC through GIB. Additionally, there is a significant link between EO and GCC, promoting eco-conscious actions for sustainable practices. Prioritizing green creativity at the organizational level enhances both SP and EP, as reflected in GCC integrating SP and EP. Furthermore, the study highlights GCC's mediating role in relationships between GIB, GCC, EO, and EP. These insights contribute to a better understanding of sustainability and innovation dynamics in the hospitality sector. Figure 2 shows the attained values of the structural model below.

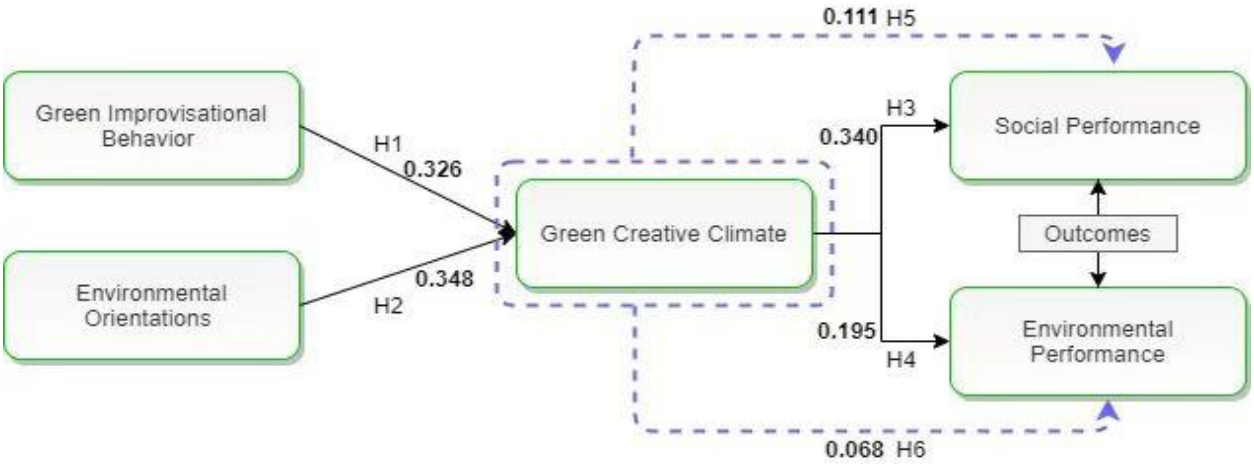

Fig 2. *Structural model values*

Conclusion

This research highlights the increasing importance of sustainability practices in the hospitality industry. Our results shed light on the essential role of incorporating sustainable initiatives into strategic planning, potentially positively impacting the environment and society. Our proposed hypothesis is validated, showing that GIB and GCC as inseparable parts of the hospitality process that work together to reach sustainability goals. This study shows that GIB is directly connected with the GCC level of the employees. Hence, a creative work environment is crucial for finding creative approaches to environmental problems.

In conclusion, GIB proves to be an additional asset that enables hotels to promote innovation and operational improvement. We supplemented our research with a connection between EO and GCC, proving that eco-conscious behavior is an acceptable way to discover sustainable behavior. Our results also show another essential connection between GIB and EO. In this case, GCC integrates SP and EP. Furthermore, our study is more in-depth in GCC's mediating role and describes its essential function in GIB's relations with EO, SP, and EP in hospitality.

Consequently, this research broadens comments on sustainability and innovation dynamics and offers support that must be considered for future research or practical activity. We believe one should pay special attention to GCC at the organizational level since this factor significantly impacts SP and EP. Therefore, hotels can contribute to a global sustainability pattern to attract ecolabel-concerned customers by developing an implementation strategy.

Theoretical Implications

The current study contributes to sustainability and hospitality management by providing several theoretical implications. Firstly, reinforcing the scope of stakeholder theory proves that stakeholders' interests and expectations matter concerning promoting sustainability (Li et al., 2023). Hence, the use of this theory in the hospitality sector is evidenced and the relationship between stakeholder engagement and actual sustainability practices and organizational performance is clarified. Moreover, the discussion on GIB in the current study contributes to existing research on how organizations behave and innovate regarding sustainability. It emphasizes the importance of organizations being able to adjust and come up with ideas to address such challenges (Qu et al., 2022). This theoretical implication can offer broad guidance

that a flexible and proactive orientation toward sustainability, involving improvisation and responses, will increase the hospitality industry's EP and SP.

Additionally, it broadens our awareness of organizational behavior within sustainability and allows more insights into the function of improvisation in shaping sustainability practices. Lastly, the current study also proposes the idea of EO, which has theoretical implications for understanding how an organization's environmental practice links to the strategy (Faraz et al., 2024). This concept contributes to the extant literature on environmental management by helping to encourage those ecologies to have a business model alignment. In this way, it also advances our genuine understanding of how organizations accomplish sustainable results and connect the ecological variables to operational and strategic planning.

Practical Implications

This study has practical implications for the hotel industry to foster a GIB via GCC effectively.

First, recognizing factors that elicit GCC can enable hotels to foster an environment where employees uphold sustainable and innovative practices. This way, the industry's operational efficiency, tourist experience, and environmental conservation can be promoted.

Additionally, the current study establishes the significance of the leadership of stakeholders in driving sustainability. Further, hotels must uphold the interests and concerns of different stakeholders in decision-making, such as government, employees, clients, shareholders, and non-governmental organizations.

Moreover, the industry would substantially benefit from active engagement with stakeholders by contextualizing the decision-making process besides meeting their expectations. This would cultivate a positive rapport, nurture their brand, and improve overall performance.

Additionally, the present study underlines the significance of EO for SP and EP of the hotel industry when adopting and exercising GCC practices and studying the outcomes of such practices.

Last but not least, Environmental factors must be integrated into strategic planning and operational routines to allow hotels to focus on sustainability. This includes resource preservation, waste minimization, energy conservation activities, and educating employees and clients about

environmentally friendly behavior. We suggest that the outcomes and understandings obtained in the study supported by the above findings can be applied to strategic planning and decision-making for sustainability in the hotel industry. Considering these links among GIB, EO, GCC, SP, and EP, hotels could establish an all-encompassing strategy to cover sustainability.

Limitations and future research

Despite certain limitations of this study, which have been caused mainly by time and costs, they create a field for further study. The sample of the study can be viewed as quite limited. The study could rely on a limited or biased sample of hotels or informants, which limits the generalizability of its findings to a more general population. A larger sample could give more credibility to generalize the results in the future. Moreover, the study's cross-sectional design makes it impossible to develop actual causality and speculate about the definite temporal connection between variables. Our study demonstrates that GIB and EO are equivalent value-laden conditions for both SP and EP. However, longitudinal or experimental studies that can help prove causal relationships and dynamical properties in time are preferable and comprehensive. Finally, this study contributes considerably to understanding sustainability or hospitality management; however, the focus is narrow and is evident in hotels. It implies that the results cannot be generalized to understand several other sectors or industries thoroughly because the rationale is complex and subtle. Expanding future research to various organizations or sectors is recommended to make a more valid claim.

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