GREEN INNOVATIONS, STAKEHOLDER PRESSURES AND ENVIRONMENTAL PERFORMANCE IN THE HOTEL INDUSTRY

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Abstract

Purpose – This study investigates the mediating influence of green innovations on the relationship between stakeholder pressures and environmental performance within the Ghanaian hotel industry.
Methodology/Design/Approach – A quantitative research approach was applied, gathering data from 273 hotel managers in Ghana. The analysis employed SPSS and Smart PLS software to assess the relationships among stakeholder pressures, green innovations, and environmental performance. Structural equation modeling (SEM) was used to test the hypotheses and evaluate the mediation role of green innovations.
Findings – The study finds that green innovations significantly mediate the connection between stakeholder pressures and environmental performance, highlighting that hotels addressing customer and regulatory demands can better enhance their environmental outcomes when incorporating green innovations. This study also points out a lack of research on stakeholder and environmental dynamics within Ghana's hospitality sector, addressing this gap.
Originality of the Research – This research contributes to both stakeholder and institutional theory by illustrating the critical role of green innovations in helping hotels meet external demands for sustainability. It offers new insights for academics and practitioners, emphasizing proactive stakeholder engagement and sustainable practices as strategic advantages within the hotel industry in Ghana.
Keywords Green Innovations, Stakeholder Pressures, Environmental Performance, Hotel Industry, Sustainability, Ghana

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INTRODUCTION

In today's world, environmental sustainability is of paramount importance, with industries across the globe increasingly urged to adopt green practices (Little, et al. 2016; Sarkis & Zhu, 2018). The hospitality sector, in particular, faces mounting pressure from stakeholders—including customers, regulatory bodies, and local communities to minimize its environmental impact (Hamzah et al., 2021). This pressure has intensified due to global economic trends, political shifts, and heightened awareness of climate change. The rise of eco-tourism and consumer preference for sustainable travel options, as highlighted by Mishra and Kumar (2024), have further compelled hotels to reassess their operations. In Ghana, where the hospitality sector significantly contributes to economic development, the need for environmentally responsible practices is even more pressing. Recent reports from the Ghana Tourism Authority (2022) indicate that over 70% of Ghanaian travelers prioritize eco-friendly accommodations, underscoring the growing demand for sustainability in the sector. However, the Ghanaian hotel industry struggles to balance profitability with sustainability (Buobu, 2023; Marfo et al., 2024), making it imperative to understand the interplay between stakeholder pressure and environmental performance (Mensah, 2019; Franklin, 2024). This challenge highlights the urgency of empirical research that explores how external and internal pressures drive sustainable practices, particularly in developing economies where infrastructure and regulatory enforcement may be less robust.

Green innovations, encompassing environmentally friendly products, processes, and technologies, have emerged as a key solution to addressing stakeholder demands while enhancing environmental performance in the hotel industry (Arici & Uysal, 2022). Studies such as Shahzad et al. (2020) highlight the pivotal role of stakeholder pressure in shaping corporate environmental practices. Research by Ajibike et al. (2021) further emphasizes that internal factors, such as organizational environmental ethics, significantly influence the adoption of green innovations, suggesting a strong connection between internal culture and external pressures. Similarly, Kuo, Fang, and Lepage (2022) assert that hotels integrating green innovations are better positioned to respond to external pressures, such as government regulations and customer expectations, thereby improving their environmental performance.

Despite the contributions of existing studies, significant research gaps remain. The extent to which hotels in Ghana implement green innovations to achieve environmental performance such as energy-efficient systems, waste reduction strategies, and eco-friendly construction materials is hindered by financial constraints, lack of technical expertise, and weak regulatory enforcement (Mensah, 2019; Amankwah-Amoah, 2024). While prior research has examined stakeholder influence on environmental performance, there

is limited understanding of how green innovations mediate this relationship within Ghana's hotel sector. The lack of clear insights into the environmental performance trends in response to stakeholder demands hinders the development of strategic policies and investments that could drive sustainability in the industry. Moreover, studies focusing specifically on Sub-Saharan Africa, and Ghana in particular, remain scarce, leaving a geographic and contextual gap in the literature that this research seeks to fill.

This study, therefore, aims to address the challenges hindering the hotel industry's ability to achieve environmental sustainability. It does so by exploring how stakeholder pressures influence environmental performance in Ghana's hotel sector, with green innovations as a mediating factor. By investigating these dynamics within the unique context of Ghana, the research contributes fresh insights to the academic discourse, particularly within the frameworks of stakeholder and institutional theories. The study contributes in three main ways: first, it contextualizes stakeholder pressure within Ghana's hospitality sector, offering an understanding rooted in local realities; second, it introduces green innovations as a mediating construct to unpack the mechanism through which stakeholder expectations translate into improved environmental outcomes; and third, it informs policy and management strategies for sustainability transitions in emerging markets. It also offers recommendations on how the hotel industry can effectively achieve higher environmental performance outcomes. Additionally, the study emphasizes the fundamental role of green innovations as a strategic bridge between stakeholder expectations and improved environmental outcomes, offering practical implications for both policymakers and industry practitioners.

1. LITERATURE REVIEW

1.1. Theoretical background and hypothesis development

The study draws upon stakeholder theory and institutional theory to explore the dynamics of environmental practices in the hospitality sector. Institutional theory posits that various external stakeholders, including customers, regulators, and communities, significantly shape the environmental practices of organizations (Gupta & Gupta, 2021). These stakeholders exert pressure on firms to adopt sustainable practices that align with societal and environmental expectations. In response to such pressures, organizations often adopt green innovations, which act as adaptive mechanisms that allow businesses to enhance their environmental performance (Singh et al., 2022). As Xie, Abbass, and Li (2024) illustrate, green innovations serve as a critical pathway for firms to respond effectively to stakeholder demands, enabling them to meet regulatory standards and consumer expectations for sustainability while simultaneously gaining a competitive advantage in the marketplace. Therefore, green innovation is not just a set of outcomes but a mediating mechanism that links stakeholder pressures with a firm's ability to improve environmental performance in a dynamic and competitive environment.

To further understand institutional theory, the concepts of organizational legitimacy and institutional isomorphism are essential. Organizational legitimacy refers to the perception that a company's actions are appropriate and socially desirable, motivating firms to align with stakeholder expectations to maintain their standing within the industry (Hu, Zhang, & Yan, 2020). Acquah et al. (2021) elaborate on institutional isomorphism, suggesting that firms within the same industry tend to adopt similar practices in response to external pressures, thereby conforming to established norms. In the context of the hospitality industry, this trend often results in the widespread adoption of green innovations as hotels strive to position themselves as legitimate players in the global movement toward sustainability. As more firms integrate environmentally friendly practices into their operations, researchers (see Naveed, Khalid, & Voinea, 2023; Bashynska et al., 2024) argue that green innovations become the norm, reinforcing an industry-wide shift toward sustainability and enhanced environmental performance. Thus, institutional theory supports the mediating role of green innovation by explaining how firms adopt environmentally conscious practices to attain legitimacy and mimic institutionalized norms, particularly when facing strong stakeholder and regulatory pressures.

Together, stakeholder theory and institutional theory provide a comprehensive foundation for positioning green innovation as a mediating variable. Stakeholder theory emphasizes the origin of pressures, highlighting how diverse stakeholder interests compel organizations to implement sustainable practices. Institutional theory, on the other hand, explains the internalization of these pressures through conformity, legitimacy, and isomorphism. Green innovation serves as the mechanism through which organizations translate external stakeholder and institutional pressures into tangible improvements in environmental performance. It facilitates a strategic alignment between environmental expectations and operational practices, making it a critical element in achieving sustainability objectives within the hotel industry.

1.2. Theoretical background and hypothesis development

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as a critical pathway for firms to respond effectively to stakeholder demands, enabling them to meet regulatory standards and consumer expectations for sustainability while simultaneously gaining a competitive advantage in the marketplace. Thus, green innovation is not merely a strategic response but a functional conduit through which stakeholder and institutional pressures are operationalized into measurable environmental outcomes. This mediating function is grounded in both theoretical logics, as it reflects the mechanism by which firms absorb, interpret, and act on external pressures. Therefore, green innovation is not just a set of outcomes but a mediating mechanism that links stakeholder pressures with a firm's ability to improve environmental performance in a dynamic and competitive environment.

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Together, stakeholder theory and institutional theory provide a comprehensive foundation for positioning green innovation as a mediating variable. Stakeholder theory emphasizes the origin of pressures, highlighting how diverse stakeholder interests compel organizations to implement sustainable practices. Institutional theory, on the other hand, explains the internalization of these pressures through conformity, legitimacy, and isomorphism. The convergence of these theoretical perspectives provides robust justification for positioning green innovation as the mechanism that enables firms to translate external pressure into strategic environmental action. Green innovation serves as the mechanism through which organizations translate external stakeholder and institutional pressures into tangible improvements in environmental performance. It facilitates a strategic alignment between environmental expectations and operational practices, making it a critical element in achieving sustainability objectives within the hotel industry.

1.3. Green Innovation and Environmental Performance

Green innovation offers a significant role in enhancing environmental performance by eliminating resource loss, streamlining processes, and generating eco-friendly goods (Amore, & Bennedsen, 2016; Song, & Yu, 2018). This proactive strategy goes beyond simply adhering to regulatory criteria, trying instead to link corporate operations with broader public expectations regarding sustainability. While several research have established that green innovation has a good impact on environmental performance, certain data suggest no clear link between the two (Aftab et al., 2023; Rehman & Yaqub, 2021). Nevertheless, research generally supports the premise that firms integrating green processes, sustainable product development, and responsible resource management can greatly boost their environmental performance (Rehman, Bresciani, Yahiaoui, & Giacosa, 2022; Le, 2022). Companies that promote green innovation are better positioned to meet not only regulatory environmental criteria but also rising demands from environmentally concerned consumers and stakeholders.

Moreover, green innovations related to product and process development contribute to both environmental and economic performance (Chen, 2019). By lowering waste and associated expenses, green innovation helps firms boost operational efficiency while minimizing their environmental footprint (Ha et al, 2024). Rather than being perceived as a reactive response to stakeholder pressures, green innovation should be considered a purposeful and proactive activity aiming at creating a competitive advantage through improved environmental performance (Rui & Lu, 2021; Ali et al, 2023). Businesses that embrace green innovation as a core component of their environmental management agenda likely to benefit not only from improved environmental outcomes but also from enhanced financial performance and corporate reputation. Therefore;

H1: Green innovation positively influences environmental performance.

1.4. Stakeholder pressures and environmental performance

Stakeholder pressures have a tremendous impact on environmental performance, as corporations respond to external demands to line with environmental legislation and consumer expectations. According to stakeholder theory, created by Freeman, these forces create a dynamic environment where firms must continuously adjust to the evolving expectations of stakeholders, including regulatory agencies, customers, and competitors (Eskerod, 2020). When corporations actively respond to stakeholder concerns, they frequently create more advanced environmental management systems and get access to networks that facilitate exchanging knowledge on sustainable practices (Xie et al. 2024). Stakeholders play a vital role in defining environmental activities, with regulatory agencies enforcing compliance through legislation and market pressures driving the demand for ecologically responsible

company practices (Hu et al. 2022). Companies that meet these objectives tend to improve both their market positioning and financial performance by connecting their environmental aims with stakeholder expectations (Lassala et al. 2021).

Additionally, Singh et al. (2022) suggest that stakeholder pressure from consumers and competitors also significantly propels corporations toward increased environmental performance. Consumers, particularly in developed nations, have become increasingly aware of the environmental implications of corporate activities, demanding greener products and practices alongside traditional expectations such as quality, price, and service (Heydari et al. 2021; Thakkar, 2021). This increased consumer awareness encourages enterprises to implement ecologically sustainable strategies or risk losing market share to competitors with stronger environmental management systems (Tan et al, 2022). Competitive pressures thus push corporations to implement green innovations, as organisations that fail to adapt may fall behind in market share compared to those that effectively integrate environmental performance into their operations (Riva et al. 2021). By responding to both consumer expectations and competitive forces, corporations can better their environmental performance, strengthen their social legitimacy, and secure a competitive advantage in an increasingly sustainability-conscious market. Therefore;

H2: Stakeholder pressures positively influence environmental performance.

1.5. Stakeholder pressure on green innovation

Stakeholder pressure has a huge impact on green innovation, particularly as companies respond to external forces from regulators, customers, and competitors (Goyal et al., 2022). Companies that apply green innovations, such as eco-friendly products and processes, are more likely to be successful in the long run because they can better meet environmental expectations and demands from their stakeholders (Ahakwa et al. 2021). Governmental restrictions, which frequently set high environmental standards, serve as a main driver for firms to implement green practices. These rules not only drive enterprises to comply with laws but also stimulate the use of green technologies through incentives such funding for green research and development (Cai, Zhu, Zhang, Li, & Xie, 2020). This has resulted in many firms perceiving green innovation not simply as a compliance strategy but as a competitive advantage, allowing them to avoid penalties and improve their environmental governance (Khan et al., 2021).

In addition to regulatory pressures, Ren et al. (2021) and Chen et al. (2020) argue that customer expectations and competitive dynamics also play a crucial role in fostering green innovation. Environmentally concerned consumers demand that businesses reduce their environmental impact, encouraging enterprises to implement green supply chain management and offer low-pollution, low-energy products (Xie et al., 2024). Customers' feedback can further encourage green innovation by persuading companies to meet specific eco-friendly standards. Competitors also impose substantial pressure, since businesses generally copy successful green initiatives of their rivals to retain market competitiveness (Malik et al, 2023). When competitors implement cost-effective green products or energy-saving technology, corporations are driven to embrace equivalent green innovations to defend their market share and sustain legitimacy (Hu et al, 2023). Through this approach, stakeholder pressures collectively drive firms to continuously enhance their environmental performance by embracing green technology. Therefore;

H3: Stakeholder pressures have a good impact on green innovation.

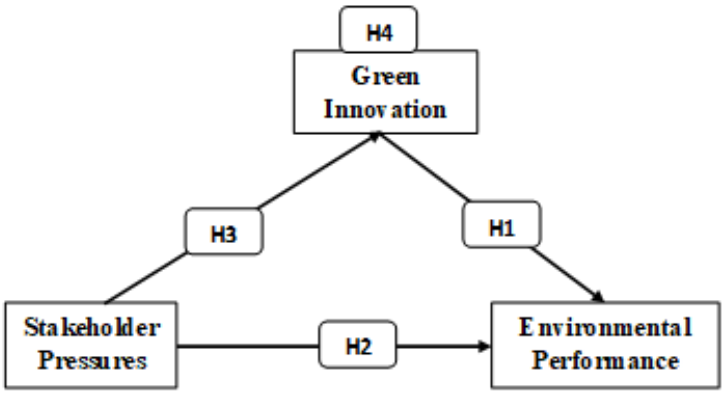
1.6. The mediating role of green innovation

Green innovation serves a vital mediating function in the link between stakeholder pressures and environmental performance. Stakeholder pressures from regulatory agencies, customers, and rivals force enterprises to adopt environmentally sustainable practices, and green innovation acts as the method via which these pressures are transformed into improved environmental results (Singh, et al., 2022). By creating and adopting green technology, products, and processes, corporations can respond to external demands while simultaneously boosting their environmental performance. This mediation occurs because green innovations allow enterprises to match their operations with stakeholder expectations, boosting resource efficiency and lowering their environmental effect. Research has demonstrated that the introduction of green innovations, such as eco-friendly production methods and renewable energy technology, increases organizations' ability to meet both regulatory obligations and consumer needs for sustainability (Aftab et al., 2023).

Also, the implementation of green human resource management (GHRM) techniques promotes the mediating role of green innovation by building a corporate culture focused on sustainability. GHRM practices foster employee involvement in green initiatives, which in turn encourages the design and implementation of green innovations within the organisation (Al Doghan et al, 2022). By integrating green innovation into their operations, organisations not only exceed stakeholder expectations but also achieve greater environmental performance (Aftab et al., 2023). In essence, green innovation functions as a bridge between stakeholder constraints and environmental performance, helping enterprises to preserve competitiveness and legitimacy in increasingly eco-conscious markets while reaching sustainability targets (Baquero, 2024). This mediating impact underlines the importance of green innovation as a proactive strategy for firms to increase environmental results in response to stakeholder pressures. Therefore;

H4: The mediating role of green innovation on stakeholder pressures and environmental performance.

Figure 1: **The suggested hypotheses point to the model**



2. METHOD

2.1. Questionnaire design

To examine the mediating role of green innovations in the relationship between stakeholder pressures and environmental performance, we developed a research framework and proposed a set of hypotheses (Fig. 1). A questionnaire was designed to gather data that would evaluate and validate these hypothetical assumptions. Before finalizing the survey instrument, it underwent preliminary testing to ensure it satisfied the criteria for validity and reliability. Feedback from experts and respondents during this phase informed necessary revisions, ensuring clarity and alignment with the study's objectives.

The questionnaire was divided into two primary sections. The first section collected demographic data, including respondents' gender and educational level, to provide context for interpreting the results. The second section focused on the study's core variables: stakeholder pressures, green innovation, and environmental performance. These questions were formulated based on an extensive literature review and consultations with academic authorities, adhering to a rigorous evaluation process. Consistent with established methodologies, the study employed a 5-point Likert scale to measure responses, enabling detailed and standardized data collection.

2.2. Measurement of Constructs

The constructs in this study were measured using well-established scales adapted from relevant literature. Stakeholder pressures were assessed using four items from Rui and Lu (2020), which are recognized for their robustness in capturing external demands on organizations. Green innovation was evaluated with four items based on the framework developed by Kraus, Rehman, and García (2020), which provides a comprehensive understanding of sustainable innovation practices. Environmental performance was measured using seven items from the scale developed by Alt and Spitzeck (2016), which effectively captures organizational outcomes related to ecological impact. These adapted measures ensured both construct validity and reliability of the survey instrument, while also maintaining relevance to the Ghanaian hotel industry context. A five-point Likert scale was used to measure each item.

2.3. Data Collection

To ensure the reliability and accuracy of the data, this study targeted managerial-level respondents, specifically middle and top managers, due to their strategic roles and deep understanding of their organizations' environmental performance and green innovation initiatives. An online survey was employed to efficiently reach participants across different regions while minimizing logistical constraints. To address potential biases related to digital accessibility and literacy, the survey was designed with a user-friendly interface and included clear instructions to facilitate participation.

The selection of respondents from the Greater Accra, Central, and Ashanti regions was intentional, as these areas serve as major economic and tourism hubs in Ghana. They host a significant number of hotels actively engaged in sustainability practices due to regulatory requirements and competitive market dynamics. Including these regions enhances the study's generalizability by capturing perspectives from diverse business environments with varying levels of green innovation adoption.

Before the full-scale data collection, a pre-test was conducted with 24 participants, including academic experts, to refine the questionnaire and ensure clarity, validity, and reliability. After incorporating their feedback, the final survey was distributed to 354 hotel managers across the selected regions. A total of 305 responses were received, of which 32 were excluded due to

inconsistencies, leaving 273 valid responses for analysis. This structured approach ensured the collection of high-quality data, providing a robust foundation for meaningful empirical insights and practical recommendations for the industry.

3. RESULT AND ANALYSIS

3.1. Respondents' Demographic Profile

The demographic profile showed that out of 273 (100%) respondents, 172 (62.93%) were males and 101 (37.07%) were females. As regard the educational level of the respondents, those with Junior High School as their highest educational level were 4 (1.47%). Senior High School educational level was 34 (12.46%). Respondents with diplomas were 47 (17.22%), degree holders were 117 (42.86%), postgraduates had 68 (24.91%), and others had 3 (1.10%).

3.2. Measurement model

Structural equation modeling (SEM) was employed to evaluate the study's validity, test hypotheses, and conduct mediation analysis. To this end, a covariance-based measurement model was developed using Smart PLS. This approach allows for the assessment of the factor structure and the variance explained among the primary variables. A covariance model was established to examine the relationships between stakeholder pressures, green innovation, and environmental performance.

3.3. Common Method Bias

To mitigate potential issues related to Common Method Bias (CMB), several procedural and statistical measures were implemented. First, the survey questionnaire was carefully designed to ensure clarity and minimize response bias. Items measuring different aspects of the same construct were strategically dispersed throughout the questionnaire, and negatively worded statements were paired with positively framed ones to enhance response consistency. Additionally, ex-post statistical tests were conducted to assess CMB. Harman's single-factor test was applied, revealing that a single factor accounted for only 21% of the total variance—well below the 50% threshold—indicating that CMB was not a significant concern (**Podsakoff** et al., 2024). Furthermore, a partial correlation analysis incorporating a marker variable demonstrated that its inclusion did not alter the hypothesized relationships or their significance.

Moreover, multicollinearity was assessed, and all correlation values remained below 0.7, confirming that collinearity among variables was not an issue (**Johnson** & LeBreton, 2004). These measures collectively ensure the reliability and validity of the findings by minimizing the risk of bias associated with self-reported data from managerial-level respondents

Table 1: **Validity and Reliability results**

Research constructs	**Cronbach's alpha**	**Rho _A**	**CR**	**AVE**	**Loadings**
Environmental Performance	0.932	0.936	0.945	0.710	
EP1: Our hotel has successfully reduced the environmental impact of its services and operations.					0.834
EP2: Our hotel has decreased its environmental footprint by forming partnerships with eco-friendly suppliers and organizations.					0.859
EP3: Our hotel has implemented measures to reduce the risk of environmental accidents, spills, and releases.					0.892
EP4: Our hotel has minimized the use of non-renewable materials, chemicals, and components in its operations.					0.772
EP5: Our hotel actively monitors and manages its waste to lessen environmental impact.					0.879
EP6: Our hotel regularly conducts environmental assessments to identify areas for improvement in sustainability practices.					0.833
EP7: Our hotel has reduced water and energy consumption as part of its commitment to environmental sustainability.					0.824

Research constructs	Cronbach's alpha	Rho _A	CR	AVE	Loadings
Green Innovation	0.944	0.944	0.959	0.855	
GI1: Our hotel actively implements innovative practices to minimize environmental impact in our services.					0.939
GI2: Our hotel has successfully reduced the emission of hazardous substances associated with its operations.					0.919
GI3: Our hotel has increased the efficiency of materials used in its services and operations.					0.928
GI4: Waste generated by our hotel is effectively treated and reused in our operations.					0.912
Stakeholder Pressures	0.949	0.953	0.964	0.869	
SP1: Our hotel frequently receives feedback from customers regarding our environmental practices.					0.871
SP2: Regulatory agencies consistently pressure our hotel to comply with environmental standards and regulations.					0.946
SP3: Competitors in the hotel industry influence our hotel to enhance our sustainability initiatives.					0.968
SP4: Local communities actively encourage our hotel to adopt more sustainable practices.					0.942

Source: Field data (2024)

3.4. Validity and Reliability of Results

Convergent validity is established, as the factor loadings for each variable exceed 0.5, the composite reliability for each variable is greater than 0.7, and the average variance extracted (AVE) is above the recommended threshold of 0.5 (Afthanorhan, 2013). A summary of the convergent validity results is presented in Table 1.

3.5. Discriminant Validity

The method for evaluating discriminant validity was derived from **Ab Hamid** et al, (2017), who state that the square root of the average variance extracted (AVE) for each variable in the model must be greater than the correlations between the variables. Table 2 demonstrates that this criterion is met, thereby confirming the discriminant validity of the constructs. The research variables demonstrated the largest cross-loading values in comparison to those of other variables, as indicated in Table 2.

Table 2: **Discriminant Validity**

	1	2	3
Environmental Performance			
Green Innovation	0.897		
Stakeholder Pressures	0.883	0.834	
Cross Loadings			
	1	**2**	**3**
EP1	0.834	0.750	0.630
EP2P2	0.859	0.775	0.887
EP3P3	0.892	0.820	0.742
EP4P4	0.772	0.663	0.672
EP5	0.879	0.807	0.811
EP6 6	0.833	0.772	0.610
EP7	0.824	0.705	0.551
GI1	0.841	0.939	0.768
GI2	0.787	0.919	0.726
GI33	0.848	0.928	0.690
GI4	0.852	0.912	0.738
SP1	0.694	0.689	0.871
SP2	0.805	0.755	0.946
SP3	0.819	0.744	0.968
SP44	0.806	0.757	0.942

Source: Field data (2024)

3.6. Coefficients of Determination (R2) and adjusted R2 (R2 adj.)

The R-square statistic quantifies the extent to which variation in a dependent variable may be elucidated by independent (exogenous) factors. It serves as a key metric for assessing the model's alignment with the data. An R-square value of 0.75 implies a robust model, 0.50 signifies a moderate model, and 0.25 denotes a weak model for the dependent latent variable. The modified R-square value modifies the R-square to consider the presence of non-significant independent variables, hence improving the model's explanatory capacity. **Liao** and McGee's (2003) model on environmental performance and green innovation demonstrates predictive accuracy (adjusted R-square) values of 0.852 and 0.623, as shown in Table 3.

Table 3: **Coefficients of determination (R^2) and R^2 adjusted**

	R Square	**R Square Adjusted**
Environmental Performance	0.854	0.852
Green Innovation	0.624	0.623

Source: Field data (2024)

3.7. Model Fit Summary

Based on **Bagozzi** and Yi (2012), multiple heuristic fit indices were tested to offer deeper insights into model fit, with findings ranging from satisfactory to exceptional. The six-factor confirmatory model provided a strong fit to the data, with all indicators meeting the requisite thresholds, as shown in Table 4. The model's fit statistics include a Chi-Square value of 977.701, NFI of 0.814, and SRMR of 0.068. Additionally, all factor loadings were positive and statistically significant.

Table 4: **Model Fit Summary**

	Saturated Model	Estimated Model
SRMR	0.068	0.068
d_ULS	0.547	0.547
d_G	0.683	0.683
Chi-Square	977.701	977.701
NFI	0.814	0.814

Source: Field data (2024)

3.8. Test for Mediation

The path correlations among the study variables were determined using PLS path analysis with bootstrapping, as described by **Shang** and Marlow (2005). This analysis aimed to assess the significance of the path coefficients for the hypothesized relationships. The study's structural model is illustrated in Table 6 and Figure 1. To evaluate the mediating effect of green innovation on the relationship between stakeholder pressures and environmental performance, a mediator calculator was employed to calculate the t-statistic value (**Hayes**, 2009).

Figure 2: **Results of the PLS Structural Model**

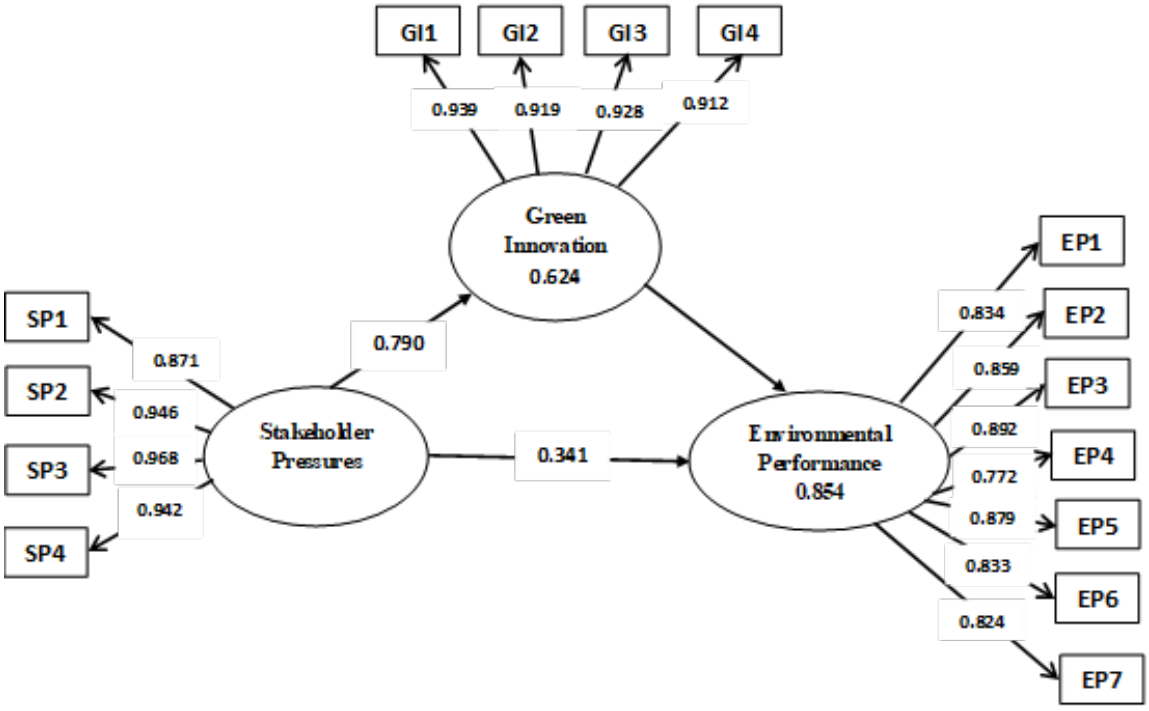


Table 5: **Structural Analysis**

Study's hypothesis	Hypothesis	Path coefficients	T -Statistics	P -Values	Supported/ Rejected
GI → EP	H1	0.630	18.703	0.000	Supported
SP → EP	H2	0.341	9.461	0.000	supported
SP → GI	H3	0.790	34.742	0.000	Supported
SP → GI → EP	H4	0.498	18.606	0.000	Supported

Source: Field data (2024)

3.9. Discussion of the Results

This research evaluates the impact of stakeholder pressure on environmental performance and its mediating role in green innovation. The table 5 illustrates the results of hypothesis testing regarding the association between each factor. The regression analysis revealed that green innovation (β = 0.630, t = 18.703, p 0.000) significantly and positively influenced environmental performance, leading

to the support of H1. This finding is consistent with existing literature that underscores the role of green innovation in enhancing environmental outcomes. For instance, Ha et al. (2024) highlighted that the adoption of environmentally friendly technologies leads to improved environmental performance, as firms are better equipped to reduce waste and resource consumption.

Furthermore, Aftab et al. (2023) demonstrated that green innovation practices contribute to achieving corporate sustainability goals, reinforcing the notion that organizations that actively engage in green innovations experience notable improvements in their environmental performance. This aligns with the work of Shah and Soomro, (2021), which emphasized that integrating ecological sustainability into business operations positively impacts environmental outcomes. Overall, the significant positive relationship found in this study between green innovation and environmental performance not only supports study but also aligns with broader academic discussions that advocate for the adoption of green innovations as a vital strategy for improving sustainability within various industries, including the hotel sector in Ghana.

The results indicated that stakeholder pressure ($\beta = 0.341$, $t = 9.461$, $p = 0.000$) had a significantly positive effect on environmental performance, supporting H2. This finding aligns with stakeholder theory, which posits that organizations are influenced by various external stakeholders, including customers, regulators, and competitors, in their pursuit of better environmental performance. For example, Xie et al. (2024) highlighted that stakeholder pressures compel companies to adopt sustainable practices and enhance their environmental governance.

Moreover, previous research has indicated that the expectations from stakeholders, particularly regulatory bodies and environmentally conscious consumers, motivate firms to improve their environmental performance (Eskerod, 2020; Bueno-García et al, 2022). Studies by Lestari et al. (2021) and Haleem et al. (2022) have shown that regulatory pressures play a critical role in pushing companies towards more sustainable operations. This support for H2 suggests that organizations facing strong stakeholder pressures are more likely to engage in practices that not only fulfill regulatory requirements but also align with societal expectations for environmental stewardship. Collectively, these findings reinforce the importance of stakeholder dynamics in shaping environmental performance within the hospitality industry, particularly in the context of Ghana's hotel sector.

Subsequent analysis results suggested that stakeholder pressure ($\beta = 0.790$, $t = 34.742$, $p = 0.000$) significantly and positively impacted green innovation, thus supporting H3. This finding is consistent with existing literature that underscores the role of stakeholder pressures in driving organizations to adopt innovative and sustainable practices. For instance, research by Wang et al. (2021) and Song et al. (2020) has shown that companies often respond to competitive pressures and regulatory demands by implementing green innovations, thereby aligning their operations with stakeholder expectations. Furthermore, the push from stakeholders, including customers and regulators, compels firms to prioritize green initiatives, as evidenced by studies that highlight the importance of meeting customer demands for environmentally friendly products (Ni et al., 2023) and the need for compliance with environmental regulations (Ouyang et al. 2020). Stakeholder theory supports this notion, positing that organizations that are sensitive to stakeholder concerns are more likely to innovate in ways that address environmental issues (Eskerod, 2020). The high significance of the relationship between stakeholder pressure and green innovation in this study illustrates the critical role of external influences in fostering sustainable practices, particularly in the context of Ghana's hotel industry, where environmental awareness is increasingly paramount.

The mediating analysis reveals that stakeholder pressure significantly affects environmental performance through green innovation, ($\beta = 0.498$; $t = 18.606$; $p = 0.000$). This finding supports the notion that green innovation acts as a critical intermediary in the relationship between stakeholder pressures and environmental performance. The results align with the research conducted by Rimbawanto et al. (2023), which highlighted the mediating role of green innovation in the hospitality sector in Indonesia, demonstrating that stakeholder pressures drive companies to innovate sustainably, subsequently enhancing their environmental performance. In the context of stakeholder theory, this mediation highlights the importance of external pressures from customers, regulators, and competitors in influencing a firm's strategic direction towards sustainability. Studies have shown that companies responding to stakeholder demands are more likely to implement green innovations that improve their environmental outcomes (Aftab, Abid, Cucari & Savastano, 2023). Additionally, the findings reflect the broader literature that emphasizes the necessity for organizations to adapt to stakeholder expectations through sustainable practices, ultimately leading to improved environmental performance (Wang et al., 2021). The results from this study contribute to the growing body of evidence supporting the critical role of green innovation in mediating the impacts of stakeholder pressures on environmental performance, particularly in the hospitality industry, where environmental sustainability is increasingly vital.

3.10. Theoretical Contributions

This study makes several important theoretical contributions to the growing body of literature on green innovation and environmental performance, particularly within the context of small and medium-sized enterprises (SMEs) in emerging economies like Ghana. By integrating stakeholder theory and institutional theory, the research provides a more comprehensive understanding of how both internal and external pressures influence sustainable organizational behavior.

First, the study enriches stakeholder theory by demonstrating how various stakeholder groups including customers, regulatory bodies, and competitors exert pressure on firms to adopt environmentally friendly practices. This finding aligns with Freeman's (2010) foundational work, which emphasizes the strategic importance of managing diverse stakeholder interests. It also supports the stakeholder salience framework proposed by Mitchell, Agle, and Wood (1997), suggesting that the perceived importance and power of stakeholders significantly affect firms' environmental strategies. Recent studies have echoed this view, showing that stakeholder pressure is a key driver of green initiatives in developing countries (Sarkis et al., 2010; Fernando & Lawrence, 2014).

Second, the research extends the application of institutional theory (DiMaggio & Powell, 1983) by illustrating how coercive (e.g., regulations), normative (e.g., industry expectations), and mimetic (e.g., competitive benchmarking) pressures shape organizational practices. The findings support the notion that firms seek legitimacy by conforming to external expectations (Delmas & Toffel, 2008). By situating these institutional dynamics within the Ghanaian business environment, the study provides a contextualized understanding of how SMEs respond to external legitimacy pressures through sustainable innovation.

Third, the study introduces green innovation as a critical mediating variable that links stakeholder and institutional pressures to improved environmental performance. This supports the work of Chen (2008), who argued that eco-innovation enhances both environmental outcomes and competitive advantage, and Albort-Morant et al. (2016), who emphasized the enabling role of green innovation in sustainability-driven strategies. By empirically validating this mediating role, the study provides a more nuanced explanation of the mechanisms through which external demands are translated into tangible environmental outcomes. Overall, this research contributes to the theoretical discourse on sustainability by offering an integrated framework that explains how stakeholder expectations, institutional pressures, and innovation capabilities interact to shape environmental performance. It also lays the groundwork for future research that explores these dynamics across different sectors, industries, and national contexts.

3.11. Managerial Implications

The findings of this study highlight the critical role of stakeholder pressures in driving environmental sustainability within the hotel industry in Ghana. Hotel managers must recognize the importance of engaging with their stakeholders, including customers, regulators, and local communities, to align their operations with environmental expectations. Establishing forums and consultation processes for effective stakeholder involvement allows hotels to better understand and respond to stakeholder concerns. This proactive engagement not only helps in addressing immediate environmental issues but also fosters long-term relationships with stakeholders, enhancing the hotel's reputation and commitment to sustainability.

Moreover, the study highlights the significance of integrating environmental ethics into organizational practices to enhance environmental performance. By aligning corporate values with sustainability goals, hotel managers can cultivate an organizational culture that prioritizes environmental responsibility. This can be achieved through the development of codes of conduct, policies, and training programs focused on environmental sustainability. Such initiatives will empower employees to make environmentally conscious decisions and foster a collective commitment to sustainable practices throughout the organization.

Lastly, the study emphasizes the advantages of increasing environmental awareness as a means to promote sustainability. By implementing educational and outreach programs aimed at both internal staff and external stakeholders, hotels can raise awareness of environmental challenges and encourage behaviors that support sustainability. This can involve initiatives like community clean-up events, partnerships with local environmental organizations, and sustainability workshops. Ultimately, by investing in green innovation and fostering a culture of environmental awareness, hotel managers can significantly reduce their environmental impact, enhance their competitive position, and contribute to the broader goal of sustainability in the hospitality industry.

3.12. Limitations and Directions for Future Research

This study on the hotel industry in Ghana presents several limitations that may affect the generalizability of its findings. First, the research is geographically constrained to Ghana, which may not fully capture the diverse challenges and opportunities present in other regions or industries. Additionally, the reliance on data solely from hotel managers may overlook the perspectives and insights of other organizational levels, such as front-line staff or customers, who play crucial roles in implementing and perceiving green innovations. Furthermore, the cross-sectional nature of the study provides a snapshot of the situation at a specific point in time, limiting the ability to assess changes or trends in stakeholder pressures and environmental performance over time.

To address these limitations, future research should consider conducting longitudinal studies that track the evolution of stakeholder pressures and the impact of green innovations on environmental performance over longer periods of time. Expanding the scope to various industry contexts beyond the hospitality sector could provide valuable comparisons and insights into sustainability best practices. Thus, future studies can also consider the role of staff and other lower-level employees as research focus on green environment and sustainability of the hotel industry. Furthermore, including a broader range of stakeholder perspectives such as employees, customers and local communities would enrich the understanding of

how stakeholder dynamics influence the adoption of green innovations. Finally, examining the effectiveness of specific green innovation strategies in different contexts could provide more nuanced insights for practitioners and policymakers seeking to improve environmental performance in the hospitality sector and beyond.

CONCLUSION

This study investigates the complex interplay between stakeholder pressures, green innovation, and environmental performance in the context of Ghana's hotel industry. By elucidating the mediating role of green innovation, the research reveals how external pressures from stakeholders such as customers, regulatory bodies, and competitors can significantly drive hotels to adopt more sustainable practices. The findings indicate that green innovation serves as a vital mechanism through which stakeholder pressures translate into tangible improvements in environmental outcomes.

The emphasis on green innovation highlights its importance not only as a response to stakeholder demands but also as a proactive strategy for enhancing environmental performance. This research underscores that the adoption of sustainable practices can lead to competitive advantages, allowing hotels to differentiate themselves in a market where consumers are increasingly environmentally conscious. By fostering a culture of innovation and responsibility, hotels can effectively meet and exceed stakeholder expectations, thereby improving their overall sustainability performance.

Ultimately, this study contributes to the broader discourse on sustainability within the hospitality industry. It provides valuable insights into how stakeholder pressures can shape organizational behaviors and strategies, promoting a more environmentally responsible approach to business operations. As the hotel industry in Ghana continues to evolve, the findings of this research can serve as a foundational reference for understanding the critical role of green innovation in achieving enhanced environmental performance and meeting the challenges posed by an increasingly eco-conscious market.

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