



Sustainable Marketing Strategies and Financial Performance in the Hotel Industry: Does Digital Transformation and Integration Matter?

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ABSTRACT

This study examined the moderating role of digital transformation and integration in the relationship between sustainable marketing strategies and the financial performance of hotels in Ghana measured by cost efficiency, sales growth and financial stability. The underpinning theories pertinent to this topic include: the dynamic capability theory, resource-based theory, and contingency theory. These collectively furnish a robust foundation for contextualizing the research. The methodological framework employed for this investigation encompasses an explanatory design, integrating a quantitative methodology. A cumulative total of 272 questionnaires were duly filled out by patrons of hotels in Ghana. The empirical findings unveiled a statistically significant positive relationship between sustainable marketing strategies as well as cost efficiency, revenue growth, and financial stability respectively. Moreover, the outcomes indicate that digital transformation alongside integration exerts a significant moderating effect on the relationship between sustainable marketing strategies and the financial performance (cost efficiency, revenue growth, and financial stability) of hotels. The implications derived from this research, both practical and theoretical, are meticulously examined, shedding light on potential applications and influences stemming from the findings within the marketing domain. These implications may encompass realms such as sustainable marketing strategies, cost efficiency, revenue growth, financial stability, as well as the role of digital transformation and integration in the stated relationship. This investigation proffers significant insights pertinent to hotel administrators and policymakers, underscoring the criticality of harmonizing digital transformation with sustainable marketing endeavours to enhance financial outcomes effectively.

Keywords: Sustainable Marketing Strategies, Cost Efficiency, Revenue Growth, Financial Stability, Digital Transformation

JEL Classifications: M

1. INTRODUCTION

The tourism industry plays a significant role in local and global economic growth and development; in terms of employment opportunities, foreign exchange reserves as well as contribution to GDP (Thommandru et al., 2023). The global hospitality sector is increasingly taking on sustainable marketing strategies as an important element to enhance competitive edge and realize long-term growth (Han et al., 2021; Pham and Tsai, 2022). Service is an

action or a sequence of action of an intangible nature which takes place between a consumer and a service provider as remedies to consumer requirements (Akude et al., 2024). Thus, the ultimate aim of presenting service quality in hotels is to both satisfy and delight their customers.

For hotels, sustainability measures extend beyond merely reducing environmental harm; they are also focused on boosting financial performance. Evidence suggests that sustainable marketing

strategies can enhance cost efficiency by lowering resource usage and waste production, stimulate revenue growth by appealing to consumers who prioritize environmental concerns, and ensure financial stability through the cultivation of customer loyalty and mitigation of regulatory risks (Mensah and Blankson, 2022; García and Garcia-Muina, 2021). Yet, despite an expanding compilation of literature on the link between sustainable marketing and profitability, a notable absence of comprehensive research exists that examines the impact of sustainable marketing practices on cost efficiency, revenue growth, and financial stability within the realm of the hospitality sector, especially in burgeoning markets such as Ghana.

In Ghana, the uptake of sustainable marketing strategies by hotels remains in its formative stages, with promising implications for both environmental and fiscal outcomes (Nyarko and Badu, 2023). The hospitality sector in Ghana is progressively adopting these marketing methods to bolster competitiveness while aligning with worldwide sustainability norms. These approaches are perceived as significant for reaching varied fiscal goals, encompassing cost efficiency, revenue growth, and financial steadiness (Adjei and Boateng, 2022). Nonetheless, a considerable deficiency exists in fully comprehending how these sustainable marketing approaches influence the financial performance metrics of hotels in Ghana. Furthermore, the moderating influence of digital transformation and the amalgamation of technology in this specific context remains inadequately explored (Amoako and Appiah-Adu, 2023).

Cost efficiency stands as a leading financial aim for hotels implementing sustainable marketing tactics. Through the promotion of environmentally-friendly initiatives and sustainability agendas, hotels possess the ability to curtail operational expenditures related to energy, water use, waste management, and resource allocation (Mensah and Blankson, 2022). Nonetheless, there exists a scarcity of empirical data elucidating how sustainable marketing tangibly impacts cost efficiency within the hospitality industry in Ghana. Moreover, the influence of digital resources, such as customer relationship management (CRM) frameworks and digital marketing channels, in augmenting cost-efficiency results from these initiatives remains inadequately examined (Boadi et al., 2021).

Revenue growth constitutes another pivotal indicator of financial performance shaped by sustainable marketing strategies. Hotels that proficiently convey their sustainability efforts are positioned to captivate eco-friendly clientele and distinguish themselves from rivals, potentially resulting in augmented occupancy rates and elevated revenues (Nyarko and Badu, 2023). Nevertheless, the degree to which digital transformation and technology assimilation moderate the correlation between sustainable marketing and revenue growth is poorly delineated. Digital technologies like social media, online advertising, and booking platforms could potentially expand the outreach and efficacy of sustainable marketing endeavors; however, the implications of these factors within the Ghanaian landscape warrant further examination (Osei and Tetteh, 2022).

Financial stability is critical for the enduring success of hotels, enabling them to endure economic fluctuations and sustain

progressive growth. Sustainable marketing strategies might play a role in bolstering financial stability via fostering customer allegiance, enhancing brand standing, and diminishing regulatory uncertainties (Tetteh and Kusi, 2023). Nevertheless, the possible moderating influence of digital transformation, specifically concerning how digital technologies and tools can bolster financial stability, remains an area requiring additional exploration. The domain pertaining to sustainable marketing persists in ambiguity. Illustratively, the phenomenon of digital transformation possesses the potential to deliver to the hospitality sector, notably hotels, with concurrent data analytics and insights, thereby facilitating more judicious determinations regarding investments in sustainability alongside marketing stratagems (Kwok and Koh, 2021).

Despite an increasing corpus of literature concerning sustainability juxtaposed with digital transformation in the hospitality setting, there is a distinct paucity of investigations particularly addressing the impact of sustainable marketing strategies on financial performance in terms of cost efficiency, revenue growth, and financial stability among hotels in Ghana. Additionally, there exists a conspicuous lack of scholarly inquiry scrutinizing the moderating influence exerted by digital transformation and technological integration upon these relational dynamics (Appiah, 2023). Comprehending these interrelations is imperative for managers within the hotel sector and stakeholders whose aspirations lie in harnessing sustainable marketing paradigms and digital devices to achieve superior financial results.

Therefore, this study endeavours to bridge the existing research lacuna by investigating the ramifications of sustainable marketing strategies on cost efficiency, revenue growth, and financial stability in Ghanaian hotels, whilst concurrently probing the moderating influence of digital transformation and technology integration on the relationship. The research aims to furnish critical insights into the mechanisms through which hotels might refine their sustainable marketing initiatives employing digital tools with the objective of augmenting overarching financial performance. The specific aims of this inquiry encompass:

- To evaluate the relationship between sustainable marketing strategies and cost efficiency within hotels
- To analyse the relationship between sustainable marketing strategies and revenue growth within hotels
- To examine the relationship between sustainable marketing strategies and financial stability within hotels
- To scrutinize the moderating influence of digital transformation and technology integration on the nexus between sustainable marketing strategies and cost efficiency within hotels
- To examine the moderating influence of digital transformation and technology integration on the nexus between sustainable marketing strategies and revenue growth within hotels
- To evaluate the moderating influence of digital transformation and technology integration on the nexus between sustainability practices and financial stability within hotels.

Subsequent segments of the manuscript will delineate literature overviews pertaining to sustainable marketing strategies, digital transformation in conjunction with financial performance, thereby paving the way for the elucidation of the methodology employed

in this investigation. Analytic outcomes along with derived results shall be captured in the ensuing sections, culminating in a discussion of the findings alongside their theoretical and practical ramifications.

2. LITERATURE REVIEW

2.1. Theoretical Foundation and Hypotheses

Sustainable marketing strategies, and financial performance metrics along with the moderating influence of digital transformation and integration, creates a notably complicated dynamic within the scope of the hotel sector. The intent of this literature review is to integrate prevailing theoretical models and empirical studies to elucidate the interrelations among these various constructs.

2.2. Dynamic Capabilities Theory

The Dynamic Capabilities Theory, as articulated by Teece et al. (1997), underscores the significance of a firm's proficiency in the integration, construction, and reconfiguration of both internal and external competences in response to rapidly oscillating environments. Within the scope of sustainable marketing, dynamic capabilities can be construed as a hotel's adeptness at modifying its marketing strategies to encompass sustainable practices, while concurrently adapting to the shifting preferences of customers and prevailing market conditions (Buhalis and Leung, 2022).

Establishments exhibiting pronounced dynamic capabilities can more adeptly actualize sustainable marketing initiatives that bolster cost efficiency through the optimization of resource allocation and the decline of waste. Furthermore, such capabilities empower hotels to engender innovation within their service offerings, thereby appealing to novel customer demographics and facilitating revenue augmentation. The moderating influence of digital transformation holds significant importance in this context, as digital technologies furnish essential tools and data conducive to perpetual enhancement and strategic nimbleness (Kwok and Koh, 2021).

2.3. Resource-based View Theory

The resource-based view (RBV) theoretical framework contends that the competitive advantage of a firm is fundamentally linked to its proficiency in the stewardship of resources that are deemed valuable, scarce, difficult to imitate, and not easily replaceable (Barney, 1991). In relation to sustainable marketing strategies, it can be observed that hotels which capitalize on distinct resources including, but not limited to eco-friendly operational methodologies, sustainable technological implementations, and recognized green certifications may effectively distinguish themselves within the marketplace (Mensah and Blankson, 2022). In this light, sustainable marketing evolves into a strategic resource that potentially augments cost efficiency through the reduction of operational expenditures tied to waste management, energy utilization, and water resource consumption (García and García-Muina, 2021).

Furthermore, the RBV delineates that hospitality enterprises that commit resources to digital transformation and the integration of technology are likely to find themselves in a more advantageous

position when it comes to refining their sustainable marketing approaches. The employment of digital instruments such as data analytical frameworks, customer relationship management systems, and social media communication channels serves to equip hotels with enhanced insight into consumer preferences, thereby enabling the customization of marketing actions and the fortification of their competitive stance (Osei and Tetteh, 2022). This incorporation of digital resources presents an avenue through which hotels can amplify cost efficiency, stimulate revenue expansion, and sustain a semblance of financial equilibrium.

2.4. Contingency Theory

The Contingency Theory advances the premise that a universal methodology for organizational management is unimpressive; rather, the efficacy of a strategic implementation is contingent upon particularities inherent in both internal and external contexts (Lawrence and Lorsch, 1967). In relation to sustainable marketing strategies within the Ghanaian hotel sector, this theoretical framework implies that the ramifications of such strategies regarding cost efficiency, growth in revenue, and financial reliability will exhibit variance predicated upon determinants such as the dimensions of the hotel, the specific market segment, demographic attributes of clientele, as well as the competitive environment (Tetteh and Kusi, 2023).

Digital transformation and the incorporation of technology serve as moderating variables within the contingency framework that influence the efficacy of sustainable marketing endeavours. To illustrate, a sizable hotel conglomerate endowed with significant resources is likely to derive superior advantages from digital marketing technologies when juxtaposed with a smaller, self-governing hotel due to the existence of economies of scale and an extensive market outreach (Osei and Tetteh, 2022). Likewise, the degree of digital integration present can considerably affect the capability of a hotel to execute and promote its sustainability initiatives, thereby affecting subsequent financial ramifications.

2.5. Sustainability and Cost Efficiency

Sustainable marketing strategies are conceptualized to foster practices that are environmentally friendly, while also generating value for the enterprise and relevant stakeholders. In the hospitality sector, particularly in hotels, these strategies often involve promoting energy-efficient practices, reducing waste, and actively encouraging resource conservation (Zhang et al., 2023). Cost efficiency emerges as a pivotal outcome resultant from sustainable marketing efforts, as it possesses the potential to exert a direct influence on the financial performance of hotels. The execution of energy-efficient initiatives, followed by their dissemination via sustainable marketing channels, has the potential to lead to notable reductions in operational expenditures (Mensah and Blankson, 2022).

Empirical evidence suggests that sustainable marketing approaches can culminate in considerable financial savings through the minimization of waste and the optimization of resource utilization (Mensah and Blankson, 2022). For instance, the endorsement of water-saving practices alongside waste reduction via marketing strategies not only bolsters the establishment's public image but

concurrently contributes to the decrease in utility expenditures (Smith and Williams, 2023). Furthermore, establishments that engage in the promotion of their sustainability-centered practices are likely to experience diminished financial burdens related to compliance with regulatory mandates and the management of waste (García and García-Muina, 2021).

Nevertheless, the degree of achievement concerning cost efficiency as a result of these strategies is contingent upon the magnitude of digital transformation embraced by the entities. Digitally-oriented tools, including data analytics and sophisticated resource management systems, can substantially enhance the efficacy of sustainable marketing initiatives by furnishing real-time data insights, thus allowing for enhanced decision-making processes (Buhalis and Leung, 2022). An illustrative case would be the integration of digital monitoring platforms for energy consumption, which can significantly aid hotels in the optimization of their operational frameworks and the consequent reduction of associated costs. Consequently, the following hypothesis has been proposed;

H₁: There is a statistically significant relationship amid sustainable marketing strategies as well as cost efficiency in hotels.

2.6. Sustainability and Revenue Growth

The aspect of revenue development presents a pivotal element influenced by sustainable marketing methodologies. Establishments in the hospitality sector that proficiently articulate their environmental sustainability initiatives via promotional channels may successfully draw patrons who prioritize ecological concerns, thus potentially elevating both occupancy statistics and sales figures for eco-oriented services and products (Han and Hyun, 2022). Activities aimed at sustainable marketing augment the branding persona of the hospitality entities, concurrently appealing to an expanding demographic of eco-friendly consumers, who exhibit a predisposition to disburse additional funds for sustainable offerings.

Empirical investigations indicate a tendency for hotels espousing green marketing tactics to reap enhancements in customer fidelity and an uptick in reservations among environmentally conscious travelers (Nyarko and Badu, 2023). Moreover, these hospitality firms frequently accrue the advantages of affirmative testimonials and endorsements on social media platforms, which could lead to notable revenue escalations. For instance, campaigns that accentuate the employment of renewable energy resources or the sustainable procurement of culinary products could resonate with clientele who prioritize ecological considerations in their purchasing behaviors.

Numerous scholarly works have illuminated a favorable correlation between sustainability endeavors and revenue growth within hotels. For example, the findings presented by Pham and Tsai (2022) elucidate that hospitality entities integrating extensive sustainability frameworks, encompassing energy efficiency tactics, waste minimization approaches, and sustainable sourcing protocols, witnessed marked revenue upswings. Their investigation, which was predicated on data derived from a selection of Southeast Asian hotels, concluded that sustainable

initiatives bolster a hotel's competitive stance in the marketplace, effectively attracting eco-savvy consumers and permitting these establishments to impose premium pricing structures, thereby catalyzing revenue progression (Pham and Tsai, 2022).

In a parallel vein, research conducted by Berezan et al. (2022) corroborates the assertion that sustainability actions can foster revenue growth. Their comprehensive analysis scrutinized a broad spectrum of sustainable practices, which included eco-certifications, environmentally friendly amenities, and initiatives aimed at community engagement, ultimately revealing a positive association with both occupancy metrics and Average Daily Rates (ADRs). The authors contend that such sustainability efforts can be employed as a strategy for market differentiation, thus enabling hotels to maintain distinctiveness in a saturated market while appealing to an increasingly eco-conscious consumer demographic (Berezan et al., 2022).

Further reinforcing the discourse, an investigation by Han et al. (2023) delineates the revenue-enhancing impacts spurred by sustainability. Their longitudinal review of hotels across European and North American contexts affirmed that establishments demonstrating a robust commitment to sustainability frameworks, such as carbon reduction initiatives and waste minimization, exhibited steady revenue growth trajectories over prolonged periods. The analysis emphasized the significance of consumer trust and loyalty, positing that sustainable practices contribute to the cultivation of a strong brand ethos, which subsequently facilitates increased customer retention alongside revenue augmentation (Han et al., 2023).

Nevertheless, it is imperative to acknowledge that not every scholarly inquiry has identified a linear positive linkage between sustainability and revenue growth. Certain academics have illuminated that the financial gains derived from sustainable practices may differ, contingent upon the market positioning and targeted clientele of the hotel. For instance, Zhang et al. (2023) explored the ramifications of sustainability implementations on revenue trajectories across varied hotel industry strata and discerned that advantages were markedly more substantial in upscale and luxury segments in comparison to budget-oriented accommodations. This observation suggests that the revenue enhancements linked to sustainability may be particularly pronounced among hotels equipped to exploit these strategies to rationalize elevated pricing and cater to a more affluent clientele that possesses environmental sensibilities (Zhang et al., 2023).

On an opposing note, Nguyen and Nguyen (2021) urge caution against adopting a universal approach to sustainability within the hotel sector. Their examination of mid-scale hotels in burgeoning markets revealed a lack of significant correlation between sustainability initiatives and revenue growth. They proposed that establishments engaged in price-sensitive markets might not experience financial benefits from such sustainability efforts, reflecting the nuanced complexities of the relationship between environmental practices and revenue performance in the hospitality domain. In various market scenarios, it is observed that consumers often place a higher significance on cost considerations

rather than sustainability initiatives, which concurrently leads to the scenario whereby the anticipated financial advantages of sustainable practices may remain unmaterialized in instances where customers do not recognize inherent value within these sustainability efforts (Nguyen and Nguyen, 2021). This particular observation insinuates that the ramifications of sustainability endeavors concerning revenue growth might be contingent upon specific contextual factors, which include but are not limited to prevailing market conditions, consumer preferences, and the intricacies of competitive landscapes. Consequently, the following hypothesis has been proposed;

H₂: There is a statistically significant relationship amid sustainable marketing strategies as well as revenue growth in hotels.

2.7. Sustainability and Financial Stability

The phenomenon of financial stability holds significant importance regarding the prolonged success of hospitality establishments, especially in unpredictable market environments like that of Ghana. The implementation of sustainable marketing strategies could potentially play a role in enhancing financial stability by engendering customer loyalty, bolstering brand reputation, and minimizing the risks associated with environmental and regulatory frameworks (Tetteh and Kusi, 2023). As an illustration, the promotion and adherence to sustainable practices by hotels may facilitate the avoidance of possible fines and sanctions related to environmental legislative compliance, thus safeguarding their financial viability.

The attainment of financial stability through sustainable marketing efforts is further correlated with a hotel's capability to engage and retain clientele who prioritize sustainability. This particular demographic of customers demonstrates a reduced tendency to pivot their loyalty solely upon price considerations, which results in a more stable revenue influx during periods of economic adversity (Nyarko and Badu, 2023). Furthermore, the integration of sustainable marketing can bolster a hotel's capability to withstand challenges by aligning its identity with enduring environmental paradigms, which bears pronounced relevance in contexts where

sustainability is progressively gaining prominence. Consequently, the following hypothesis has been proposed;

H₃: There is a statistically significant relationship amid sustainable marketing strategies as well as financial stability in hotels.

As illustrated in Figure 1, the conceptual framework demonstrates the relationships among sustainable marketing strategies, digital transformation and integration, and firm financial outcomes, including cost efficiency, revenue growth, and financial stability (Conceptual Framework, 2025).

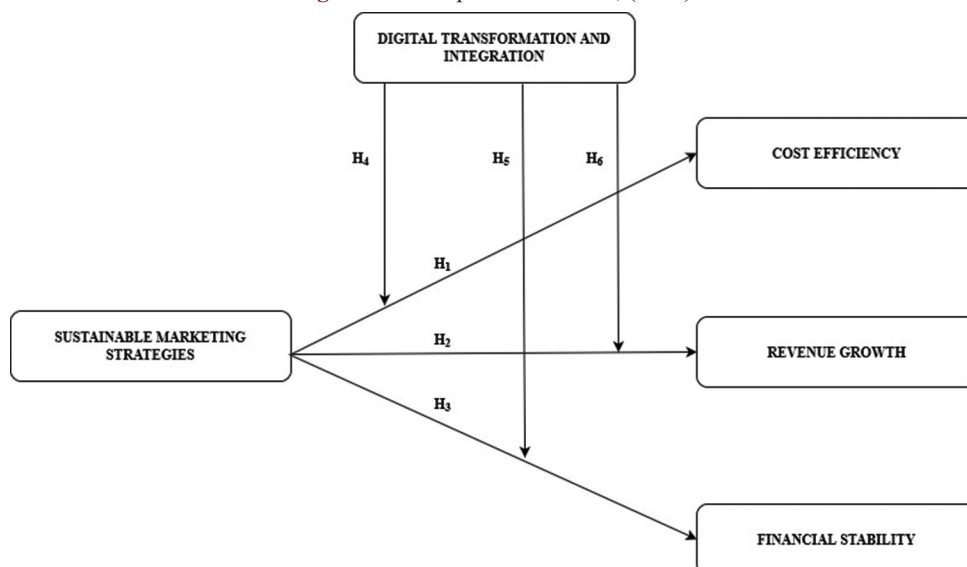
2.8. Moderating Role of Digital Transformation and Information Integration

The phenomenon of digital transformation and integration with technology constitutes pivotal moderating elements that bear influence upon the efficacy of sustainable marketing strategies as they pertain to the achievement of cost efficiency, expansion of revenue streams, and maintenance of financial stability. As delineated by Buhalis and Leung (2022) digital transformation encapsulates the process of embracing digital technologies that serve to augment business processes, facilitate customer engagement, and enhance decision-making capabilities.

When discussed in the context of sustainable marketing, the amalgamation of digital technologies permits hospitality establishments, specifically hotels, to attain superior levels of cost efficiency, primarily through automated systems and decisions founded upon empirical data (Kwok and Koh, 2021). An illustrative example of this would encompass the deployment of digital instruments designed for energy management, which empower hotels to monitor and regulate their energy utilization with heightened efficacy, culminating in reduced operational costs and an enhancement of the sustainability quotient of their activities.

Moreover, in the arena of revenue augmentation, the advent of digital transformation grants hotels the capacity to engage a broader demographic while simultaneously fostering more personalized

Figure 1: Conceptual framework, (2025)



and substantive interactions with clientele. As postulated by Camilleri (2021), the assimilation of technologies such as social media platforms, digital advertising modalities, and Customer Relationship Management (CRM) systems furnishes hospitality providers with a robust framework to articulate their sustainability initiatives with greater efficacy, thereby attracting travelers with a proclivity for eco-friendly choices and nurturing customer allegiance. This dynamic inevitably leads to augmented occupancy ratios and an associated increase in revenues derived from offerings that align with environmentally sustainable practices.

Lastly, the incorporation of digital technologies contributes significantly to the fortification of financial stability within hotels by supplying them with requisite tools that enable more effective risk management and the formulation of judicious strategic choices. For instance, Osei and Tetteh (2022) suggested that the application of data analytics engenders valuable insights pertaining to market trajectories, consumer preferences, and operational efficacy, thus affording hotels the agility to recalibrate their sustainable marketing methodologies in alignment with fluctuating contextual variables. Specifically, the use of digital platforms can provide real-time insights into customer satisfaction levels, enabling hotels to promptly adapt their sustainable marketing strategies to align with consumer expectations, ultimately leading to improved financial performance. Consequently, the following hypothesis has been proposed;

- H₄: There is a statistically significant moderating relationship of digital transformation and information integration on the relationship amid sustainable marketing strategies as well as cost efficiency in hotels.
- H₅: There is a statistically significant moderating relationship of digital transformation and information integration on the relationship amid sustainable marketing strategies as well as revenue growth in hotels.
- H₆: There is a statistically significant moderating relationship of digital transformation and information integration on the relationship amid sustainable marketing strategies as well as financial stability in hotels.

3. METHODOLOGY AND DATA

3.1. Survey Instrument

The survey instrument's design involved a selection of a questionnaire sourced from literature, aiming to evaluate the various components pertaining to the research model. Utilizing data derived from a sample population, this investigation scrutinized both the reliability and validity of the instrument, in addition to testing the hypothesized relationships. Specifically, the question types intended for the assessment of sustainable marketing strategies within the context of hotels were adapted (Tzschentke et al., 2021; Higgins-Desbiolles et al., 2023). Moreover, the items concerning cost efficiency underwent modifications (Kim and Lee, 2021; Pham and Tsai, 2022). Additionally, questions meant to gauge revenue growth were revised (Han and Hyun, 2018; Zientara and Zamojska, 2018), while the items addressing financial stability experienced adjustments (Chen and Kim, 2019; García and García-Muina, 2020). It is also notable that financial stability items were further adapted (Buhalis and Leung, 2018; Camilleri,

2018). The investigation utilized a 5-point Likert scale for data collection, with anchors ranging from 1 (not at all) to 5 (very large extent). It should be emphasized that the content validity of the initial survey was evaluated by two academic faculties, specifically marketing and finance.

3.2. Sampling and Data Collection

The survey methodology involved a cross-sectional approach aimed at a collective of 740 hotels that were documented with the Ghana Tourism Authority (ATA) as of the year 2024, this population base was duly ascertained. The hotels under scrutiny were systematically classified in alignment with their star ratings. The research invoked the widely recognized Krejcie and Morgan (1970) formula articulated below for the purpose of ascertaining the requisite minimum sample size.

$$S = \frac{X^2 NP(1-P)}{d^2 (N-1) + X^2 P(1-P)}$$

Where:

S = the required sample size.

X² = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841)

N = the population size

P = the population proportion assumed to be 0.5 since this would provide a maximum sample size

d = the degree of accuracy expressed as a proportion (0.05)

In alignment with the sample size calculation methodology articulated by Krejcie and Morgan (1970), a delineated target population encompassing 740 registered star rated hotels was determined, necessitating a minimum requisite sample size of 253 for the subject survey, adjudicated at a 95% confidence level alongside a 0.05 margin of error.

In pursuit of attaining this specified sample excess, a total of 290 questionnaires were disseminated employing the simple random sampling strategy, facilitated through Google Forms. The retrieval of 272 questionnaires was successful, culminating in a response rate quantifiably gauged at 93.8%. It is pertinent to denote that each completed questionnaire emanated from a managerial representative affiliated with each distinct hotel participating in the study. To ensure adequate statistical power, a priori power analysis was conducted using G*Power (Faul et al., 2009), which indicated a minimum required sample size of 92 to achieve a statistical power of 0.80. Accordingly, the obtained sample of 272 completed surveys exceeded this requirement, providing sufficient data for robust statistical analysis.

The hotels encompassed within this research are distinguished for their significant national and international reputes, particularly attributed to their pronounced engagement with sustainable operational practices, notable visibility and distinctive accommodations. Prior to the initiation of the survey, participating individuals were presented with a cover letter elucidating the objectives of the study and stipulating eligibility criteria. Moreover, the researchers conducted preliminary informal

inquiries regarding the participants' willingness to engage in the study; those articulating interest were subsequently invited to voluntarily complete the questionnaire.

4. DATA ANALYSIS

The process of statistical analysis was executed through the utilization of Smart PLS-SEM (version 4.0) software with the intention of evaluating the interconnections amid sustainability marketing practices and financial performance, coupled with the moderating influence of digital transformation and integration outcomes (Ringle et al., 2022). The application of PLS-SEM was deemed appropriate owing to its inherent versatility in addressing diverse modelling obstacles as opposed to the rigid and complex assumptions that accompany traditional multivariate statistics (Boonlertvanich, 2019).

According to Hair et al. (2019), parameters that evaluate a concept within the structural model are recommended to achieve a threshold of 0.70 for studies employing validated constructs, which is necessary for ensuring the reliability of the research items. This requirement arises from the fact that such indicators must account for over 50% of the variance associated with the indicator. Given that this particular study relied on validated constructs from antecedent research, a reliability assessment was performed using the indicators, adhering to a minimal reliability benchmark of 0.70.

4.1. Profile of Respondents

Out of the 272 completed questionnaires, there were 136 male participants (50.0%) and 136 female participants (50.0%). A significant number of respondents, over half, indicated that their

hotels had more than 151 rooms, totaling 150 respondents (55.1%). Also, 87 respondents (32.0%) said their hotels had between 51 and 150 rooms, while 34 respondents (12.5%) reported their hotel size was between 1 and 50 rooms. Looking at roles in the hotel structure, 152 respondents (55.9%) were departmental heads, 98 respondents (36.0%) were managers, and only 22 respondents (8.1%) were owners. When considering how long the hotels have been operating, a large portion of 165 respondents (60.7%) said their hotels had been open for over 10 years. A group of 84 respondents (30.9%) stated their hotels had been running for 6-10 years; meanwhile, 12 respondents (4.4%) had hotels that had operated for 1-5 years, and just 10 respondents (3.7%) had hotels in business for less than a year.

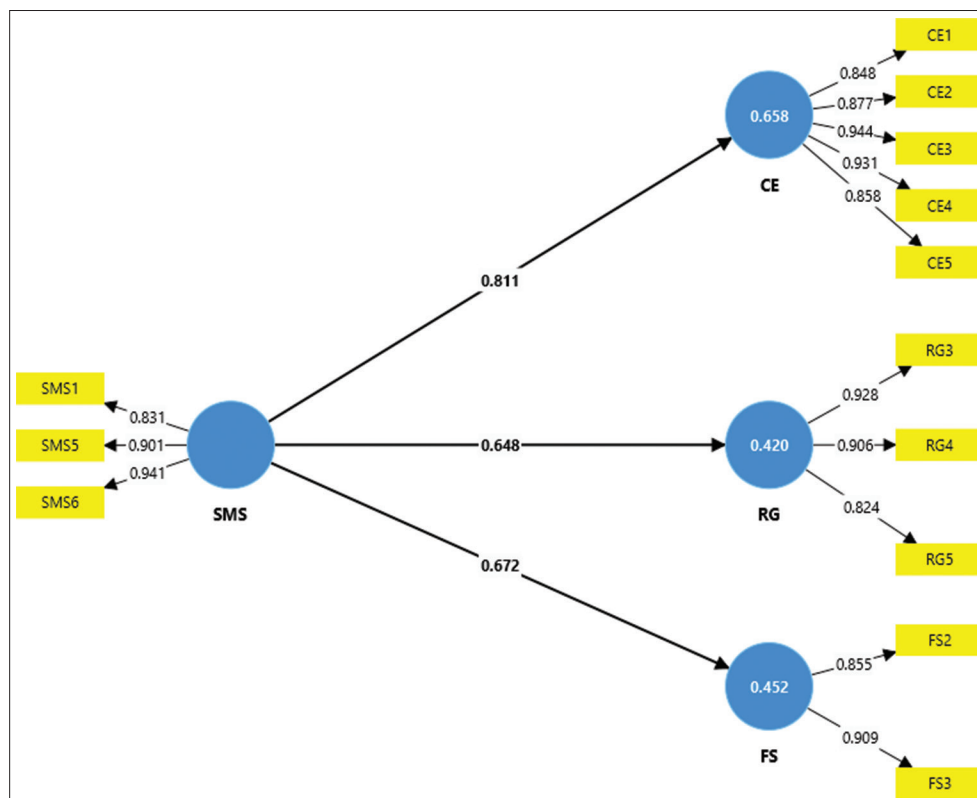
4.2. Evaluation of Measurement Model

The assessment of the measurement model was conducted utilizing PLS-SEM (version 4). The conceptual framework for this study was characterized by five distinct components, specifically: sustainable marketing strategies, cost efficiency, revenue growth, financial stability, as well as digital transformation and integration.

As shown in Figure 2, the measurement model illustrates the relationships among sustainable marketing strategies (SMS), cost efficiency (CE), revenue growth (RG), and financial stability (FS), confirming the reliability and validity of the constructs (Measurement Model, 2025).

In order to perform an evaluation pertaining to the measurement model, a scrutiny of the construct reliability, inclusive of the convergent validity as well as the discriminant validity across the five constructs was conducted (Hair et al., 2019; Hanafiah, 2020). The criterion for establishing reliability necessitates that measures

Figure 2: Measurement model



such as Cronbach's alpha, composite reliability denoted as rho_a, and an alternative composite reliability indicated as rho_c must all achieve values surpassing the threshold of 0.7. Furthermore, to substantiate convergent validity, it is essential that the average variance extracted, commonly referred to as AVE, surpass the benchmark value of 0.5 (Ringle et al., 2022).

Table 1 indicates that the items, alongside constructs engaged in this examination, exhibited sufficient levels of convergent validity and reliability across the five constructs utilized in this study.

The most conservative approach, namely the heterotrait-monotrait (HTMT) ratio, was employed for the assessment of discriminant validity (Henseler et al., 2015). It has been posited that the HTMT ratio serves as a superior evaluative criterion when compared with traditional assessment methodologies (Henseler et al., 2015). To substantiate discriminant validity, the HTMT ratio for each construct must fall below the threshold of 0.9 (Ringle et al., 2022). The HTMT findings are depicted in Table 2, which indicates an acceptable level of discriminant validity.

4.3. Evaluation of the Structural Model

The structural model necessitates evaluation in order to examine the interconnections present between green marketing practices and financial performance. As a result, the hypotheses formulated for the study was tested.

4.4. Collinearity Assessment

The assessment of collinearity present within latent variables is conducted via the utilization of the Variance Inflated Factor (VIF). In this context, a VIF value that is equal to or greater than 5 suggests a potential collinearity issue (Hair et al., 2017). As articulated in the outcomes displayed in Table 3, it has been observed that all VIF values fall beneath the threshold of 5, thereby indicating an absence of significant collinearity concerns within the model. As a direct result of this finding, it can be concluded that the model is devoid of common method bias (Kock, 2015).

The appraisal of the path coefficients should, in conjunction with R-square (R^2) values and the Stone-Geisser criterion (Q^2), be conducted for the evaluation of sustainable marketing strategies with respect to cost efficiency, revenue growth, and financial stability in the assessment of the structural model (Hair et al., 2017). The R^2 value of 0.658 indicative of cost efficiency is classified as an excellent score within the domain of behavioral sciences (Ali et al., 2018), signifying that 65.8% of the variance in cost efficiency can be accounted for by the predictor. Additionally, the R^2 score of 0.452 corresponding to financial stability is characterized as a medium score in the same academic field (Ali et al., 2018), thus reflecting that 45.2% of the variance in financial stability is elucidated by the predictor. The revenue growth's R^2 value of 0.420 is also deemed as a medium score (Ali et al., 2018), highlighting that 42.0% of the predictor contributes to the variance in revenue growth. Notably, the explained variance exceeds the established minimum threshold for R^2 assessment, which is set at 25% (Hair et al., 2016).

According to Ali et al. (2018), it is imperative for the Q^2 assessment to surpass zero to affirm the prognostic capability of a structural

Table 1 : Cronbach alpha, composite reliability Rho_a and composite reliability rho_c

Constructs	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
CE	0.936	0.939	0.951	0.797
FS	0.719	0.742	0.875	0.779
RG	0.865	0.900	0.917	0.787
SMS	0.870	0.870	0.921	0.796

CE: Cost efficiency, FS: Financial stability, RG: Revenue growth, SMS: Sustainable marketing strategies

Table 2: Discriminant validity assessment (HTMT)

Constructs	CE	FS	RG
FS	0.846		
RG	0.701	0.877	
SMS	0.896	0.839	0.727

Table 3: Inner VIF

Constructs	VIF
SMS -> CE	1.00
SMS -> FS	1.00
SMS -> RG	1.00

model. In the present context, the Q^2 assessments resulted in values of 0.656 for cost efficiency, 0.448 for financial stability, and 0.415 for revenue growth. Such values serve to substantiate the model's commendable predictive prowess.

It can be concluded that sustainable marketing strategies exert a positive influence on cost efficiency, revenue growth, and financial stability in that order, with cost efficiency being predominantly affected, followed thereafter by financial stability and revenue growth.

4.5. Hypotheses Testing (Direct Effect)

In summation regarding the direct effect contentions, it has been evidenced that all three proposed hypotheses received support. Specifically, the correlation of sustainable marketing strategies to cost efficiency is conveyed by ($\beta = 0.811$, $P < 0.01$). Additionally, the relationship between sustainable marketing strategies and financial stability is reflected in ($\beta = 0.672$, $P < 0.01$). Furthermore, the association of sustainable marketing strategies with revenue growth presents ($\beta = 0.648$, $P < 0.01$), as illustrated further in Table 4.

The inquiry additionally evaluated the magnitude of the effect size (f^2), which serves as an indicator concerning the influence of a particular exogenous construct on an outcome variable. In accordance with the recommendations set forth by Cohen (1988), the findings from the inquiry indicated that sustainable marketing strategies exert a substantial influence on cost efficiency, revenue enhancement, and financial stability in their respective contexts.

4.6. Moderation Effect

A particular hypothesis presently under investigation aims to evaluate the moderating function that digital transformation and integration may play concerning the relationship that exists between sustainable marketing strategies and variables such as cost

efficiency, revenue growth, and financial stability. Moderation is characterized as a condition where the relationship between two constructs is not stable, but rather contingent upon the level of a third variable, which is identified as a moderator (Hair et al., 2017).

As illustrated in Figure 3, the moderating effect of digital transformation and integration (DTI) on the relationship between sustainable marketing strategies (SMS) and firm performance outcomes—cost efficiency (CE), revenue growth (RG), and financial stability (FS)—is clearly demonstrated (Moderation Effect, 2025).

In the context of this study, the assessment pertaining to the moderating effect was duly conducted. It merits highlighting that the phenomenon of digital transformation and integration exhibits a considerable moderating influence ($\beta = 0.200$, $P < 0.01$) within the nexus connecting sustainable marketing strategies and cost efficiency. Additionally, digital transformation and integration demonstrates a notable moderating effect ($\beta = 0.117$, $P < 0.01$) on the association between sustainable marketing strategies and financial stability. Furthermore, it is observed that digital transformation and integration displays a significant moderating effect ($\beta = 0.211$, $P < 0.01$) regarding the relationship linking sustainable marketing strategies with revenue growth (Table 5).

In accordance with the recommendations posited by Kenny (2019), Table 5 elucidates that the moderating role of digital transformation and integration exhibits a substantial impact on the association

between sustainable marketing strategies, as indicated by an effect size of ($f^2 = 0.199$), and cost efficiency. Additionally, the moderating influence of digital transformation and integration manifests a comparatively minor effect size regarding the relationship between sustainable marketing strategies ($f^2 = 0.038$) and financial stability. Furthermore, the moderating effects of digital transformation and integration reveal a considerable effect size on the relation connecting sustainable marketing strategies ($f^2 = 0.172$) and revenue growth.

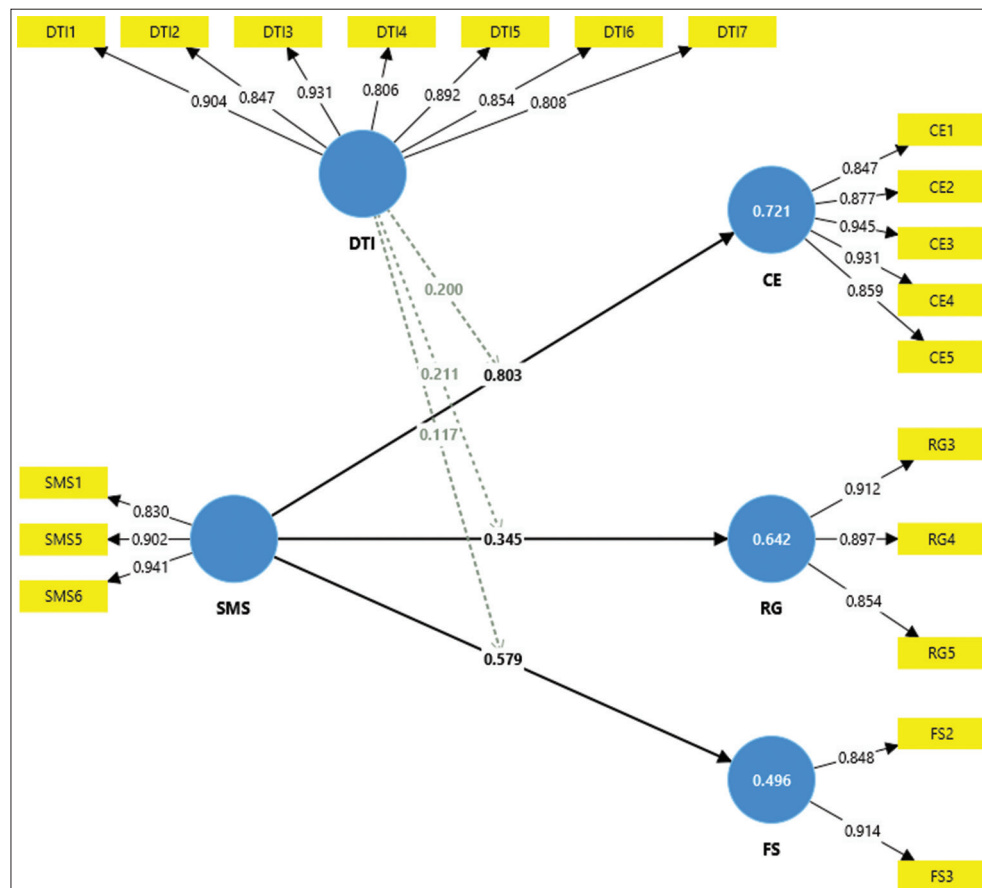
Table 4: Hypotheses analysis

Constructs	Original sample (O)	f-square	T statistics (O/STDEV)	P-values	Decision
SMS -> CE	0.811	1.922	58.091	0.000	Supported
SMS -> FS	0.672	0.824	18.455	0.000	Supported
SMS -> RG	0.648	0.723	19.429	0.000	Supported

Table 5: Hypotheses testing (moderation effect)

Constructs	Original sample (O)	f-square	T statistics (O/STDEV)	P-values	Decision
DTI x SMS -> CE	0.200	0.199	10.811	0.000	Supported
DTI x SMS -> FS	0.117	0.038	4.816	0.000	Supported
DTI x SMS -> RG	0.211	0.172	7.609	0.000	Supported

Figure 3: Moderation effect



5. DISCUSSION

Based upon the theoretical frameworks of dynamic capability theory, resource-based theory, and contingency theory, the research undertook an examination of the triadic impression of sustainable marketing strategies within the hotel industry, namely, cost efficiency, revenue growth, and financial stability, with the role of digital transformation and integration acting as a moderator. The findings provide empirical evidence underscoring the significant role that sustainable marketing strategies fulfill in facilitating cost efficiency, revenue growth, and financial stability.

In a comprehensive evaluation, six proposed hypotheses received validation. The analysis identified a positively significant relationship between sustainable marketing strategies and cost efficiency. Implicatively, sustainable marketing strategies foster cost efficiency in the hospitality sector via diminishing expenditures associated with energy, water, and waste management through the adoption of methodologies such as energy-efficient lighting, water-conserving fixtures, and recycling initiatives. These approaches concurrently enhance brand reputation, drawing in guests who prioritize environmental considerations and are hence inclined to pay a premium, ultimately improving customer loyalty and occupancy figures. Furthermore, such sustainable practices engender operational efficiencies, promote employee engagement, and curtail turnover rates. Financially, the pursuit of sustainability provides long-term advantages such as decreased risks linked to regulatory compliance and market transitions toward sustainable practices.

Moreover, a positively significant relationship was also established regarding sustainable marketing strategies with respect to revenue growth. This suggests that driving revenue growth is facilitated through sustainable marketing strategies aimed at attracting environmentally aware consumers and corporate clientele, which supports the feasibility of premium pricing and elevates customer experiences. Hospitality establishments endorsing eco-conscious practices are afforded opportunities to differentiate themselves within the market, thereby amplifying guest occupancy rates. Sustainable endeavors serve to rationalize elevated pricing structures and cultivate customer allegiance, while various certifications and accolades enhance both reputation and visibility. Collaborations with local enterprises and engagement within the community yield distinctive experiences contributing to heightened guest expenditure and encouraging repeat patronage. By aligning operations with prevailing market trends and consumer anticipations regarding sustainability, hotels maintain a strategic advantage, ensuring ongoing revenue escalation and enduring financial prosperity.

Additionally, a significant positive linkage was acknowledged between sustainable marketing strategies and financial stability, as seen in Table 4. Implicatively, the enhancement of financial stability within hotels is augmented through sustainable marketing strategies, which refine cost management via resource efficiency, engendering a dedicated customer base, and alleviating regulatory risks. These strategies resonate with eco-conscious clientele and corporate patrons, presenting fresh revenue channels while

mitigating market susceptibility. By endorsing sustainability, hotels can significantly bolster their reputation and brand equity, nurturing consumer trust and loyalty. This paradigm also promotes extended strategic foresight, attracting investors whose emphasis lies in sustainable growth. It is worthy of note, that sustainable marketing cultivates not only a reduction in costs and risks but also consolidates long-term financial stability within the hospitality industry.

The forthcoming hypothesis endeavored to evaluate the significance of the moderating influence posed by digital transformation and integration upon the relationships established between sustainable marketing strategies and the financial performance of hotels. The outcomes delineated in Table 5 intimated that digital transformation and integration exerts a positively significant moderating effect on the relationship between sustainable marketing strategies and the cost efficiency in hotels. Specifically, the results indicate that the adoption and integration of digital technologies strengthen the cost-saving potential of sustainability-driven marketing initiatives. This suggests that when hotels leverage digital tools, such as energy management systems, smart resource allocation platforms, and data analytics, they are better positioned to execute sustainable practices that translate into tangible financial benefits. Furthermore, the finding highlights the synergistic impact of digital innovation and sustainability on organizational performance. For instance, digital transformation facilitates real-time data monitoring and predictive analytics, allowing hotels to optimize resource use, reduce waste, and streamline operations, all of which contribute to cost efficiency. In the context of marketing, digital platforms enable more targeted and personalized communication strategies that not only promote eco-friendly initiatives but also resonate more effectively with environmentally conscious consumers. Moreover, the moderating role of digital integration implies that sustainable marketing strategies are more effective in digitally advanced environments. Hotels that have embraced digital infrastructure are likely to experience greater returns on their sustainability investments compared to those relying on traditional methods. This finding underscores the importance of aligning sustainability efforts with technological capabilities, as digital transformation not only enhances operational efficiency but also strengthens the strategic value of sustainability in a competitive hospitality market.

The findings derived from Table 5 reveal that digital transformation and integration significantly moderate the relationship between sustainable marketing strategies and revenue growth in the hotel industry. This suggests that the positive impact of sustainable marketing on revenue generation is significantly strengthened in hotels that have embraced digital technologies. In essence, digital integration acts as a catalyst, amplifying the effectiveness of sustainability-driven marketing efforts in fostering increased revenue. This result emphasizes the role of digital innovation in creating value through sustainability. By integrating digital platforms, such as customer relationship management systems, data analytics, AI-powered personalization, and digital booking interfaces, hotels can more effectively communicate their sustainability values, tailor offerings to eco-conscious consumer segments, and engage customers through interactive and

transparent sustainability initiatives. These capabilities not only foster customer trust and loyalty but also translate into increased bookings, upselling opportunities, and overall revenue growth. Importantly, the moderating effect highlights that the presence of digital transformation enhances the strategic coherence between marketing and sustainability goals. Hotels that merely adopt sustainable marketing without the support of digital tools may find it challenging to scale or personalize their efforts, thereby limiting their potential to influence revenue outcomes. In contrast, digitalized hotels are better equipped to gather and analyze customer data, anticipate preferences related to sustainability, and deliver relevant value propositions, ultimately strengthening the market appeal of their sustainable practices.

Consistent with the earlier findings, the data presented in Table 5 further highlight that digital transformation and integration significantly moderate the relationship between sustainable marketing strategies and financial stability in the hotel sector. This reinforces the critical role that digital infrastructure plays not only in driving operational efficiency and revenue growth but also in fostering long-term financial resilience through sustainability-oriented marketing initiatives. Financial stability in the hospitality industry is typically influenced by the ability of firms to adapt to market changes, manage costs effectively, and build enduring customer relationships. The moderating effect identified suggests that when hotels integrate digital technologies into their marketing and operational processes, the stabilizing effects of sustainable marketing are more pronounced. In other words, digital transformation strengthens the capacity of hotels to realize the financial risk mitigation and long-term value generation associated with sustainability. Digitally enabled hotels can leverage advanced analytics, forecasting tools, and real-time monitoring systems to better align their marketing strategies with consumer expectations and sustainability benchmarks. This agility allows them to anticipate shifts in consumer behavior, regulatory changes, or resource constraints factors that, if poorly managed, can destabilize financial performance. Sustainable marketing strategies, when supported by digital capabilities, thus become more adaptive and responsive, fostering financial consistency even in fluctuating market environments. Moreover, digital integration provides a platform for transparency and accountability, which are increasingly demanded by both consumers and investors. Hotels that can communicate and demonstrate their sustainability efforts through digital channels, such as websites, apps, and social media are more likely to gain stakeholder trust. This trust not only enhances brand equity but also contributes to customer retention and repeat business, both of which are crucial for maintaining financial stability.

6. CONCLUSION

The relationship between sustainable marketing strategies and cost efficiency in hotels exhibits a positively significant correlation. Through the reduction of energy consumption, resource utilization, waste minimization, reputation enhancement, and operational efficiency, establishments within the hospitality sector may realize considerable cost savings whilst appealing to an increasingly environmentally aware consumer base. The adoption of sustainability within marketing and operational frameworks

transcends mere trendiness, embodying a strategic methodology poised to catalyze prolonged financial viability and resilience amid competitive market conditions.

Furthermore, the connection between sustainable marketing strategies and revenue growth in the hotel sector is similarly positively significant. This engagement with eco-conscious clientele, the capacity to command higher pricing, the lure of corporate customers, the beneficial impacts of certifications, community collaboration, and responsiveness to market tendencies all contribute to the enhancement of financial outcomes while simultaneously fostering a sustainable future. With rising consumer expectations for sustainability, hotels proactive in their sustainability endeavors prepare themselves for emergent revenue potentials and prospects for enduring achievement.

In addition, sustainable marketing strategies correlate positively with the financial stability of hotels. By strategically reducing outlays, fostering customer allegiance, lessening risks, accessing novel markets, reputation enhancement, and engaging in foresighted planning, sustainability practices contribute to a fortified financial standing for hotels. As the consumer, investor, and regulatory focus on sustainability intensifies, hospitality establishments that adeptly weave sustainability into their marketing and operational conduct will likely fortify their financial stability and secure lasting success in the competitive landscape.

The study provides empirical support for the proposition that digital transformation serves as a critical enabler in maximizing the financial performance benefits of sustainable marketing. As the hospitality sector continues to evolve in response to technological advancements and sustainability imperatives, the convergence of these two domains will likely become an essential determinant of competitive advantage and long-term viability.

Also, the findings underscore the transformative potential of digital integration in magnifying the revenue impact of sustainable marketing strategies. For the hospitality industry, this convergence of digital and sustainable innovation is not merely an operational enhancement but a strategic imperative. Hotels aiming for sustained growth in a competitive and environmentally aware market must prioritize investments in both domains to fully capitalize on their interrelated benefits.

Lastly, the moderating role of digital transformation and integration on the relationship between sustainable marketing strategies and financial stability underscores the synergistic benefits of combining technological innovation with sustainability initiatives. As hotels navigate an increasingly complex and sustainability-conscious business environment, this strategic alignment offers a pathway to enduring competitiveness and financial health.

6.1. Theoretical Implications

This investigation seeks to expand the theoretical framework surrounding sustainable marketing by elucidating its substantive effects on various facets of hotel performance specifically, cost-effectiveness, revenue advancement, and fiscal steadiness. Historically, sustainable marketing has chiefly been linked

with improvements in brand image and customer dedication. Nevertheless, this inquiry indicates that sustainable marketing methodologies yield concrete financial advantages, such as expenditures reduction stemming from resource optimization and emergent revenue paths from environmentally conscious patrons. The results prompt an augmented understanding of sustainable marketing that transcends mere reputational gains, spotlighting its tactical function in enhancing financial outcomes.

The investigation underscores the imperative function of digital transformation as a moderating element that exacerbates the influence of sustainable marketing approaches on hotel performance. This theoretical amalgamation posits that digital instruments, like data analytics, Internet of Things (IoT), and artificial intelligence (AI), should not be perceived merely as operational facilitators; instead, they are critical for actualizing the complete capacity of sustainability pursuits. By framing digital transformation as a moderating influence, the study contributes to the burgeoning dialogue concerning the nexus between technology and sustainability, advocating that digital assimilation is indispensable for amplifying the effectiveness and efficiency of sustainable endeavors.

In terms of the Resource-Based View (RBV) and Dynamic Capabilities Theory, this research offers important insights on how hotels might exploit sustainable marketing strategies as distinctive assets that foster competitive superiority. It asserts that sustainable methodologies, when bolstered by digital proficiencies, evolve into valuable, uncommon, and difficult-to-replicate resources that elevate organizational performance. The moderating influence of digital transformation corresponds with the principle of dynamic capabilities, suggesting that hotels' aptitude to amalgamate and reconfigure their digital and sustainable assets in reaction to market fluctuations is critical for enduring competitive edge and fiscal steadiness.

The findings bolster Stakeholder Theory by illustrating how sustainable marketing frameworks, in conjunction with digital transformation, can fulfill the anticipations of diverse stakeholders, which encompass customers, employees, investors, and regulatory bodies. The results imply that through the adoption of sustainable methods and the utilization of digital instruments for open communication and involvement, hotels can enrich their connections with stakeholders, culminating in heightened loyalty, investment prospects, and adherence to regulatory mandates. This theoretical implication reinforces the notion that enterprises adept at addressing stakeholder issues surrounding sustainability and digital progress have a greater likelihood of attaining prolonged success.

Moreover, the research furnishes empirical validation regarding the moderating role digital transformation plays in the relationship between sustainable marketing strategies and hotel performance. Such findings augment the theoretical discourse regarding digitalization within the hospitality sector by accentuating its significance not merely as a technological progression but also as a strategic facilitator of sustainability. The study's empirical substantiation affirms the hypothesis that digital incorporation is crucial for enhancing the affirmative impacts of sustainability

on cost-effectiveness, revenue proliferation, and fiscal stability, thus laying a groundwork for subsequent investigations at the intersection of digital and sustainable frameworks.

Ultimately, the results bear substantial ramifications for strategic management theories, suggesting that sustainability and digital transformation are not ancillary but rather fundamental to a hotel's strategic orientation. The research implies that the integration of sustainable practices alongside digital tools into the overarching business strategies is vital for realizing a comprehensive approach to performance management. This viewpoint fosters a reconsideration of traditional perspectives. Strategic management models necessitate the inclusion of sustainability alongside digital transformation as critical elements within the domains of strategic planning and execution specifically tailored for the hospitality industry.

This investigation contributes additional insights to the existing frameworks pertaining to financial performance and stability within the hospitality sector by elucidating how sustainable marketing strategies, which are influenced by the forces of digital transformation, can positively affect financial outcomes. It posits that the assurance of financial stability does not hinge exclusively on archaic strategies aimed at curbing costs or augmenting revenues but rather on a hotel's dedication to sustainable practices coupled with its proficiency in the assimilation of digital technologies. Such a theoretical progression yields a broader comprehension of the variables influencing financial resilience within the hospitality sector, particularly when confronting economic fluctuations and the evolving preferences of consumers.

6.2. Managerial Implications

The outcomes resultant from this analytical endeavor present numerous implications concerning the capacity of hospitality establishments to align their sustainability objectives with overarching ambitions.

To commence, it is imperative for hotel administrators to acknowledge the pivotal role that sustainability plays in enhancing cost efficacy. The integration of sustainable methodologies—encompassing energy-efficient apparatuses, diminution of waste, and advancements in water conservation technologies, has the propensity to markedly curtail operational expenditures. Nevertheless, the consequences engendered by these methodologies may be significantly intensified when amalgamated with digital instruments. The phenomenon of digital transformation, facilitated by advancements such as Internet of Things (IoT), Artificial Intelligence (AI), and data analytics, empowers hotels to surveil and optimize resource utilization instantaneously, thereby further amplifying cost mitigation strategies. Consequently, management should allocate resources to digital solutions that are synergistic with sustainable practices, thereby promoting a more adaptable and responsive resource management approach.

Moreover, the implementation of sustainable marketing paradigms has the potential to catalyze revenue augmentation by appealing to consumers and corporate entities with environmental consciousness. Administrators are urged to exploit tools emanating

from digital transformation, such as data analysis, Customer Relationship Management (CRM) systems, and platforms for digital marketing, to cultivate an enhanced understanding of consumer predilections, thereby tailoring marketing initiatives in a corresponding manner. The utilization of these tools enables hospitality establishments to devise customized, targeted promotional campaigns that underscore their sustainable methodologies, thus elevating occupancy figures while facilitating premium pricing strategies. Furthermore, digital platforms afford a cost-efficient mechanism to extend outreach to a wider demographic while engaging with patrons directly, thereby nurturing loyalty and inciting recurrent reservations.

In addition, sustainable methodologies serve to bolster financial steadiness by mitigating reliance on erratic resources and facilitating compliance with legislative requisites. Management should prioritize the incorporation of sustainability into expansive strategic deliberations to alleviate risks correlated with environmental regulations and resource paucity. Digital transformation emerges as an indispensable element in this domain, providing predictive analytic capabilities and scenario modeling apparatuses that contribute to the forecasting of prospective market conditions and regulatory frameworks. Such insights empower management to arrive at judicious decisions, thereby safeguarding the resilience of the establishment amid economic vicissitudes and environmental tribulations.

Furthermore, the impetus of digital transformation engenders a milieu of perpetual innovation and operational efficacy, a requisite for optimizing the advantages concomitant with sustainable marketing paradigms. It is advisable for hotel management to endorse the deployment of digital methodologies to refine operations, which may encompass the optimization of staff rosters, enhancements in supply chain logistics, and the elevation of guest experiences. The fusion of sustainability with digital innovation empowers hospitality establishments to formulate novel service provisions, examples include mobile applications for guest assistance or intelligent room regulation systems, which can distinctly position them within the market and attract a demographic of tech-savvy, eco-minded travelers.

Ultimately, a robust reputation for sustainability, augmented by digital integration, possesses substantial potential to elevate a hotel's brand equity and competitive stance. Management ought to prioritize the attainment of sustainable certifications while utilizing digital mediums to disseminate information regarding their sustainable accomplishments. Such accolades and certifications, in conjunction with favorable online evaluations and a vibrant social media presence, can appeal to a heterogeneous consumer base, inclusive of corporate clientele and eco-aware travelers. This strategic posture not only enhances the brand's image but also fosters sustainable revenue growth and facilitates market differentiation.

Lastly, in light of the burgeoning significance attributed to Environmental, Social, and Governance (ESG) parameters in investment determinations, hospitality establishments exhibiting robust sustainable practices are increasingly appealing to investors. Administration must strategically position their establishments as

frontrunners in sustainability and digital innovation, captivating socially responsible investors and stakeholders. Demonstrating an unwavering commitment to enduring sustainability while leveraging digital apparatuses to enhance transparency and accountability is paramount. Through the implementation of performance reporting mechanisms, hotels are positioned to procure additional capital aimed at fostering growth and innovation, which concomitantly bolsters their financial stability.

6.3. Limitations and Recommendation for Future Research

The scope of the research bears limitations. It was executed within the territorial confines of Ghana, thereby suggesting that the resultant findings may lack universal applicability. Future inquiries could broaden the scope to encompass a more extensive array of geographic locales and diverse hotel classifications. This would facilitate a more comprehensive understanding of how sustainable marketing strategies influence cost efficiency, revenue augmentation, and financial solidity across varied contexts.

The interplay of digital transformation as a moderating factor in the association between sustainable marketing strategies and financial results can present complexities. The disparate levels of digital sophistication among hotels may yield inconsistent effects, posing challenges to the generalization of outcomes. Future investigations might delve into how emergent technologies, such as artificial intelligence and blockchain, are reshaping the nexus between sustainable marketing strategies and fiscal performance. Grasping the integration of these technologies within the framework of digital transformation could unveil novel insights.

The ramifications of sustainable marketing strategies concerning cost efficiency, revenue progression, and financial robustness are subject to temporal evolution. An inquiry conducted at a singular moment may not adequately encapsulate prolonged trends or the repercussions of emergent technologies alongside shifting consumer inclinations. The execution of longitudinal studies could yield valuable insights regarding the enduring implications of sustainable marketing strategies and digital transformation on fiscal outcomes. This methodological approach would enhance the comprehension of the sustained viability of these strategies over time.

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