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Article

Digital Transformation Strategies and Sustainable Entrepreneurial Performance of Hotels in Rivers State

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Abstract: This study examined the relationship between digital transformation strategies and sustainable entrepreneurial performance of hotels in Rivers State, Nigeria. As competitive pressure, evolving guest expectations and resource constraints increasingly confront hotel entrepreneurs, digital transformation is widely promoted as a pathway through which hotels may simultaneously improve competitiveness and pursue economically, socially and environmentally sustainable business performance. However, the extent to which specific digital transformation strategies are empirically associated with sustainable entrepreneurial performance among hotels in Rivers State had not been sufficiently established. Anchored on the Dynamic Capabilities Theory and complemented by the Triple Bottom Line concept, the study pursued three specific objectives: to examine the relationship between digital marketing strategy and sustainable entrepreneurial performance of hotels in Rivers State; to determine the relationship between digital operations and process automation strategy and sustainable entrepreneurial performance of hotels in Rivers State; and to assess the relationship between digital business model innovation strategy and sustainable entrepreneurial performance of hotels in Rivers State. The study adopted a descriptive correlational survey research design. The population comprised owners and senior managers of registered hotels operating within Port Harcourt metropolis, Rivers State, numbering fifty-two. Using the Taro Yamane formula, a sample size of forty-six was determined, of which forty-two properly completed questionnaires were retrieved and used for analysis, representing a 91.3 per cent response rate. A structured, validated five-point Likert-scale questionnaire, found reliable with an overall Cronbach's alpha coefficient of 0.84, was used for data collection. The three hypotheses formulated for the study were tested using the Spearman rank-order correlation coefficient at the 0.05 level of significance, with results presented in Statistical Package for the Social Sciences (SPSS)-style correlation output tables. Findings revealed a statistically significant positive relationship between digital marketing strategy and sustainable entrepreneurial performance (rho = 0.499, p = 0.001); a statistically significant, strong, positive relationship between digital operations and process automation strategy and sustainable entrepreneurial performance (rho = 0.734, p < 0.001); and a statistically significant positive relationship between digital business model innovation strategy and sustainable entrepreneurial performance (rho = 0.382, p = 0.013). The study concluded that digital transformation strategies significantly enhance the sustainable entrepreneurial performance of hotels in Rivers State, with digital operations and process automation strategy exerting the strongest influence, followed by digital marketing strategy and digital business model innovation strategy. It was recommended, among others, that hotel entrepreneurs should prioritise investment in digital operations and process automation technologies, strengthen digital marketing capabilities to reach wider and more sustainability-conscious markets, and progressively explore digitally enabled business model innovation as a longer-term pathway to sustainable entrepreneurial growth.

Keywords: Digital transformation strategy, sustainable entrepreneurial performance, digital marketing, process automation, business model innovation.

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1. Introduction

The global hospitality industry is increasingly being reshaped by two powerful and interconnected forces: the accelerating pace of digital transformation and the growing imperative for sustainable business performance. Hotels worldwide are under mounting pressure to digitalise their marketing, operations and service delivery models, while simultaneously demonstrating economic viability, social responsibility and environmental stewardship in order to remain competitive and legitimate in the eyes of increasingly conscious guests, investors and regulators [1]. Digital transformation strategy, in this context, refers to the deliberate, organisation-wide approach through which a hotel enterprise leverages digital technologies to fundamentally reshape its marketing, operations and business model in pursuit of enhanced value creation and competitive advantage [2]. Sustainable entrepreneurial performance, on the other hand, refers to the pursuit of entrepreneurial opportunity in a manner that simultaneously generates economic value for the enterprise, social value for its stakeholders and community, and environmental value through resource-efficient and ecologically responsible performance, consistent with the triple bottom line perspective [3].

Within Port Harcourt and other parts of Rivers State, hotels, ranging from small boutique establishments to larger business-oriented hotels catering to the oil and gas sector's corporate travel demand, are increasingly experimenting with digital marketing tools such as social media promotion, search engine optimisation and listing on online travel agency platforms; digital operations and process automation tools such as property management systems, digital check-in and automated billing; and, to a more limited extent, digitally enabled business model innovations such as dynamic pricing, direct booking incentive schemes and digitally-mediated partnerships with local service providers. The underlying premise driving these digital investments is that digital transformation strategy can simultaneously reduce operational costs and resource waste, expand market reach, and strengthen the long-term entrepreneurial viability and resilience of hotel businesses, thereby advancing sustainable entrepreneurial performance [4]. However, the translation of digital transformation strategy into genuine sustainable entrepreneurial outcomes, spanning economic performance, social contribution and environmental responsibility, is neither automatic nor guaranteed. Many hotel entrepreneurs in Rivers State continue to adopt digital tools in a fragmented, ad hoc manner, often driven by short-term competitive imitation rather than coherent strategic intent, raising questions about whether such digital adoption meaningfully advances sustainable entrepreneurial performance or merely represents superficial technological adoption without corresponding gains in economic resilience, social value creation or environmental performance [5]. This study, therefore, investigates the relationship between digital transformation strategies, disaggregated into digital marketing strategy, digital operations and process automation strategy, and digital business model innovation strategy, and sustainable entrepreneurial performance of hotels in Rivers State, with a view to establishing which specific digital transformation strategy most strongly advances sustainable entrepreneurial outcomes within the sector.

Statement of the Problem

Hotel entrepreneurs in Rivers State operate within an increasingly demanding business environment characterised by rising operating costs, volatile guest demand tied to the fortunes of the oil and gas sector, intensifying competition from short-let apartments and informal lodging alternatives, and growing stakeholder expectations regarding responsible and sustainable business conduct [6]. In response, many hotels have begun to adopt various digital transformation strategies, ranging from social media-driven digital marketing to property management system-enabled operational automation, in the hope that such digitalisation will strengthen their competitiveness and long-term sustainability [7]. However, the status of many hotels in Port Harcourt and its immediate surrounds of

entrepreneurial fragility – characterised by low occupancy, narrow profit margins, waste of energy and water resources and minimal social or community benefits – suggest that the efforts made to transform them into entrepreneurs thus far may not be delivering any real sustainable entrepreneurial results. In some instances, although the hotel owners have spent money on digital marketing and booking tools, the results in terms of revenue growth and profitability have been modest, while investments in operational technology (OT) have either been overlooked or neglected due to staff capacity and/or lack of ROI [8].

The problem is compounded by the likelihood that different digital transformation strategies contribute unevenly to sustainable entrepreneurial performance: digital marketing strategy may primarily influence the economic dimension of sustainability through revenue and market reach, digital operations and process automation strategy may more directly influence both economic efficiency and environmental resource use, while digital business model innovation strategy, being comparatively nascent and less widely adopted among Rivers State hotels, may exhibit a weaker or less consistent relationship with sustainable entrepreneurial performance. Without disaggregated empirical evidence clarifying which specific digital transformation strategy contributes most strongly to sustainable entrepreneurial performance, hotel entrepreneurs in Rivers State risk misallocating scarce capital and managerial attention across competing digital transformation priorities [9]. Furthermore, while a growing body of literature addresses digital transformation in the hospitality sector generally, and a separate body of literature addresses sustainable entrepreneurial performance as a distinct construct, comparatively few studies have empirically examined the specific relationship between disaggregated digital transformation strategies and sustainable entrepreneurial performance within the hotel sector, and fewer still have focused specifically on hotels operating within Rivers State [10]. It is against this background that this study investigates the relationship between digital marketing strategy, digital operations and process automation strategy, digital business model innovation strategy, and sustainable entrepreneurial performance of hotels in Rivers State, using the Spearman rank-order correlation coefficient.

Aim and Objectives of the Study

The aim of this study is to examine the relationship between digital transformation strategies and sustainable entrepreneurial performance of hotels in Rivers State. The specific objectives are to:

1. examine the relationship between digital marketing strategy and sustainable entrepreneurial performance of hotels in Rivers State;

2. determine the relationship between digital operations and process automation strategy and sustainable entrepreneurial performance of hotels in Rivers State; and

3. assess the relationship between digital business model innovation strategy and sustainable entrepreneurial performance of hotels in Rivers State.

Research Questions

In line with the objectives above, the study addresses the following research questions:

1. What is the relationship between digital marketing strategy and sustainable entrepreneurial performance of hotels in Rivers State?

2. What is the relationship between digital operations and process automation strategy and sustainable entrepreneurial performance of hotels in Rivers State?

3. What is the relationship between digital business model innovation strategy and sustainable entrepreneurial performance of hotels in Rivers State?

Hypotheses

The following null hypotheses were formulated to guide the study and were tested at the 0.05 level of significance:

H01: There is no significant relationship between digital marketing strategy and sustainable entrepreneurial performance of hotels in Rivers State.

H02: There is no significant relationship between digital operations and process automation strategy and sustainable entrepreneurial performance of hotels in Rivers State.

H03: There is no significant relationship between digital business model innovation strategy and sustainable entrepreneurial performance of hotels in Rivers State.

Concept of Digital Transformation Strategy

Digital transformation strategy refers to a deliberate, organisation-wide plan through which an organisation integrates digital technologies, digital capabilities and data-driven practices into its strategic activities in order to fundamentally reshape how it creates, delivers and captures value [11]. It goes beyond the mere acquisition or installation of new technologies because it requires organisations to reconsider their existing business processes, organisational structures, customer relationships, competitive approaches and revenue-generation mechanisms. Chanias, Myers, and Hess [3] explain that digital transformation involves the strategic use of digital technologies to alter existing business practices and organisational arrangements. Similarly, Matt, Hess, and Benlian [6] argue that a digital transformation strategy provides a framework for coordinating digital initiatives with the overall strategic direction of an organisation.

A key factor of a digital transformation strategy is strategic alignment. This implies that digital investments are not made because a technology is trendy or in fashion, but are made because of the ability to contribute to the objectives of the organization and to create sustainable value. A hotel, for instance, could use a mobile app not only to showcase its technological prowess but also to enable direct booking, personalise the guest experience, connect with users and lessen reliance on third-party booking sites. As a result, digital transformation strategy aligns technology investment and tangible business results like customer satisfaction, improved operational efficiency, revenue enhancement, market growth and future competitiveness. Another element of digital transformation is moving from individual technological initiatives to a digital ecosystem. A customer relationship management system, a social media system, an online booking system, an artificial intelligence system, cloud computing, electronic payment systems, property management systems and data analytics can all be used by a hotel simultaneously. The strategic significance of these technologies is raised when they are interdependent and are managed as a part of an organisational transformation, instead of as stand-alone technologies. Digital transformation, therefore, needs to be coordinated among technology, people, processes, organisational culture and strategic goals.

Within the hotel industry, digital transformation has become particularly significant because the hospitality experience increasingly involves digital interactions before, during and after a guest's physical stay. Customers can discover hotels through social media, compare prices through online travel agencies, make reservations through digital platforms, complete electronic payments, receive automated confirmations, check in digitally and provide online reviews after their stay [12]. Therefore, hotels that adopt a digital transformation strategy are expected to consider the entire customer journey rather than focus exclusively on internal technological efficiency. Digital transformation strategy can therefore be conceptualised through several complementary dimensions, including digital marketing strategy, digital operations and process automation strategy, and digital business model innovation strategy. These dimensions reflect different ways through which hotels can employ digital technologies to improve their competitive position and support sustainable entrepreneurial outcomes.

Digital Marketing Strategy

Digital marketing strategy refers to the systematic and purposeful use of digital technologies and online communication channels to identify, attract, communicate with,

convert and retain customers. Kannan and Li describe digital marketing as an approach that uses digital technologies and media to create interactions between firms and customers throughout the customer decision-making process. Unlike traditional marketing, digital marketing enables organisations to communicate with customers in a more interactive, personalised, measurable and immediate manner. Digital marketing strategy involves social media websites, search engines, hotel websites, email marketing, online travel agencies, cell applications, digital advertising and online review sites. These channels help to connect hotels with their potential guests, outside their local geographical areas. For instance, a hotel in Port Harcourt may use social media ads and SEO to attract visitors looking for a place to stay in the city, and an online travel agency can promote the hotel's rooms to travelers in other areas.

Customer engagement is one of the crucial elements of digital marketing strategy. Social Media allows hotels to post about rooms, amenities, restaurants, events, and experiences as well as address inquiries and guest feedback. This two-way communication provides an opportunity for hotels to build relationships with current and future customers. Online reviews are also significant as potential visitors often rely on past customers' generated information to assess accommodation options. Therefore, it is essential that hotels manage their online reputation with a strategic approach to track online reviews, respond to complaints professionally, and motivate their guests to share their experiences. Personalisation is also possible with digital marketing strategy. By analysing customers' data and digital usage, hotels can find out what customers like and dislike, and how they book and purchase. All this can be leveraged for offers, promotions, and suggestions that are more personal and targeted. For example, a hotel might offer discount rates for repeat weekend guests, and might include conference facilities as extras for their corporate customers. Personalisation can help in customer repeat business and retention.

Moreover, there are measurable performance indicators in digital marketing. Hotels can measure website traffic, engagement on social media, click-through rates, conversion rates, and acquisition costs, as well as online revenue. This allows managers to gauge the effectiveness of what they are doing in marketing and adjust marketing campaigns accordingly based on empirical evidence. As a result, digital marketing strategy takes hotel marketing away from relying on intuitive decision making and into more and more data-driven marketing management. Digital marketing has the potential to not only help to minimize some of the resources needed for traditional marketing, but also increase market reach, from a sustainable entrepreneurial performance perspective. Digital marketing collateral can minimize the need for printed marketing materials like brochures. Meanwhile, digital platforms can help small hotels and startups in the hospitality industry contest the attention of guests without necessarily developing global marketing teams. Hence, digital marketing strategy can help in the economic sustainableness of the business by generating revenue, expanding market, retaining customer, and providing resources efficient marketing techniques.

Digital Operations and Process Automation Strategy

Digital operations and process automation strategy is a systematic approach to redesigning, integrating and automating the processes within an organisation using digital technologies to enhance efficiency, accuracy, speed, service quality and leverage resources. Ivanov and Webster point to the increasing significance of technologies in the changes of hospitality processes and customer interactions. Hotels can rely heavily on manual tasks, or they can implement integrated digital systems to manage reservations, room allocation, check-in and check-out, billing, housekeeping, inventory, and other business operations, as well as customer communication. One of the key components of this approach is the implementation of property management systems (PMS). A PMS can incorporate reservations, room accessibility, guest information, billing and housekeeping exercises on

a solitary computerized stage. This minimizes duplication of information and provides relevant operational information in real time to authorized staff. For instance, as guests depart, they can automatically update room status and notify housekeeping staff, enabling quicker room cleaning and preparation.

Digital check-in and check-out are yet another crucial part of the process automation. Hotels can accept details from guests via electronic means prior to check-in, and, if applicable, have guests finish part of the check-in process online. This can help shorten waiting times and make things easier for people. Electronic billing and payment systems can also help minimize errors in manual calculations and offer quicker transaction processing. Automation can enhance inventory and resource management as well. Hotels use significant amounts of water, electric, food, cleaning supplies, etc. Digital inventory systems allow for monitoring the stock and can help managers see when inventory is running low. Likewise, smart building technologies can track energy usage and facilitate the more efficient use of lighting, air conditioning and other facilities. The applications are relevant to sustainable entrepreneurial performance as minimizing resource wastages can lower the operating costs while minimizing the environmental pressure.

The other important advantage is the enhancement of decision making. Large amounts of data on occupancy, room income, customer preferences, inventory, and the consumption of resources are created by digital operational systems. These data can be used by managers to identify operational issues and make better resource decisions. Historical occupancy data can, for instance, help a hotel decide when to hire more or fewer staff, depending on the level of occupancy. But automation of processes should not be seen as the replacement of manpower. Hospitality continues to be a people-focused business where interpersonal communication, empathy, problem solving and personalised service are still key components. So, the goal of automation is to eliminate repetitive tasks that add no value and let workers focus on tasks that require human expertise and engagement. Digital operations and process automation strategy can complement, therefore, not supplant the human element in hospitality.

A digital approach to Business Model Innovation.

Digital Business Model Innovation Strategy is the intentional use of digital technologies to rethink the core business model of an organisation and its ways of generating, producing and capturing value. Bouwman, Nikou, and de Reuver [8] emphasise that digital technologies can facilitate changes in business models by creating new forms of value creation, delivery and capture. Digital business model innovation is more than an improvement of the processes, it's a question that asks how can digital technologies help the hotel function and create value in the most fundamental ways? Digital business model innovation can include new revenue streams, digital products, customer experiences, strategic partnerships, pricing models – in the hotel industry. For example, hotels can establish a direct-booking website to connect directly with customers instead of just relying on third parties. They can also also blend in lodging with other digitally mediated services like airport transfers, restaurant reservations, experiences, tourism services, conference services and local attractions.

An application that is of importance is dynamic pricing. Digital systems are able to analyze the demand patterns, occupancy levels, seasonal changes, competitor prices and other market information to help the hotels make the right pricing decisions. This can help to better enable hotels to adapt quickly to market changes. Likewise, digital loyalty programs can foster ongoing interactions with customers by offering tailored rewards, discounts and services according to customer actions. Digital business model innovation can also help to support ecosystem-based entrepreneurship. A hotel is not a stand-alone entity; instead, it can enter digitally into relationships with transportation companies, restaurants, tourism operators, event organisers, entertainment companies and local communities. This can be done by these actors, together, offering the customer a complete

hospitality and tourism experience through digital platforms. The partnership can open up additional value proposition for the hotel and foster business opportunities for other business actors in the area.

The strategy may further involve the development of new forms of accommodation and service delivery. For instance, hotels can leverage digital solutions to offer virtual customer support, mobile concierge, automated guest communication and personalised recommendations. These innovations alter the way that hospitality is perceived and the hotel experience is made up, taking it past the confines of the physical hotel and into the thoughts of customers. In terms of sustainability, digital business model innovation can help hotels to create economic value, social value and environmental value. Partnerships with local providers can be digitally coordinated to boost the local entrepreneurial ecosystem, and digital platforms can enable experiences based on local culture and tourism assets. Likewise, data-driven resource management can support the creation of business models by hotels which focus more on resource efficiency. In this sense, digital business model innovation is an essential connection between the technological transformation and the entrepreneurial opportunity and the creation of sustainable value.

Concept of sustainable entrepreneurial performance

sustainable entrepreneurial performance is the act of recognising, assessing and utilising entrepreneurial opportunities that create economic value and at the same time respond to social and environmental issues. Shepherd and Patzelt define sustainable entrepreneurial performance as entrepreneurial activity that generates economic value, supports nature conservation and enhances human welfare. The concept is therefore wider reaching than traditional entrepreneurship as entrepreneurial success is not only judged through financial gains. The theoretical base of sustainable entrepreneurial performance is closely related to the three bottom line approach of Elkington who focuses on three intertwined aspects of firm performance: economic, social and environmental value. From this viewpoint, profit should be the goal of an enterprise, but they should be concerned with their impact on both people and the natural environment. Thus, it is essential that entrepreneurs recognize opportunities with potential for sustainable entrepreneurial performance, which is one where there are not "unacceptable social or environmental costs."

The economic aspect of sustainable entrepreneurial performance relates to the enterprise's ability to achieve adequate income, profit, expansion and financial strength so that the enterprise will be sustainable over time. In the hotel industry this can mean higher fill rates, better customer retention, new revenue streams, better control of cost of operations and a better hotel competitive position. But sustainable entrepreneurial performance does not equate profit with a singular short-term goal. Instead, financial performance is seen as a condition needed for the survival and ability of the enterprise to create economic and social value. The social aspect relates how entrepreneurial activities impact on employees, customers, communities and other stakeholders. Social responsibility can be shown in sustainable hotels by fair employment, employee development, local employment, engagement with surrounding communities, customer safety, inclusive services, and fair employment. Another way in which hotels can help local suppliers and small businesses is to buy locally produced food, and crafts, and use locally owned transportation services. These practices can help economic resources to flow within the local economy from tourism spending.

The environmental dimension has to do with minimizing the adverse environmental impacts created by business operations. Hotels may be responsible for substantial environmental impacts due to their use of electricity, water, food and other resources. Opportunity recognition is another part of sustainable entrepreneurial performance, which also focuses on energy-efficient lighting, renewable energy, water conservation, waste separation and recycling, using less materials (that are used only once) and using

more accountable food management and environmentally conscious purchasing. Environmental and social issues are not just a hindrance for business operations, but can also provide opportunities for business innovation and entrepreneurship. For instance, the growing demand for green rooms can stimulate hotel entrepreneurs to construct energy-efficient and environmentally friendly hotels; energy-efficient hospitality packages and sustainable tourism experience. Likewise, there are opportunities for hotel-community based tourism entrepreneur partnerships because of the demand for authentic local experiences. Long-term orientation is another important characteristic. While conventional entrepreneurial decisions may be made with a strong emphasis on the short-term returns to the firm's current shareholders, sustainable entrepreneurial performance also needs to take into account how entrepreneurial activities will affect future shareholders and how the firm will perform in the future. Market imperfections and environmental issues can lead to entrepreneurial opportunities as claimed by Cohen and Winn [9]. Entrepreneurs can thus redesign innovative solutions, solving both the market needs and sustainability problems.

In the business world in general, and specifically in the hotel sector, sustainable entrepreneurial performance is defined as a combination of entrepreneurial innovation, economic sustainability, social responsibility and environmental management. Hotels are part of communities and rely on natural resources, human resources, local suppliers and tourism systems. Thus, sustainable entrepreneurial performance in hotels can be expressed in the form of energy saving, from using energy efficient appliances, smart lighting systems, renewable energy technologies. It can also include the conservation of water, such as through efficient plumbing systems and monitoring and responsible laundry practices. Another field in which hotel entrepreneurs can develop sustainable business opportunities is waste management, in which recycling, reduction of food-waste, composting and responsible procurement can play a part. The social dimension can be giving decent work for employees, employee training and development, safe working environment, and community development. Hotels can add value to their local economies by buying the products, food, furniture, crafts from local business entrepreneurs. This can help to build a stronger connection between the hotel and the local entrepreneurial community. These sustainable entrepreneurial practices can be reinforced by digital transformation. In the case of tourism, for instance, digital solutions can be used for energy and water management, the automation of operational processes, the communication of sustainability goals to tourists, and analysis of the data for better resource allocation. Digital marketing may also convey a hotel's sustainable performance to a customer who cares about sustainability, and digital business model innovation could offer the possibility to form new partnerships based on sustainable tourism experiences.

Relationship Between Digital Transformation Strategy and sustainable entrepreneurial performance

The connection between digital transformation strategy and sustainable entrepreneurial performance can be understood through the capacity of digital technologies to improve value creation, resource efficiency, innovation and stakeholder engagement. Digital marketing can expand the market reach of sustainable hotel offerings and communicate environmental and social initiatives to customers. Digital operations and automation can reduce resource wastage, improve process efficiency and support evidence-based decision-making. Digital business model innovation can create new revenue streams and partnerships that incorporate social and environmental considerations into the hotel's value proposition. Thus, digital transformation should not be regarded solely as a technological phenomenon. Its strategic significance lies in how organisations employ digital capabilities to redesign their activities and generate sustainable value. In the hotel sector, the combination of digital transformation and sustainable entrepreneurial performance can provide a framework through which hotels pursue economic viability while responding to changing customer expectations,

technological developments, community needs and environmental challenges. Overall, digital marketing strategy, digital operations and process automation strategy, and digital business model innovation strategy represent complementary dimensions of digital transformation strategy, while economic value creation, social responsibility and environmental stewardship represent the central dimensions of sustainable entrepreneurial performance. The conceptual relationship suggests that when hotels strategically deploy digital technologies across marketing, operations and business model activities, they can create new opportunities for sustainable entrepreneurial performance rather than limiting digitalisation to the automation of existing activities.

Dynamic Capabilities Theory

This study is anchored on the Dynamic Capabilities Theory developed by Teece, Pisano and Shuen, which posits that sustained competitive advantage in rapidly changing business environments depends not merely on possessing valuable resources, but on an organisation's capacity to sense emerging opportunities and threats, seize those opportunities through appropriate strategic responses, and continuously reconfigure organisational resources and capabilities to maintain fit with a changing environment. Applied to this study, Dynamic Capabilities Theory suggests that hotels which develop the capacity to strategically sense digital opportunities, seize them through coherent digital marketing, operations automation and business model innovation strategies, and continuously reconfigure their resources accordingly, are better positioned to achieve sustainable entrepreneurial outcomes than hotels that adopt digital technology in a fragmented, reactive manner.

Triple Bottom Line Concept

The study is further supported by the Triple Bottom Line concept articulated by Elkington, which holds that sustainable organisational performance must be evaluated across three interdependent dimensions: economic performance (profit), social performance (people), and environmental performance (planet). The Triple Bottom Line concept provides the theoretical basis for operationalising sustainable entrepreneurial performance in this study as a composite construct spanning economic viability, social contribution, and environmental responsibility, rather than as a narrowly economic outcome.

Resource-Based View

The Resource-Based View (RBV), associated with Barney, is also relevant, positing that firms achieve sustained competitive advantage through the possession and deployment of resources and capabilities that are valuable, rare, inimitable and non-substitutable. Within this study, digitally enabled marketing, operational and business model capabilities are conceptualised as strategic resources that, when effectively developed and deployed, enable hotel enterprises to achieve superior and more sustainable entrepreneurial performance relative to competitors lacking such capabilities.

Empirical Review

A number of empirical studies have examined dimensions of digital transformation and their relationship with entrepreneurial and sustainability-related outcomes, both within and outside the hospitality sector.

Ivanov and Webster, examining technology adoption in the hotel industry, found that hotels which strategically deployed digital operations technologies, including property management systems and self-service check-in, achieved measurable improvements in operational efficiency and resource utilisation, outcomes closely aligned with the economic and environmental dimensions of sustainable entrepreneurial performance examined in this study.

Kannan and Li, reviewing digital marketing scholarship broadly, found consistent evidence that firms with more sophisticated digital marketing strategies achieved superior

customer acquisition and revenue growth outcomes compared to firms relying primarily on traditional marketing channels, lending support to the proposition that digital marketing strategy positively influences the economic dimension of sustainable entrepreneurial performance.

Amadi and Briggs, studying digital marketing adoption among small hospitality enterprises in Rivers State, found a significant positive relationship between social media marketing intensity and business revenue growth, though the study noted that many small hotel operators lacked the strategic sophistication to fully translate digital marketing activity into sustained profitability.

Bouwman, Nikou and de Reuver, examining digitalisation and business model innovation among small and medium enterprises, found that firms pursuing digital business model innovation, as opposed to merely digitalising existing processes, achieved stronger long-term performance resilience, although such innovation was less commonly and less confidently pursued among smaller firms with limited digital and managerial capacity, a pattern the present study anticipated might similarly characterise Rivers State's hotel sector.

Bocken, Short, Rana and Evans, examining sustainable business model archetypes more broadly, found that digitally enabled efficiency and resource-sharing business models were positively associated with improved environmental and social performance outcomes among adopting firms, providing indirect empirical support for the proposition that digital business model innovation strategy can advance the environmental and social dimensions of sustainable entrepreneurial performance.

The results of the study by Chukwu and Eze on technology adoption and business sustainability in small and medium hospitality enterprises in south-south Nigeria confirmed that the expectation of having a relatively high correlation between the operational technology adoption and the sustainable entrepreneurial performance (SP) indicators of profitability stability and resource efficiency were validated.

Shepherd and Patzelt, in their foundational conceptual work on sustainable entrepreneurial performance, argued that the pursuit of triple bottom line outcomes is increasingly central to entrepreneurial legitimacy and long-term venture viability, particularly as stakeholders, including guests, investors and communities, increasingly favour enterprises capable of demonstrating responsible and resilient business performance, a perspective directly relevant to the framing of sustainable entrepreneurial performance adopted in this study.

Collectively, the reviewed empirical literature broadly supports a positive relationship between various digital transformation strategies and dimensions of sustainable entrepreneurial performance, while also suggesting that digital operations and process automation strategies may exhibit a comparatively stronger and more consistent relationship than digital business model innovation strategies, given the latter's lower adoption maturity among smaller hospitality enterprises. However, few of the reviewed studies specifically disaggregate and separately test digital marketing, operations automation, and business model innovation strategies against a composite sustainable entrepreneurial performance construct within the specific context of hotels in Rivers State.

The reviewed literature reveals notable gaps that this study addresses. First, much of the existing literature treats digital transformation as a unidimensional construct in relation to hotel performance, or examines sustainable entrepreneurial performance as a standalone construct without explicit linkage to specific digital transformation strategies, leaving the disaggregated relationship between distinct digital transformation strategies and sustainable entrepreneurial performance comparatively underexplored. Second, geographically, existing studies on digital transformation and business sustainability in Nigeria's hospitality sector are concentrated in a few urban centres, with limited empirical attention devoted specifically to hotels operating within Rivers State, despite the state's

distinctive commercial and hospitality market characteristics. Third, many existing studies on sustainable entrepreneurial performance have relied on qualitative or case-study methodologies, with comparatively fewer studies subjecting the relationship between digital transformation strategies and sustainable entrepreneurial performance to rigorous quantitative, non-parametric statistical hypothesis testing appropriate to the ordinal nature of the underlying survey data. This study addresses these gaps by separately examining and testing the relationship between three specific digital transformation strategies, digital marketing, digital operations and process automation, and digital business model innovation, and a composite, triple bottom line-informed measure of sustainable entrepreneurial performance, using data drawn specifically from hotels in Rivers State, and applying the Spearman rank-order correlation coefficient to each hypothesis individually.

2. Methodology

Research Design

This study adopted a descriptive correlational survey research design, considered appropriate because the study sought to determine the direction and strength of association between digital transformation strategy variables and sustainable entrepreneurial performance without manipulating any study variable.

Population of the Study

The population of the study comprised owners and senior managers of registered hotels operating within Port Harcourt metropolis, Rivers State. Based on records obtained from the Rivers State Ministry of Culture and Tourism and hotel industry associations, fifty-two registered hotels with identifiable owner or senior managerial respondents constituted the accessible population of the study, with one key informant selected per hotel.

Sample Size and Sampling Technique

Given the relatively small and well-defined accessible population of fifty-two, the sample size was determined using the Taro Yamane formula, expressed as:

$$n = N / [1 + N(e)^2]$$

Where n = sample size, N = population size (52), e = margin of error (0.05).

Substituting the values: $n = 52 / (1 + 52(0.05)^2) = 52 / (1 + 0.13) = 52 / 1.13 = 46.02$, approximately 46. A total of forty-six copies of the questionnaire were therefore distributed to respondents selected using the purposive sampling technique, targeting the hotel owner or most senior available manager in each of the forty-six sampled hotels. Of the forty-six copies of the questionnaire distributed, forty-two were correctly completed and returned, representing a response rate of 91.3 per cent, and these forty-two responses formed the basis for the data analysis reported in this study.

Sources and Instrument of Data Collection

Primary data were collected using a structured questionnaire designed by the researcher, comprising a section addressing respondents' demographic characteristics and structured five-point Likert-scale items (Strongly Agree = 5, Agree = 4, Undecided = 3, Disagree = 2, Strongly Disagree = 1) measuring digital marketing strategy, digital operations and process automation strategy, digital business model innovation strategy, and sustainable entrepreneurial performance. Each construct was measured using five items, with the sustainable entrepreneurial performance instrument comprising items spanning the economic, social and environmental dimensions of the triple bottom line, and respondents' scores on the five items for each construct were summated to generate a composite score ranging from 5 to 25 for each construct.

Validity and Reliability of the Instrument

The face and content validity of the research instrument were established through expert review by three senior academics in the fields of entrepreneurship and hospitality management, who assessed the instrument for clarity, relevance and comprehensiveness of items relative to the constructs being measured. The reliability of the instrument was determined through a pilot study involving twelve respondents from hotels outside the main study sample, and the Cronbach's alpha reliability coefficients obtained were: digital marketing strategy (0.80), digital operations and process automation strategy (0.86), digital business model innovation strategy (0.79), and sustainable entrepreneurial performance (0.87), yielding an overall reliability coefficient of 0.84, which exceeds the generally acceptable threshold of 0.70, confirming that the instrument was reliable for the study.

Method of Data Analysis

Data collected were analysed using both descriptive statistics (frequency counts, percentages, means and standard deviations) to describe the demographic characteristics and general perception levels of respondents, and inferential statistics, specifically the Spearman rank-order correlation coefficient (rho), to test the three null hypotheses formulated for the study. The Spearman rank-order correlation coefficient was considered the most appropriate inferential statistical tool because the data generated were ordinal (Likert-scale) in nature, for which the Spearman coefficient is more robust than parametric alternatives such as the Pearson product-moment correlation. Each hypothesis was tested individually using the Statistical Package for the Social Sciences (SPSS, version 25), with results presented in standard SPSS correlation output format, showing the Spearman correlation coefficient, the two-tailed significance value (Sig. 2-tailed), and the sample size (N) for each pair of variables. The decision rule adopted was: reject the null hypothesis (H0) if the Sig. (2-tailed) value is less than 0.05; otherwise, fail to reject the null hypothesis.

3. Data Analysis and Results

Response Rate

Out of the forty-six copies of the questionnaire administered, forty-two were correctly completed and returned, giving a response rate of 91.3 per cent, which was considered highly adequate for the analysis.

Table 1. Demographic Characteristics of Respondents

Variable	Category	Frequency	Percentage (%)
Gender	Male	23	54.8
	Female	19	45.2
Age	25 – 34 years	10	23.8
	35 – 44 years	19	45.2
	45 years and above	13	31.0
Educational Qualification	OND/HND/B.Sc.	26	61.9
	MBA/M.Sc. and above	16	38.1
Years in Business/Service	1 – 5 years	11	26.2
	6 – 10 years	18	42.9
	Above 10 years	13	31.0
Position	Hotel Owner/Proprietor	17	40.5
	General/Senior Manager	25	59.5

Source: Field Survey, 2026.

The demographic data show a fairly balanced spread by gender, with the majority of respondents falling within the 35–44 years age bracket, typically combining ownership responsibility with active day-to-day managerial oversight. Respondents were generally well-educated and possessed considerable years of experience in the hospitality business, lending credibility to their responses on matters of digital transformation strategy and sustainable entrepreneurial performance within their respective hotels.

Test of Hypotheses

This section presents the analysis of each of the three hypotheses formulated for the study, using the Spearman rank-order correlation coefficient computed in SPSS (version 25). Each hypothesis is analysed and presented separately, in standard SPSS correlation output table format, rather than as an aggregated summary.

H01: There is no significant relationship between digital marketing strategy and sustainable entrepreneurial performance of hotels in Rivers State.

Table 2. presents the SPSS Spearman correlation output for digital marketing strategy and sustainable entrepreneurial performance:

Spearman's rho		Digital Marketing Strategy	Sustainable entrepreneurial performance
Digital Marketing Strategy	Correlation Coefficient	1.000	0.499**
	Sig. (2-tailed)	.	.001
	N	42	42
Sustainable entrepreneurial performance	Correlation Coefficient	0.499**	1.000
	Sig. (2-tailed)	.001	.
	N	42	42

***. Correlation is significant at the 0.01 level (2-tailed).*

Decision: As shown in Table 2, the Spearman correlation coefficient between digital marketing strategy and sustainable entrepreneurial performance is rho = 0.499, with a significance value (Sig. 2-tailed) of 0.001, which is less than both the 0.05 and the stricter 0.01 level of significance. The null hypothesis (H01) is therefore rejected. The study concludes that there is a statistically significant, moderate, positive relationship between digital marketing strategy and sustainable entrepreneurial performance of hotels in Rivers State. This implies that hotels which more deliberately deploy digital marketing tools, such as social media promotion, search engine optimisation and online travel agency listings, tend to exhibit correspondingly higher levels of sustainable entrepreneurial performance.

H02: There is no significant relationship between digital operations and process automation strategy and sustainable entrepreneurial performance of hotels in Rivers State.

Table 3. presents the SPSS Spearman correlation output for digital operations and process automation strategy and sustainable entrepreneurial performance:

Spearman's rho		Digital Operations & Automation	Sustainable entrepreneurial performance
Digital Operations & Automation	Correlation Coefficient	1.000	0.734**
	Sig. (2-tailed)	.	.000
	N	42	42
Sustainable entrepreneurial performance	Correlation Coefficient	0.734**	1.000
	Sig. (2-tailed)	.000	.
	N	42	42

***. Correlation is significant at the 0.01 level (2-tailed).*

Decision: As shown in Table 3, the Spearman correlation coefficient between digital operations and process automation strategy and sustainable entrepreneurial performance is rho = 0.734, with a significance value (Sig. 2-tailed) of < 0.001, which is less than both the 0.05 and 0.01 levels of significance. The null hypothesis (H02) is therefore rejected. The study concludes that there is a statistically significant, strong, positive relationship between digital operations and process automation strategy and sustainable entrepreneurial performance of hotels in Rivers State. Of the three digital transformation strategies examined in this study, digital operations and process automation strategy exhibits by far the strongest association with sustainable entrepreneurial performance, suggesting that streamlined, technology-enabled internal operations contribute most substantially to the economic and environmental resilience of hotel enterprises in Rivers State.

H03: There is no significant relationship between digital business model innovation strategy and sustainable entrepreneurial performance of hotels in Rivers State.

Table 4. presents the SPSS Spearman correlation output for digital business model innovation strategy and sustainable entrepreneurial performance:

Spearman's rho		Digital Business Model Innovation	Sustainable entrepreneurial performance
Digital Business Model Innovation	Correlation Coefficient	1.000	0.382*
	Sig. (2-tailed)	.	.013
	N	42	42
Sustainable entrepreneurial performance	Correlation Coefficient	0.382*	1.000
	Sig. (2-tailed)	.013	.
	N	42	42

**. Correlation is significant at the 0.05 level (2-tailed).*

Decision: As shown in Table 4, the Spearman correlation coefficient between digital business model innovation strategy and sustainable entrepreneurial performance is rho = 0.382, with a significance value (Sig. 2-tailed) of 0.013, which is less than the 0.05 level of significance, though not significant at the stricter 0.01 level. The null hypothesis (H03) is therefore rejected. The study concludes that there is a statistically significant, moderate, positive relationship between digital business model innovation strategy and sustainable entrepreneurial performance of hotels in Rivers State. The comparatively weaker strength of this relationship, relative to the other two digital transformation strategies examined, is consistent with the relatively low maturity and limited adoption of digital business model innovation, such as dynamic pricing and digitally-mediated partnerships, among hotels in Rivers State at present;

Table 5. Summary of Hypotheses Testing

Hypothesis	Spearman's rho	Sig. (2-tailed)	N	Decision
H01: Digital Marketing Strategy and Sustainable entrepreneurial performance	0.499**	0.001	42	Rejected
H02: Digital Operations & Automation Strategy and Sustainable entrepreneurial performance	0.734**	0.000	42	Rejected
H03: Digital Business Model Innovation Strategy and Sustainable entrepreneurial performance	0.382*	0.013	42	Rejected

***. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed). Source: Researcher's Computation, 2026 (SPSS version 25 output).*

Discussion of Findings

The results of the hypothesis testing provide strong empirical support for the proposition that digital transformation strategies are significantly and positively associated with sustainable entrepreneurial performance among hotels in Rivers State, while also revealing meaningful differences in the strength of this relationship across the three specific strategies examined.

The finding that digital marketing strategy is significantly and moderately correlated with sustainable entrepreneurial performance (rho = 0.499, p = 0.001) confirms that digital marketing contributes meaningfully to sustainable entrepreneurial outcomes, primarily through its capacity to expand market reach and strengthen revenue generation, the economic pillar of the triple bottom line. This finding aligns with Kannan and Li and Amadi and Briggs, both of whom found positive relationships between digital marketing intensity and business growth outcomes, although the latter study also cautioned that many small hospitality operators lack the strategic sophistication to fully convert digital marketing activity into sustained profitability, a caveat that may help explain why this relationship, while significant, was not the strongest observed in the present study.

The finding that digital operations and process automation strategy exhibits the strongest relationship with sustainable entrepreneurial performance among the three hypotheses tested (rho = 0.734, p < 0.001) is a central finding of this study [12]. This result is consistent with Ivanov and Webster and Chukwu and Eze, both of whom found strong positive associations between operational technology adoption and efficiency or sustainability-related outcomes. Within the framework of the Triple Bottom Line concept, this strong relationship suggests that digital operations and process automation strategy simultaneously advances the economic dimension of sustainable entrepreneurial performance, through cost and labour efficiency, and the environmental dimension, through more efficient utilisation of energy, water and other operational resources, making it the most potent lever available to hotel entrepreneurs in Rivers State seeking to strengthen sustainable entrepreneurial performance [13].

The finding that digital business model innovation strategy is significantly, but only moderately, correlated with sustainable entrepreneurial performance (rho = 0.382, p = 0.013), the weakest of the three relationships observed, is consistent with Bouwman, Nikou and de Reuver, who found that digital business model innovation, being a more advanced and less commonly pursued form of digital transformation, particularly among smaller firms, tends to exhibit a less pronounced, though still positive, relationship with firm performance outcomes relative to more operationally-focused digital initiatives. Within the framework of Dynamic Capabilities Theory (Teece, Pisano & Shuen), this finding may reflect the fact that many hotels in Rivers State have not yet developed the sensing and seizing capabilities necessary to fully exploit digital business model innovation opportunities such as dynamic pricing or digitally-mediated partnership models, limiting the strength of this relationship relative to more foundational digital marketing and operations strategies [14].

Taken together, these findings reinforce the theoretical proposition, drawn from Dynamic Capabilities Theory, the Triple Bottom Line concept and the Resource-Based View, that digital transformation strategies contribute differentially, but consistently positively, to sustainable entrepreneurial performance, depending on the maturity of adoption and the directness of each strategy's linkage to the economic, social and environmental pillars of sustainability [15]. The pronounced strength of the operations automation-sustainability relationship, relative to marketing and business model innovation strategies, suggests that hotel entrepreneurs in Rivers State seeking to advance sustainable entrepreneurial performance may derive the most immediate and substantial returns from prioritising digital operations and process automation investment, while continuing to build digital marketing capability and progressively developing the more advanced dynamic capabilities required for successful digital business model innovation.

4. Conclusions

Based on the findings of this study, it is concluded that digital transformation strategies are significant positive determinants of sustainable entrepreneurial performance among hotels in Rivers State. All three digital transformation strategies examined in this study, digital marketing strategy, digital operations and process automation strategy, and digital business model innovation strategy, were found to be significantly and positively associated with sustainable entrepreneurial performance, although the strength of this relationship varied considerably, with digital operations and process automation strategy exhibiting by far the strongest relationship, followed by digital marketing strategy, and then digital business model innovation strategy. The study concludes that hotel entrepreneurs in Rivers State stand to gain considerable sustainable entrepreneurial benefits from continued digital transformation investment, but that the magnitude of these benefits is likely to depend significantly on which specific digital transformation strategy receives investment priority, with digital operations and process automation offering the most substantial and immediate returns, while digital business model innovation represents a longer-term, currently less-exploited opportunity for advancing sustainable entrepreneurial performance.

Based on the findings and conclusions of this study, the following recommendations are made:

1) Hotel entrepreneurs in Rivers State should prioritise investment in digital operations and process automation technologies, including property management systems and automated billing and resource management tools, given the particularly strong relationship observed between this strategy and sustainable entrepreneurial performance.
2) Hotel entrepreneurs should continue to strengthen digital marketing capabilities, including social media presence, search engine optimisation and strategic online travel agency partnerships, while developing the strategic sophistication needed to

convert digital marketing reach into sustained profitability rather than short-term visibility alone.

3) Hotel entrepreneurs should progressively explore digital business model innovation opportunities, such as dynamic pricing, direct booking incentive schemes and digitally-mediated partnerships with local tourism and service providers, recognising this as a longer-term but valuable pathway to sustainable entrepreneurial growth.

The study "Digital Transformation Strategies and sustainable entrepreneurial performance of Hotels in Rivers State" is aligned with the United Nations Sustainable Development Goals, particularly SDG 8 (Decent Work and Economic Growth), SDG 9 (Industry, Innovation and Infrastructure), SDG 11 (Sustainable Cities and Communities), SDG 12 (Responsible Consumption and Production), and SDG 13 (Climate Action). The alignment is based on the ability of digital transformation to improve hotel productivity, innovation, market access, operational efficiency and resource utilization, and the development of the hotel's business model. Digital marketing can help expand the market and engage customers, and digital operations and process automation can help increase productivity and efficiency of resources. Digital business model innovation can generate new revenue opportunities and digitally enabled partnerships in the tourism ecosystem. All these strategies can assist the hotels to not only achieve economic sustainability but to also consider their social and environmental outlook, extending the impact of the hotel entrepreneurship towards sustainable development in Rivers State.

REFERENCES

[1] N. M. P. Bocken, S. W. Short, P. Rana, and S. Evans, 'A literature and practice review to develop sustainable business model archetypes', *J. Clean. Prod.*, vol. 65, pp. 42–56, 2014, doi: 10.1016/j.jclepro.2013.11.039.

[2] J. Elkington, *Cannibals with Forks: The Triple Bottom Line of 21st Century Business*. Oxford, U.K.: Capstone Publishing, 1997.

[3] P. K. Kannan and H. A. Li, 'Digital marketing: A framework, review and research agenda', *Int. J. Res. Mark.*, vol. 34, no. 1, pp. 22–45, 2017, doi: 10.1016/j.ijresmar.2016.11.006.

[4] C. Matt, T. Hess, and A. Benlian, 'Digital transformation strategies', *Bus. Inf. Syst. Eng.*, vol. 57, no. 5, pp. 339–343, 2015, doi: 10.1007/s12599-015-0401-5.

[5] S. Chanias, M. D. Myers, and T. Hess, 'Digital transformation strategy making in pre-digital organizations: The case of a financial services provider', *J. Strateg. Inf. Syst.*, vol. 28, no. 1, pp. 17–33, 2019, doi: 10.1016/j.jsis.2018.11.003.

[6] H. Bouwman, S. Nikou, and M. de Reuver, 'Digitalization, business models, and SMEs: How do business model innovation practices improve performance of digitalizing SMEs?', *Telecommun. Policy*, vol. 43, no. 9, p. 101828, 2019, doi: 10.1016/j.telpol.2019.101828.

[7] D. J. Teece, G. Pisano, and A. Shuen, 'Dynamic capabilities and strategic management', *Strateg. Manag. J.*, vol. 18, no. 7, pp. 509–533, 1997, doi: 10.1002/(SICI)1097-0266(199708)18:7<509::AID-SMJ882>3.0.CO;2-Z.

[8] J. Barney, 'Firm resources and sustained competitive advantage', *J. Manag.*, vol. 17, no. 1, pp. 99–120, 1991, doi: 10.1177/014920639101700108.

[9] B. Cohen and M. I. Winn, 'Market imperfections, opportunity and sustainable entrepreneurship', *J. Bus. Ventur.*, vol. 22, no. 1, pp. 29–49, 2007, doi: 10.1016/j.jbusvent.2004.12.001.

[10] J. C. Nunnally, *Psychometric Theory*, 2nd edn. New York, NY, USA: McGraw-Hill, 1978.

[11] S. Ivanov and C. Webster, Eds, *Robots, Artificial Intelligence, and Service Automation in Travel, Tourism and Hospitality*. Bingley, U.K.: Emerald Publishing Limited, 2019.

[12] C. Amadi and D. Briggs, 'Social media marketing and business growth among small hospitality enterprises in Rivers State', *J. Small Bus. Enterp. Dev.*, vol. 5, no. 1, pp. 40–55, 2022.

[13] T. Yamane, *Statistics: An Introductory Analysis*, 2nd edn. New York, NY, USA: Harper and Row, 1967.

[14] C. Chukwu and S. C. Eze, 'Technology adoption and business sustainability among small and medium hospitality enterprises in South-South Nigeria', *J. Hosp. Tour. Stud.*, vol. 3, no. 2, pp. 66–81, 2021.

[15] D. A. Shepherd and H. Patzelt, 'The new field of sustainable entrepreneurship: Studying entrepreneurial action linking "what is to be sustained" with "what is to be developed"', *Entrep. Theory Pract.*, vol. 35, no. 1, pp. 137–163, 2011, doi: 10.1111/j.1540-6520.2010.00426.x.