

EFFECT OF INNOVATION ON THE SUSTAINABILITY OF SMALL AND MEDIUM ENTERPRISES IN THE DIGITAL ERA: EVIDENCE FROM LAGOS STATE, NIGERIA

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ABSTRACT

This paper examines the effect of innovation on the sustainability of Small and Medium Enterprises (SMEs) in the digital era, with evidence centred on Lagos State, Nigeria. The study treats product innovation, process innovation, marketing innovation, and organisational innovation as the explanatory dimensions, while SME sustainability is conceptualised as the capacity of an enterprise to remain viable, competitive, adaptive, and resilient over time.. A quantitative cross-sectional survey design is adopted. The study population is 91,097 small and medium enterprises reported for Lagos State in the 2021 MSME Survey, while the Yamane formula produces a minimum sample of approximately 398 enterprises; a target sample of 400 SME owners or managers is retained. Data are to be collected through a structured five-point Likert scale questionnaire and analysed with Partial Least Squares Structural Equation Modelling using SmartPLS. Institutional Theory and Social Exchange Theory provide the principal theoretical lenses. The reviewed evidence generally suggests that innovation can strengthen SME competitiveness, efficiency, market responsiveness, and adaptive capacity, although the size and significance of the effects vary across innovation dimensions and contexts. The paper concludes that a multidimensional treatment of innovation offers a stronger basis for explaining SME sustainability than treating innovation as a single aggregate construct.

Keywords: innovation, product innovation, process innovation, marketing innovation, organisational innovation, SME sustainability, digital era, Lagos State

1.0 INTRODUCTION

Small and Medium Enterprises are widely recognised as important vehicles for employment creation, income generation, entrepreneurial development, innovation, and economic diversification. Their significance is especially pronounced in developing economies where formal employment opportunities are constrained and smaller firms provide an accessible route into productive activity. The sustainability of these enterprises, however, cannot be understood solely in terms of short-term profitability. Sustainable SMEs must remain operationally viable, competitive, responsive to changing markets, capable of learning, and sufficiently resilient to withstand economic, technological, and institutional shocks. In the contemporary digital environment, these requirements have become more demanding because customers, suppliers, competitors, and regulators increasingly interact through technology-enabled systems. Innovation has consequently become a central managerial capability for firms seeking to preserve relevance and long-term viability (Acs & Audretsch, 2019; Teece, 2018).

Digitalisation has changed how enterprises design products, organise production, manage information, communicate with customers, receive payments, coordinate supply chains, and make strategic decisions. Digital platforms can lower transaction costs and create access to markets that were previously difficult for smaller firms to reach. At the same time, digitalisation can expose SMEs to more intense competition, faster shifts in consumer expectations, cyber and technology risks, and new demands for skills and investment. The strategic issue is therefore not simply whether an SME possesses digital tools, but whether it

can use innovation to convert technological and market change into improved customer value, operational efficiency, organisational adaptability, and business continuity. This distinction is important because technology acquisition without complementary managerial capabilities may increase cost without producing sustainable outcomes.

Innovation is treated in this study as a multidimensional organisational activity rather than a single undifferentiated concept. Product innovation concerns the introduction of new or significantly improved goods and services. Process innovation refers to meaningful improvements in production, delivery, logistics, workflow, and operational methods. Marketing innovation covers new approaches to promotion, pricing, distribution, market positioning, customer engagement, and the use of digital channels. Organisational innovation concerns changes in management practices, structures, routines, workplace arrangements, knowledge sharing, and internal coordination. These dimensions are related but analytically distinct because they require different resources and may affect sustainability through different mechanisms (Damanpour, 1991; Oke et al., 2007; Tidd et al., 2005).

Product innovation can sustain an enterprise by renewing its market offering and responding to changes in customer preferences. Process innovation can improve cost efficiency, quality, speed, and consistency. Marketing innovation can strengthen customer acquisition, retention, brand visibility, and market reach, while organisational innovation can increase flexibility, learning, employee participation, and the quality of decision-making. The combined effect of these capabilities may be particularly important for SMEs because smaller enterprises usually operate with narrower financial and managerial buffers than large firms. A poorly chosen innovation may therefore impose a relatively high burden, whereas an innovation that is aligned with market demand and organisational capability may materially improve resilience and competitiveness.

Lagos State provides a relevant setting for this investigation because it combines a large and diverse business population with a highly competitive commercial environment. The 2021 MSME Survey jointly reported by the Small and Medium Enterprises Development Agency of Nigeria and the National Bureau of Statistics identified 91,097 small and medium enterprises in Lagos State. The state also has extensive exposure to electronic payments, e-commerce, social media marketing, platform-based services, logistics technology, and other forms of digital business activity. These features create an environment in which SMEs are under continuous pressure to adapt products, processes, marketing methods, and organisational practices in order to remain viable (SMEDAN & NBS, 2021).

The central research problem is that the potential contribution of innovation to SME sustainability is plausible but not automatic. SMEs frequently face limited finance, infrastructure constraints, uneven digital skills, weak research and development capability, restricted access to specialised knowledge, and uncertainty about the commercial value of new technologies. Innovation therefore involves both opportunity and risk. A new product may fail to obtain market acceptance; a process technology may be costly or poorly integrated; digital marketing may generate visibility without profitable conversion; and organisational restructuring may create disruption if employees and managers are not prepared for change. The problem is not whether innovation is desirable in the abstract, but which dimensions of innovation contribute most meaningfully to sustainability in the Lagos State SME context.

Existing studies generally associate innovation with performance, growth, competitiveness, resilience, and market adaptation, but empirical findings differ according to industry, firm size, national context, measurement, and analytical method. Some studies give

strong attention to product or process innovation, while others focus on marketing or organisational innovation. A further limitation is that innovation is sometimes treated as a single composite construct, making it difficult to identify the relative contribution of specific innovation practices. The present study addresses this gap by examining product, process, marketing, and organisational innovation simultaneously against a common dependent construct, SME sustainability. This design makes it possible to compare the direction, strength, and significance of the four relationships within one analytical model.

The main objective of the study is to examine the effect of innovation on the sustainability of Small and Medium Enterprises in the digital era in Lagos State, Nigeria. Specifically, the study seeks to examine the effect of product innovation on SME sustainability, determine the effect of process innovation on SME sustainability, assess the effect of marketing innovation on SME sustainability, and evaluate the effect of organisational innovation on SME sustainability. These objectives provide the basis for the research questions and null hypotheses and ensure that the empirical analysis remains closely aligned with the four explanatory dimensions.

The research questions are: what effect does product innovation have on the sustainability of SMEs in the digital era in Lagos State; what effect does process innovation have on SME sustainability; to what extent does marketing innovation affect SME sustainability; and what effect does organisational innovation have on SME sustainability? Correspondingly, the study tests four null hypotheses stating that product innovation, process innovation, marketing innovation, and organisational innovation respectively have no significant effect on SME sustainability in the digital era in Lagos State.

The significance of the study lies in its capacity to produce differentiated evidence for SME owners and managers, policy makers, enterprise-support institutions, financial institutions, technology providers, and researchers. SME decision-makers frequently operate under resource constraints and cannot invest equally in every innovation activity. Evidence about the relative contribution of each innovation dimension can therefore support better allocation of scarce financial and managerial resources. For policy institutions such as SMEDAN and the Lagos State Government, the study can inform the design of enterprise support, training, digital capability, market development, and financing interventions that are more closely aligned with the innovation practices associated with sustainability.

The study is geographically limited to Lagos State and covers SMEs across different sectors rather than one industry. The content scope is restricted to product innovation, process innovation, marketing innovation, organisational innovation, and SME sustainability in the digital era. The unit of analysis is the enterprise, while owners, managers, and senior personnel serve as respondents because they are expected to possess sufficient knowledge of the firm's innovation activities and sustainability experience. Methodologically, the study adopts a quantitative cross-sectional survey and specifies Partial Least Squares Structural Equation Modelling for the analysis. The temporal scope corresponds to the 2025 field-survey period, and all empirical conclusions are expected to be based on data collected from the approved Lagos State sample.

A further reason for examining the issue in the digital era is that digitalisation changes both the opportunities and the risks associated with innovation. Digital tools can enable SMEs to test products quickly, communicate with customers at lower cost, automate routine activities, monitor inventory, receive electronic payments, and reach markets beyond their immediate physical locations. At the same time, the benefits are uneven because firms differ in financial

capacity, managerial competence, employee skills, access to reliable infrastructure, and ability to interpret market information. Innovation therefore represents a capability that must be organised and sustained rather than a one-off technological purchase. This distinction is important for Lagos State, where SMEs operate in a competitive commercial environment and may face pressure to adopt visible digital practices without possessing the complementary routines needed to derive lasting value from them. The study consequently focuses on whether specific innovation dimensions provide meaningful support for continued viability, adaptability, competitiveness, and resilience rather than assuming that every adoption decision necessarily improves sustainability (Damanpour & Schneider, 2006; Teece, 2018).

The study also recognises that the four innovation dimensions are analytically separable but practically interconnected. A new product may require a different production or service process, revised pricing and promotional methods, and changes in internal responsibilities. Likewise, a new digital marketing channel may create demand that existing processes cannot fulfil unless the enterprise reorganises logistics and customer service. This complementarity provides a strong rationale for examining product, process, marketing, and organisational innovation in one model. By estimating their separate relationships with SME sustainability, the study seeks to identify whether one form of innovation makes a stronger direct contribution than another while acknowledging that enterprise practice often involves combinations of innovation activities. The resulting evidence can support more selective allocation of scarce SME resources and help policy institutions avoid treating innovation support as a uniform intervention for all firms and sectors (Tidd et al., 2005; Hult et al., 2004).

2.0 LITERATURE REVIEW

Conceptual Review

Innovation has been approached from economic, organisational, technological, and behavioural perspectives, but a common element across these perspectives is the purposeful implementation of novelty. Schumpeter's early treatment of innovation placed new products, production methods, markets, and organisational forms at the centre of economic change. Later organisational research broadened the concept by emphasising adoption and implementation within firms. Damanpour (1991) defined organisational innovation in a way that captures both technical and administrative change, while Tidd et al. (2005) described innovation as a process moving from the generation of ideas to development and exploitation. These perspectives distinguish innovation from invention because an idea becomes economically meaningful when it is implemented and used to create value.

For SMEs, the concept of innovation should be interpreted relatively rather than only in terms of radical scientific novelty. A practice may be innovative to an enterprise when it is new to that firm even if it already exists elsewhere. This perspective is particularly useful in a developing economy where many innovations take the form of adopting digital payment systems, customer relationship applications, e-commerce channels, inventory software, new production methods, or improved work arrangements. The relevant question is whether the new practice improves the firm's capacity to create value and adapt to its environment. Consequently, the present study views innovation as the purposeful introduction and

application of new or significantly improved products, processes, marketing methods, and organisational practices.

Product innovation concerns the development or introduction of goods and services that are new or meaningfully improved in relation to features, design, quality, functionality, technology, or user experience. Garcia and Calantone (2002) emphasised the need to distinguish degrees of innovativeness, while Oke et al. (2007) showed that different innovation types can have different performance implications for growing SMEs. Product innovation is therefore not restricted to radical inventions. Incremental improvement can be strategically important when it increases customer value, responds to changing preferences, improves quality, or differentiates the enterprise from competitors. In digital markets, product innovation may also include digital versions of services, technology-enabled features, subscription models, bundled offerings, or new service experiences.

Process innovation refers to meaningful improvement in the way goods and services are produced, delivered, coordinated, or supported. It may involve technology, workflow redesign, logistics, inventory control, service delivery, quality management, automation, or information systems. Damanpour and Schneider (2006) emphasised that innovation becomes organisationally meaningful when it is implemented, while Hagedoorn and Cloudt (2003) highlighted the value of using multiple indicators when assessing innovative performance. For SMEs, process innovation can reduce waste, shorten lead times, improve consistency, enhance service speed, lower cost, and increase the reliability of operations. These benefits can strengthen sustainability by reducing the vulnerability created by inefficient routines.

Marketing innovation relates to the introduction of substantially improved methods of identifying, attracting, serving, and retaining customers. It can cover pricing, promotion, distribution, brand positioning, product presentation, market segmentation, customer experience, and digital engagement. Marketing innovation is particularly relevant in the digital era because social media, online marketplaces, data analytics, mobile communication, and platform-based commerce have changed the ways in which SMEs reach markets. The strategic value of marketing innovation depends on whether novel methods improve customer understanding and profitable market relationships rather than merely increasing online visibility. The construct therefore captures both creativity in marketing practice and the commercial discipline required to convert market engagement into sustainable value.

Organisational innovation concerns new or significantly improved managerial practices, organisational structures, workplace arrangements, decision routines, collaboration systems, and knowledge-sharing mechanisms. Damanpour (1991) showed that innovation includes administrative as well as technical change, and West and Farr (1990) emphasised the intentional application of new ideas and procedures within work settings. Organisational innovation can provide the internal conditions that allow other innovation types to succeed. An enterprise may acquire a new technology, for example, but fail to realise its benefits if reporting relationships, staff skills, decision authority, or incentives remain poorly aligned. Flexible structures, employee involvement, learning routines, and effective coordination can therefore contribute directly to adaptability and resilience.

SME sustainability is conceptualised in this paper as the ability of a small or medium enterprise to maintain viable operations and create value over time while adapting to economic, technological, market, social, and institutional change. This concept is broader than a single-period measure of profitability. A profitable business may remain vulnerable if it has weak customer retention, high operational fragility, poor adaptability, or inadequate capability to

respond to market shifts. Sustainability therefore encompasses continuity, competitiveness, adaptability, resilience, and the capacity to preserve stakeholder value. This interpretation is consistent with the study's objective of assessing whether innovation strengthens the long-term viability of enterprises rather than only producing short-term performance gains.

The conceptual relationship proposed in the study is that each innovation dimension can influence sustainability through a different pathway. Product innovation acts primarily through customer value and market renewal; process innovation through efficiency, quality, and operational resilience; marketing innovation through market access, customer relationships, and revenue generation; and organisational innovation through flexibility, learning, coordination, and adaptive capacity. These pathways may reinforce each other. A new product may require a new process, a new marketing approach, and changes in organisational routines before it generates sustainable value. The multidimensional framework therefore recognises complementarity while retaining the analytical distinction needed to identify the independent contribution of each innovation dimension.

Empirical Review

Empirical research generally reports a positive association between innovation and SME performance or sustainability, although the evidence is heterogeneous. Studies differ in their definitions of sustainability, industries, countries, sample sizes, analytical techniques, and the maturity of the innovations examined. This variation matters because an innovation that improves sales in one sector may not necessarily strengthen long-term resilience in another. The empirical review is therefore organised according to the four explanatory variables in the present study rather than treating innovation as a single category.

Regarding product innovation, the literature suggests that enterprises that renew or improve their offerings can enhance differentiation, customer satisfaction, market share, and survival prospects. Li and Atuahene-Gima (2001) linked product innovation strategy with the performance of new technology ventures, while Calantone et al. (2002) showed that learning orientation and innovation capability are associated with stronger firm performance. In the Nigerian context retained in the dissertation, Akinwumi (2022) found that technological, product, and process innovation were significant positive correlates of SME performance in Ibadan metropolis. Ekeh (2023) similarly reported a significant positive effect of product innovation on the growth of medium enterprises in North Central Nigeria. These studies support the expectation that continuous renewal of market offerings can strengthen enterprise viability, although their performance measures do not always capture the wider concept of sustainability used in the present research.

Product innovation evidence must nevertheless be interpreted cautiously. A new product can increase sustainability only when it is commercially relevant and supported by adequate capabilities. Development costs, weak market information, imitation by competitors, and limited finance can reduce the return from innovation. The fact that many earlier studies are industry-specific also limits direct generalisation to the diverse Lagos State SME population. The present study therefore tests product innovation within a multisector sample and estimates its effect alongside three other innovation dimensions, which reduces the risk of attributing to product innovation effects that may actually arise from complementary process, marketing, or organisational changes.

Process innovation has received substantial attention because SMEs often compete through efficiency and service responsiveness rather than scale. Research indicates that

improved workflows, technology adoption, quality systems, and operational redesign can reduce cost, increase productivity, improve customer experience, and strengthen resilience. Makinde et al. (2021), in a study of SMEs in selected Local Government Areas of Oyo State, reported a positive and significant effect of process innovation on customer retention. Akinwumi (2022) also identified process innovation as a positive correlate of SME performance. International evidence similarly links process innovation with operational improvement, although the magnitude of the effect depends on resources, managerial capability, and the degree to which new processes are integrated into routine activities.

A limitation of the process innovation literature is that many studies rely on cross-sectional data and use immediate efficiency or performance indicators as proxies for sustainability. Such designs provide useful association evidence but are weaker for establishing long-run causality. Process changes may initially create disruption or implementation costs before benefits emerge, and the effect can be contingent on employee skills and organisational learning. The present study responds partly to this limitation by defining sustainability more broadly and by interpreting process innovation together with organisational innovation, since new operational methods often require changes in coordination, roles, and decision routines.

Marketing innovation is increasingly important to SMEs because digital platforms have reduced the cost of reaching customers while intensifying competition for attention. The reviewed studies generally indicate that innovative marketing methods can improve customer engagement, brand visibility, market reach, sales, and customer retention. Marketing innovation may involve social media strategies, new distribution channels, personalised communication, online marketplaces, data-supported targeting, new pricing approaches, or creative positioning. Evidence retained in the dissertation includes studies linking marketing innovation with financial performance, customer relationships, and competitiveness. The central implication is that market-facing innovation contributes to sustainability when it improves the quality and durability of customer relationships rather than simply expanding promotional activity.

The marketing evidence also reveals an important contingency. A novel campaign or digital channel does not automatically translate into sustainable performance. SMEs need market knowledge, content capability, customer analytics, suitable products, and operational capacity to fulfil demand generated through new channels. The potential effect of marketing innovation may therefore depend on product quality and process reliability. This interdependence justifies the simultaneous PLS-SEM model used in the present study because it allows marketing innovation to be assessed while the other innovation dimensions are also represented in the structural model.

Organisational innovation has been linked with flexibility, knowledge sharing, employee involvement, learning, collaboration, and improved coordination. Damanpour's (1991) work established the importance of administrative innovation, while later studies have examined the performance consequences of new organisational arrangements. The empirical evidence reviewed in the dissertation generally indicates that SMEs with more adaptive structures and innovation-supportive practices are better positioned to implement technology, respond to external change, and maintain competitiveness. Organisational innovation can also increase the effectiveness of product and process changes because implementation depends on people, authority structures, incentives, and routines. This makes it a particularly important explanatory variable in the digital era, when rapid adjustment is often required.

The major empirical gap is therefore not an absence of evidence that innovation matters, but insufficient clarity about the relative effects of different innovation dimensions on a common sustainability outcome in the Lagos State SME environment. Much of the prior evidence focuses on a single innovation type, one industry, or conventional performance indicators such as sales, profitability, or customer retention. The present study addresses this gap by modelling product, process, marketing, and organisational innovation simultaneously and treating SME sustainability as the endogenous construct. This approach is expected to produce more differentiated evidence for managerial and policy decision-making.

Across the studies reviewed, three methodological patterns are evident. First, much of the literature uses cross-sectional questionnaires and perceptual measures of performance, which are useful for identifying associations but provide limited evidence about whether innovation causes sustainability over time. Second, studies frequently examine one innovation dimension in isolation or use broad measures of innovation that combine several practices. Such approaches can obscure whether sustainability is driven mainly by changes in products, operating processes, market-facing activities, or internal organisational arrangements. Third, outcome measures differ considerably. Some researchers use sales growth, profitability, customer retention, market share, productivity, resilience, or survival as proxies for sustainability. These indicators capture important aspects of enterprise viability but are not identical. The present study responds to these limitations by defining SME sustainability as a broader latent construct and by estimating the four innovation dimensions simultaneously through PLS-SEM. The approach does not remove the limitations of cross-sectional research, but it permits a more differentiated assessment of the relative contribution of each innovation construct within one analytical framework (Hair et al., 2019; Oke et al., 2007).

A second synthesis concerns the role of complementary capabilities. Product innovation is unlikely to generate sustainable value when an enterprise lacks the processes required to produce or deliver the new offering reliably. Process innovation can reduce costs, but efficiency improvements may not translate into sustainability if the firm lacks effective marketing or cannot retain customers. Marketing innovation can expand visibility and market access, yet increased demand may expose weaknesses in logistics, staffing, or service quality. Organisational innovation may therefore function as an enabling capability by creating the structures, communication routines, employee participation, and knowledge-sharing practices through which product, process, and marketing changes are coordinated. This complementarity is consistent with research that links organisational learning, absorptive capacity, and innovation performance and suggests that the effect of each innovation dimension should be interpreted within the wider capability configuration of the SME rather than as a completely independent managerial action (Cohen & Levinthal, 1990; Jiménez-Jiménez & Sanz-Valle, 2011).

The contextual evidence further suggests that findings from large firms or technology-intensive economies should not be transferred uncritically to Nigerian SMEs. Smaller enterprises often operate with tighter financial margins, less formalised management systems, restricted access to specialised skills, and greater exposure to infrastructure and policy uncertainty. These conditions can increase the cost of experimentation and make unsuccessful innovation more damaging. Conversely, SMEs may also benefit from shorter decision chains, close customer relationships, and flexibility that allows them to alter products or routines quickly. The empirical question is therefore not whether innovation is universally beneficial, but under what form and with what relative strength it is associated with sustainability in the

Lagos State setting. The present study is designed to provide this context-specific evidence and to compare the four dimensions using a common dependent construct, measurement framework, sample, and analytical procedure.

The Nigerian SME environment gives additional importance to the innovation and sustainability relationship. Smaller firms often confront high operating costs, infrastructure gaps, exchange-rate and input-price pressures, limited access to long-term finance, and uneven technological capability. Under such conditions, innovation can operate as a survival mechanism rather than merely a growth strategy. A process that lowers energy use, a digital sales channel that broadens customer access, or an organisational practice that improves employee problem-solving may help preserve business continuity when external conditions become difficult. At the same time, resource scarcity raises the cost of failed experimentation. This creates a strong case for evidence that distinguishes among innovation types and identifies where limited SME resources are most productively deployed.

The digital era also changes the meaning of the four innovation dimensions. Product innovation may involve software-supported services, platform access, customised offerings, or digitally enhanced customer experiences. Process innovation increasingly includes electronic payments, cloud-based records, automated inventory, digital procurement, online ordering, and data-supported decision-making. Marketing innovation may involve social commerce, search visibility, content marketing, online marketplaces, customer databases, and direct messaging channels. Organisational innovation can include remote coordination, digital workflow systems, cross-functional teams, collaborative platforms, and faster decentralised decision-making. These developments reinforce the argument that innovation should be assessed as an integrated capability while still allowing the separate contribution of each dimension to be estimated.

Further evidence on product innovation indicates that its contribution depends on the firm's ability to connect novelty with market learning. Hult et al. (2004) found that innovativeness is related to business performance through a broader organisational orientation toward learning and responsiveness. Jiménez-Jiménez and Sanz-Valle (2011) similarly linked innovation, organisational learning, and performance, suggesting that the value of new products is partly determined by a firm's capacity to acquire and apply knowledge. This is relevant to Lagos SMEs because rapid shifts in consumer preferences can render product ideas obsolete quickly. Product innovation is therefore expected to support sustainability most strongly when customer information, experimentation, and feedback are embedded in the development process rather than when new products are introduced without systematic market validation.

Nigerian evidence retained in the dissertation reinforces this logic. Ekeh (2023) reported a significant positive relationship between product innovation and the growth of medium enterprises in North Central Nigeria, while Akinwumi (2022) found product innovation to be a positive correlate of SME performance in Ibadan. Although growth and performance are narrower than the sustainability construct used in this study, both findings imply that product renewal can help smaller firms defend market position. The present research extends these studies by focusing on Lagos State, by combining several sectors, and by evaluating product innovation together with process, marketing, and organisational innovation in one structural model.

Process innovation is especially relevant where enterprises face persistent pressure to reduce waste and maintain service quality. Laursen and Foss (2003) demonstrated that new

organisational and human-resource practices can complement innovation performance, which implies that process changes often require employee participation and supportive work systems. Damanpour and Schneider (2006) likewise stressed that innovation adoption is shaped by organisational and managerial conditions. For SMEs, a new operating system may fail to improve sustainability if employees do not understand it, if routines remain fragmented, or if the technology is not integrated into daily decision-making. Effective process innovation therefore combines technical change with organisational learning and disciplined implementation.

The result reported by Makinde et al. (2021), showing a positive and significant effect of process innovation on customer retention among SMEs in selected Oyo State local governments, illustrates how internal operational improvements can generate market consequences. Reliable delivery, faster response, consistent quality, and lower error rates can improve customer experience and repeat patronage. This mechanism is directly relevant to sustainability because customer retention stabilises revenue and reduces the cost of continually replacing lost customers. Nevertheless, a cross-sectional association cannot fully establish how long such benefits persist, which supports the need for cautious interpretation of the present cross-sectional design.

Marketing innovation has become more accessible because digital platforms reduce entry costs, but accessibility also makes imitation easier. A distinctive marketing method may provide only temporary advantage unless it is supported by customer knowledge, brand credibility, and continuous adaptation. Marketing innovation should therefore be understood as a capability for learning about markets and redesigning how value is communicated and delivered. The empirical literature reviewed in the dissertation generally indicates positive associations with customer engagement, market performance, and firm outcomes. These findings suggest that the Lagos State analysis should examine not simply whether firms use digital channels, but whether their marketing practices are genuinely new to the enterprise and are associated with sustainable customer relationships.

Chen et al. (2020), as reported in the dissertation, linked marketing innovation with SME sustainability and highlighted the mediating role of market orientation. Although the study was conducted outside Nigeria, its logic is relevant because innovative marketing is more likely to produce value when it is grounded in systematic attention to customer needs and competitor behaviour. For Lagos SMEs, the implication is that social media presence, online advertising, or new pricing approaches should not be treated as innovation merely because they are digital. Their sustainability contribution depends on whether they improve market understanding, customer conversion, retention, and the quality of value exchange.

Organisational innovation may be the enabling condition through which the other three dimensions become effective. Innovation projects frequently cross functional boundaries and require information sharing, experimentation, altered responsibilities, and acceptance of uncertainty. West and Farr (1990) emphasised the intentional application of new ideas in work settings, while Damanpour (1991) showed that administrative innovation is a legitimate part of the wider innovation construct. These perspectives imply that SMEs with rigid authority structures or weak knowledge sharing may struggle to implement product, process, and marketing changes even when attractive opportunities are identified.

The empirical implication is that organisational innovation should be interpreted both as a direct predictor of sustainability and as a capability that may support other innovation activities. The current structural model estimates only its direct effect, so the discussion should

acknowledge that some organisational benefits may operate indirectly through improved product development, process execution, or marketing responsiveness. Future extensions could test mediation or interaction relationships. For the present study, however, the direct-effect design offers a clear and parsimonious comparison of the four innovation dimensions and is appropriate for identifying their relative associations with SME sustainability in Lagos State.

Theoretical Framework

Institutional Theory and Social Exchange Theory form the theoretical framework of the study. Institutional Theory explains how organisational choices are shaped by formal rules, professional expectations, industry norms, customer demands, and taken-for-granted practices. Meyer and Rowan (1977) argued that organisational structures are influenced by institutional expectations, while DiMaggio and Powell (1983) identified coercive, normative, and mimetic pressures as mechanisms through which organisations become more similar. Coercive pressure may arise from regulation or powerful stakeholders, normative pressure from professional standards and accepted practices, and mimetic pressure from the tendency to imitate apparently successful competitors under uncertainty.

Institutional Theory is relevant because SMEs do not innovate in isolation. Digital payment expectations, customer service standards, regulatory requirements, industry platforms, sustainability expectations, and competitive practices can all create pressure to adopt new products, processes, marketing methods, or organisational arrangements. Innovation can therefore support sustainability by helping an enterprise preserve legitimacy, maintain access to customers and partners, and align itself with changing environmental expectations. The theory is especially useful for explaining process and organisational innovation, where external standards and industry practices can influence internal routines and structures. A limitation is that institutional explanations can overemphasise conformity and understate managerial agency and firm-level capability. SMEs may face similar pressures yet respond differently because of resources, leadership, knowledge, and strategic choice.

Social Exchange Theory complements this perspective by focusing on relationships and reciprocity. Homans (1958) described social interaction in terms of rewards and costs, while Blau (1964) emphasised how repeated exchanges create obligations, trust, and durable relationships. SMEs depend heavily on exchanges with customers, employees, suppliers, financiers, technology providers, professional associations, and business partners. Through these relationships they can obtain information, referrals, expertise, resources, feedback, and legitimacy that support innovation. Product and marketing innovation may be strengthened by customer and market feedback, while process and organisational innovation can benefit from exchanges with employees, suppliers, consultants, and technology partners.

The combined framework is appropriate because Institutional Theory explains why environmental pressures may encourage innovation, whereas Social Exchange Theory explains how the relationships needed to acquire knowledge and resources can support implementation. Together, the theories suggest that innovation contributes to SME sustainability when firms respond intelligently to external expectations and mobilise reciprocal stakeholder relationships to obtain the information, trust, cooperation, and resources required for successful change. The empirical model does not directly test the theories as separate latent constructs; rather, they provide the interpretive lens through which the estimated relationships between the four innovation dimensions and SME sustainability will be discussed.

The theories also provide useful boundaries for interpretation. Institutional pressure should not be assumed to produce effective innovation automatically because firms may adopt practices symbolically or imitate competitors without developing the capabilities required for successful use. Similarly, Social Exchange Theory does not imply that every stakeholder relationship is beneficial; exchanges can be unequal, costly, or constrained by weak trust. These limitations strengthen the need to interpret empirical coefficients together with context. A positive innovation effect may reflect successful alignment between external demands, internal capability, and stakeholder support, whereas a weak effect may indicate that adoption has occurred without effective implementation or without the reciprocal relationships needed to convert innovation into sustainable value.

3.0 METHODOLOGY

The study adopts a quantitative cross-sectional survey design. This design is appropriate because information on innovation practices and sustainability is collected from a sample of enterprises at a defined point in time and analysed quantitatively to estimate relationships among latent constructs. The survey approach provides standardised responses from SME owners and managers and is suitable for examining product innovation, process innovation, marketing innovation, organisational innovation, and SME sustainability within one analytical framework. The design is explanatory in orientation because the hypotheses concern the effects of the four innovation dimensions on the dependent construct.

The target population comprises small and medium enterprises operating in Lagos State, Nigeria. The study uses the 91,097 SMEs reported for Lagos State in the 2021 MSME Survey by SMEDAN and NBS as the population for sample-size determination. Participation is not restricted to one industry because the objective is to capture the diversity of the Lagos SME ecosystem. Eligible respondents are owners, managers, or senior personnel with adequate knowledge of their enterprise's innovation practices and sustainability experience. This respondent criterion is intended to improve the organisational relevance of the data and reduce responses from individuals who may not possess sufficient information about strategic and operational decisions.

The Yamane sample-size formula is used at a 5 percent margin of error: $n = N/[1 + N(e^2)]$, where n represents the required sample, N is the population, and e is the margin of error. With $N = 91,097$ and $e = 0.05$, the calculation gives approximately 398.25 SMEs. The study therefore adopts a target sample of 400 enterprises, which is slightly above the calculated minimum and provides a practical round target for field administration. A stratified random sampling procedure is proposed so that major SME sectors are represented. Within each stratum, eligible enterprises are to be selected from the accessible sampling frame, and any limitations in the completeness of the statewide frame should be documented transparently.

Primary data are to be collected through a structured questionnaire. The instrument measures product innovation, process innovation, marketing innovation, organisational innovation, and SME sustainability using a five-point Likert response format ranging from Strongly Disagree to Strongly Agree. The questionnaire also includes demographic and enterprise information. Items are adapted from innovation and sustainability scales cited in the dissertation and adjusted where necessary to the Lagos State SME context. Before the main survey, the instrument is expected to undergo pilot testing with SMEs outside the final sample so that ambiguous wording can be corrected and the suitability of the items can be assessed.

Validity is addressed at both content and construct levels. Face and content validity are established through expert review to determine whether the instrument is clear and adequately represents the conceptual domains of the five constructs. Construct validity is assessed within the PLS-SEM measurement model through indicator loadings, average variance extracted, and discriminant validity procedures. Reliability is evaluated through Cronbach's alpha and composite reliability, with coefficients around 0.70 or above generally treated as acceptable subject to theoretical relevance and the overall measurement context. Decisions to retain or remove poorly performing indicators should be theoretically justified rather than based solely on mechanical statistical thresholds.

Partial Least Squares Structural Equation Modelling using SmartPLS is specified as the main analytical technique. PLS-SEM is suitable because the model contains several latent constructs measured with multiple questionnaire items and requires simultaneous assessment of the measurement model and structural relationships. Before estimation, the data should be screened for coding errors, missing values, unusual response patterns, and general suitability for analysis. Descriptive statistics can be used to summarise respondent and enterprise characteristics before the measurement and structural models are evaluated.

The measurement model is assessed before hypothesis testing. Indicator reliability is examined through outer loadings, internal consistency through Cronbach's alpha and composite reliability, convergent validity through average variance extracted, and discriminant validity through the Heterotrait-Monotrait ratio and related diagnostics. After acceptable measurement quality is established, the structural model is assessed using path coefficients, bootstrapped t statistics, p values, confidence intervals, the coefficient of determination, effect sizes, collinearity diagnostics, predictive relevance, and selected model-fit statistics. At the 5 percent significance level, a p value below 0.05 provides evidence for rejecting the corresponding null hypothesis.

The structural model specifies SME sustainability as the endogenous construct and the four innovation dimensions as exogenous constructs. Hypothesis one tests the path from product innovation to SME sustainability; hypothesis two tests process innovation; hypothesis three tests marketing innovation; and hypothesis four tests organisational innovation. The interpretation should distinguish statistical significance from substantive importance. A significant but small path coefficient may have different managerial implications from a large effect, while an insignificant result should not be interpreted as proof that a particular innovation dimension is universally unimportant. The study should also interpret the collective explanatory power of the model through R^2 and the predictive contribution of the constructs through relevant effect-size and prediction statistics.

Ethical considerations are integral to the field procedure. Participation should be voluntary, respondents should be informed that the study is for academic purposes, and confidentiality should be maintained. No respondent should be compelled to disclose information that could expose commercially sensitive details. Data should be used only for the stated research purpose and stored in a manner that limits unauthorised access. These procedures are important because SME owners and managers may be cautious about providing information relating to internal practices, performance, and strategic decisions.

The choice of PLS-SEM is also consistent with the study's comparative objective. Because each innovation dimension is represented by multiple observed items, analysing simple summed scores through separate regressions would ignore measurement error and would not assess whether the items adequately represent the latent constructs. PLS-SEM

permits the researcher to evaluate measurement quality and structural relationships within the same modelling framework. It also allows the relative path coefficients and effect sizes of the four predictors to be compared. This is particularly useful for managerial interpretation because the study is concerned not only with whether innovation matters, but with which dimension appears to make the strongest contribution to SME sustainability after the other innovation dimensions are represented in the model.

Because all principal constructs are measured through the same questionnaire, procedural and statistical attention to common method bias is also important. The instrument should use clear, non-leading wording, assure respondents that there are no preferred answers, and separate construct sections sufficiently to reduce mechanically consistent responses. During analysis, unusual response patterns and collinearity diagnostics should be examined alongside the measurement model. The use of owners, managers, or senior personnel as respondents is appropriate because these participants are expected to possess enterprise-level knowledge, but the final report should acknowledge that self-reported measures may contain recall error or socially desirable responses. These precautions strengthen the transparency of the design and are consistent with the study's emphasis on interpreting PLS-SEM estimates as evidence of association within the cross-sectional Lagos State sample rather than as proof of long-term causation (Podsakoff et al., 2013).

4.0 RESULT AND DISCUSSION

The empirical results stage of the study is designed to report both the quality of the measurement model and the effects of the four innovation dimensions on SME sustainability. . The tables for indicator loadings, reliability, convergent validity, discriminant validity, structural paths, R^2 , f^2 , VIF, model fit, and Q^2 are left for completion after field data are analysed. It would therefore be methodologically inappropriate to insert numerical coefficients, p values, or hypothesis decisions that are not supported by the dataset. This section consequently presents the reporting and interpretive framework that will govern the final analysis.

The first stage of the results should establish measurement adequacy. Each construct should be examined for indicator reliability, internal consistency, convergent validity, and discriminant validity. Strong measurement quality would indicate that the questionnaire items provide a defensible representation of product innovation, process innovation, marketing innovation, organisational innovation, and SME sustainability. Where indicators have weak loadings, removal should be considered only when doing so is theoretically defensible and improves the overall measurement model. The reporting should avoid deleting indicators solely to maximise statistics because such a procedure can narrow the conceptual meaning of the construct.

The second stage should report the structural paths from the four innovation dimensions to SME sustainability. For each hypothesis, the final table should present the path coefficient, standard error, t statistic, p value, confidence interval, and decision on the null hypothesis. A positive and statistically significant product innovation path would indicate that the introduction or improvement of products and services is associated with stronger sustainability outcomes among Lagos SMEs. Such a result would be consistent with the general empirical argument that product renewal helps firms respond to changing customer preferences and preserve market relevance. If the coefficient is insignificant, the discussion should consider

whether resource limitations, weak commercialisation, or insufficient complementary capabilities may prevent product innovation from translating into sustainability.

For process innovation, a positive significant result would suggest that improved production, delivery, workflow, logistics, or digital operating systems strengthen sustainability through efficiency, quality, speed, and resilience. This interpretation would be broadly consistent with Nigerian evidence that links process innovation with customer retention and SME performance (Akinwumi, 2022; Makinde et al., 2021). An insignificant result would require attention to implementation cost, employee capability, the maturity of the adopted technologies, and the possibility that process benefits need more time to affect the broader sustainability construct than can be captured in a cross-sectional design.

A significant marketing innovation path would imply that new methods of promotion, distribution, pricing, positioning, customer engagement, or digital market access materially contribute to sustainability. The substantive interpretation should go beyond online visibility and examine whether innovative marketing improves durable customer relationships, market reach, and the firm's ability to generate value. If the result is statistically weak, the discussion should consider whether marketing activities are disconnected from product quality, fulfilment capacity, customer analytics, or revenue conversion. Social Exchange Theory would be particularly relevant because customer trust, feedback, reciprocity, and repeated exchange can determine whether marketing innovation produces sustainable relationships.

A positive significant organisational innovation result would indicate that flexible structures, improved management practices, knowledge sharing, employee participation, and redesigned routines strengthen the capacity of SMEs to adapt and survive. Institutional Theory provides a useful explanation because firms often adjust structures and routines in response to technological, competitive, regulatory, and professional pressures. Social Exchange Theory complements this by showing how employee and stakeholder cooperation can support organisational change. An insignificant coefficient would require examination of leadership capability, resistance to change, implementation quality, and the time lag between internal restructuring and observable sustainability outcomes.

Beyond the individual paths, the discussion should compare the relative size of the coefficients and effect sizes. This comparison is necessary because statistical significance alone does not identify the most managerially important innovation dimension. The R^2 for SME sustainability should show the proportion of variance collectively explained by product, process, marketing, and organisational innovation, while f^2 should indicate the incremental contribution of each predictor. VIF values should be used to confirm that severe collinearity is not distorting the coefficients, and Q^2 or a comparable prediction procedure should indicate whether the model has predictive relevance. Model-fit statistics such as SRMR may be reported as supplementary evidence rather than treated as the sole basis for judging model quality.

The overall discussion should then integrate the empirical pattern with the reviewed literature and theoretical framework. If all four innovation dimensions are significant, the evidence would support a complementary capability interpretation in which market-facing, operational, and organisational changes jointly sustain SMEs. If only some dimensions are significant, the findings would be more informative because they would identify where Lagos SMEs obtain the greatest sustainability value from innovation. Any non-significant path should be discussed as a context-specific empirical result rather than evidence that the innovation type has no value under all conditions. This disciplined approach protects the study from

overgeneralisation and ensures that the final recommendations flow directly from the observed Lagos State evidence.

Table 1: Hypothesis Reporting Framework

Hypothesis	Structural Path	Decision Rule	Current Status
H01	Product Innovation → SME Sustainability	Reject H0 when bootstrapped $p < .05$	Pending SmartPLS output
H02	Process Innovation → SME Sustainability	Reject H0 when bootstrapped $p < .05$	Pending SmartPLS output
H03	Marketing Innovation → SME Sustainability	Reject H0 when bootstrapped $p < .05$	Pending SmartPLS output
H04	Organisational Innovation → SME Sustainability	Reject H0 when bootstrapped $p < .05$	Pending SmartPLS output

Source: Adapted from the study methodology and Chapter Four result templates, 2025.

5.0 CONCLUSION AND RECOMMENDATIONS

Product innovation can renew customer value; process innovation can improve efficiency and operational resilience; marketing innovation can deepen market access and customer relationships; and organisational innovation can strengthen flexibility, learning, and coordination. The theoretical and empirical literature reviewed in the study generally supports a positive role for innovation, but it also shows that outcomes vary according to context, implementation quality, resources, market conditions, and complementary capabilities. The multidimensional model is therefore more analytically useful than a single aggregate innovation measure.

Four recommendation directions follow from the conceptual and reviewed evidence. First, SMEs should strengthen product development through systematic market research, customer feedback, testing, and commercialisation so that product innovation responds to identifiable demand. Second, process innovation should prioritise improvements that reduce avoidable cost, improve quality and speed, and strengthen operational resilience rather than technology adoption for its own sake. Third, marketing innovation should connect digital channels, customer analytics, and creative communication with measurable customer retention and revenue outcomes. Fourth, organisational innovation should promote flexible structures, employee participation, knowledge sharing, managerial learning, and technology-enabled coordination so that other forms of innovation can be implemented effectively.

Policy institutions and enterprise-support organisations should also recognise that innovation capability is not created by finance alone. Training, digital skills, market information, technology access, advisory support, collaborative networks, and institutional reliability can influence whether SMEs are able to convert innovative ideas into sustainable outcomes. Future research should extend the study beyond Lagos State, adopt longitudinal designs where possible, compare industries, and examine mediating or moderating variables such as digital capability, access to finance, environmental turbulence, entrepreneurial orientation, or market orientation. These extensions would deepen understanding of when and how innovation translates into long-term SME sustainability.

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