

Strategic Business Model and Sustainable Growth of Smes in an Emerging Economy

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Abstract

Understanding the interplay between strategic business model and sustainable growth of SMEs can guide the improvement of policies to boost the practicality and success of small and medium enterprises (SMEs). The aim of this research is to evaluate the effect of strategic business models on the sustainable growth of SMEs, alongside exploring the mediating influence of management support. This study employed a quantitative method, utilising a cross-sectional survey. Partial Least Squares Structural Equation Modelling (PLS-SEM), enabled by SMARTPLS software, was employed to test the formulated hypotheses. The study findings indicate that the strategic business model ensures an improved information technology, innovation, and management support, all contributing to the sustainable growth of SMEs. Also, it was found that management support partly mediates the relationship between business environment, innovation, and sustainable growth of SME. These pathways envision promoting social virtues within the owner-manager of enterprises. This research pioneers the

integration of diverse strategic business model components (such as the business environment, information technology, and innovation) alongside management support to examine their effects on the sustainable growth of SMEs, representing a novel contribution to the literature. This study contributes to existing knowledge on sustainable growth in small and medium enterprises by investigating the mediating influence of management support, grounded in upper echelon theory.

Keywords: Management support, SMEs PLS-SEM, Strategic business model, Sustainable growth

1. Introduction

Sustainability has evolved into a strategic priority due to differing global perceptions. Sustainable initiatives that promote new growth and enhance economic, social, and environmental outcomes have become critical. Therefore, for small and medium-sized enterprises (SMEs) to continue flourishing, they must succeed in meeting future demands for sustainable growth. The sustainable growth of SMEs can be defined as the approach and practical

application adopted by SMEs that accommodate ethical business practices in relation to local and global economic, social, and environmental factors. This principle implies a collective obligation to maintain cohesion among social, economic, and environmental factors, rather than prioritising profitability and short-term practices, to safeguard future generations (Murphy, 2013). A strategic business model demonstrates how an enterprise generates wealth, designs appropriate value, or ensures its sustainability by outlining how it interacts with the ecosystem and positions itself within the dynamic system (Klein, 2008). The fundamental goal of a strategic business model is to ensure that a firm's initiatives and approaches work in concert to create an innovative competitive advantage (Nimfa et al., 2021c), which is often regarded as more influential than interaction. This study considers three components of the strategic business model: the business environment, information technology, and innovation (Bezt, 2018; Nimfa, 2021b). Prior research has revealed mixed findings on the effect of the business environment as a component of business model innovation (Snihur et al., 2022). Similarly, research by Olaore et al. (2021) found no significant association between competitive strength and strategic business models (Olaleye, 2019). Conversely, studies by De Reuver et al. (2009) and Foss et al. (2017) found a direct, significant relationship between innovation and the propensity to engage in business model practices. Meanwhile, the business environment remains an external factor that influences an enterprise's strategic business model (Bezt, 2016). Accordingly, Teece (2018) argues that dynamic capabilities enable firms to create innovative value by aligning with environmental drivers and adopting sound business practices. Notably, there is a dearth of empirical research on the link between strategic business models and sustainable growth among SMEs, particularly in the Nigerian context (Nimfa et al., 2021a). Furthermore, adopting a strategic business model within SMEs is essential for fostering management enthusiasm to endorse product innovation and prioritise customer-centric strategies to achieve sustainable growth (Daxhammer et al., 2019). Additionally, securing management support and upper-echelon assurance for the authentic

implementation of such innovative approaches are crucial for sustainability (Green, 1995; Dai et al., 2014). Sustained management support can accelerate the sustainable growth of SMEs by fostering a business environment conducive to innovation commitment and ensuring the effective implementation of standard information technology (Mann, 2020). However, there has been limited research on the relationship between strategic business models and the sustainable growth of SMEs in developing countries such as Nigeria. Moreover, management support must be addressed as a crucial dynamic affecting the relationship between strategic business model dimensions (business environment, innovation, and information technology) and the sustainable growth of SMEs (Dai et al., 2014). This research, therefore, aims to assess the multifaceted relationship between strategic business model dimensions and the sustainable growth of SMEs in Nigeria. Furthermore, the study investigates the mediating effect of management support on the relationship between strategic business models and the sustainable growth of SMEs. The remaining sections of this study are structured as follows: a review of relevant literature and hypotheses development, research methods, data analysis and results, discussion, conclusions, and references.

2. Relevant Literature and Hypotheses Development

1. Theoretical Background

The sustainable growth of SMEs depends on a strategic business model, yet there is a limited availability of robust and appropriate frameworks (Mann, 2020; Nimfa, 2021b). Given resource scarcity in developing economies, SME management must adopt a sustainability-oriented mindset (Rasoolimanesh et al., 2024). This research contributes to the discussion by highlighting that SME managers, drawing on upper echelon theory, assess their circumstances through the lens of necessity to ensure the sustainable growth of their enterprises. Upper echelon theory posits that diverse perspectives on strategic scenarios stem from variations in comprehension, values, mindsets, abilities, and other observable characteristics among top-tier executives (Hooi et al., 2016). This theory enriches the discourse by integrating managerial

principles with business outcomes, suggesting that comprehensive sustainable growth strategies and the pursuit of novel knowledge influence the decision-making of exemplary executives (Hambrick & Mason, 1984). The enduring relevance of upper echelon theory remains evident today, as SME owners exert a crucial influence on how their companies implement sustainable growth strategies (Bonelli, 2014; Hambrick, 2007). Their decisions significantly shape the strategic business model, thereby fostering the sustainable development of SMEs (Shaik et al., 2024). Additionally, this study examines management support through the lens of upper echelon theory, specifically investigating the effects of three strategic business model dimensions on the sustainable growth of SMEs. The actions of SME owners play a pivotal role in shaping the strategic business model, which in turn supports sustainable growth (Kılıç & Atilla, 2024; Bharadwaj et al., 2013). Furthermore, this study evaluates management support from an upper echelon theory perspective, with a particular focus on how three strategic business model dimensions' influence sustainable growth of SME outcomes.

2.2 Business Environment and Sustainable growth of SMEs

The use of a pivotal design business environment is a priority in developing a strategic business model and achieving a tactical advantage in the enterprise market (Daidj, 2015). According to Vu and Nguyen (2021), a better local business environment serves as an enabler for small and medium-sized enterprises. An instance where enterprises must respond to dynamic requirements and trends within the business ecosystem can be observed in rising cost pressures, rapid reversal threats, and the ongoing need for differentiation and competitiveness (Belyaeva, 2018). The business environment, through the introduction of new versatile tools such as digital technology and global knowledge sharing, facilitates the modern world economy in shaping specific socio-cultural patterns (Bezt, 2016). Additionally, modernisation has stimulated the growth of a quantifiable market climate, promoted closer collaboration among SMEs worldwide, and fostered systemic effects on the environment. The enterprise foundations of upper echelon theory suggest that a

distinct commercial environment, values, skills, procedures, managerial structures, and strategic decision-making processes can enhance an enterprise's ability to sustain growth (Hambrick, 2016). Correspondingly, it was postulates that:

H₁: Business environment has a significant influence on the sustainable growth of SMEs.

2.3 Information Technology and Sustainable Growth of SMEs

The relationship platform between the strategic business model and information technology enables the rapid development of strategic creative products, revenue generation processes, unique interaction channels, and enterprise growth (Walsh, Murphy & Horan, 2020; Wu, Guo, Huang, Liu & Xiang, 2018; Teece, 2010). Information technology is a necessary capability that SMEs must continuously utilise to enhance an efficient business model that can sustain firms, whether small, medium, or large. In various ways, information technology can effectively provide a competitive edge, as the same mechanisms and technologies are leveraged for strategic advantages within small and medium-sized enterprises. Information technology can improve products and/or services to align with the strategic business model of SME businesses (Oni, 2021; Betz, 2018). Consequently, business owners acknowledge that information technology is a significant predictor of strategic business model alignment, as well as the operation of conventional information technology and network access (Chao & Chandra, 2012; Hock-Doepgen et al., 2020). Previous studies have overlooked the use of information technology as a strategic business model dimension in the context of SME sustainable growth. Hence, this study posits that:

H₂: Information technology is significantly related to sustainable growth of SMEs.

2.4 Innovation and Sustainable Growth of SMEs

The link between the strategic business model and the rapid shift in innovation is often a key component of modern, culturally dynamic business operating conditions and can drive value creation for small and medium enterprises (Ibidunni, 2024; Betz, 2018,

2002). Enterprises need to innovate their strategic business models because systems now require updates, processes need to be redesigned, and communication channels must become faster (Lindgren & Abdullah, 2013). Innovation involves the development of new products and services, alongside their corresponding technologies, emerging markets, expansion strategies, and incentives tailored to meet the needs of users and customers. Additionally, an SME's strategic business model demonstrates perseverance in transforming ideas into reality and identifying new opportunities (Pucci, Nosi & Zanni, 2017; Corradini, Demirel & Battisti, 2016). Similarly, innovation has been used as a measure to assess the strategic business model in the SME framework, aligning with previous studies (Yadav et al., 2018; Olaleye, 2019; Dentchev, 2021; Betz, 2016; Mann, 2020). Expanding on the preceding discussion, this study proposes the hypothesis that:

H₃: Innovation is significantly associated with sustainable growth of SMEs.

2.5 Business Environment and Management Support

In today's fast-paced and competitive business environment, SMEs must be practical and results-oriented to maintain a leading position in the market. The dynamic nature of the business landscape demands high-quality outcomes from strategic processes and well-planned approaches to sustain competitiveness in emerging markets (Dubey et al., 2020). Consequently, pressures from investors, customers, and clients drive suppliers and management to adopt new tools to reconfigure their capabilities (Ancarani & Di Mauro, 2024). Scholars suggest that evolving business trends are influencing organisational processes, particularly in management; however, their impact on management support remains under-researched (Nudurupati et al., 2021). Furthermore, Bashir et al. (2023), in their analysis of 280 Saudi Arabian SMEs, found that managerial ties positively influence enterprise performance. This suggests that fostering strong managerial relationships can significantly enhance SME performance, underscoring the importance of strategic partnerships for business success. Similarly, Yu et al. (2022) observed that perceived top

management team capabilities and support indirectly drive SME management innovation by promoting and facilitating employee knowledge sharing. Despite these insights, the relationship between the business environment and management support remains insufficiently explored, highlighting the need for further investigation. Accordingly, this research proposes that:

H₄: Business environment is significantly related to management support.

2.6 Information Technology and Management Support

Enterprises equipped with information technology skills and strong managerial support enhance effective digital adoption leadership. Zhang and Bu (2024) indicate that top information technology managers play a positive role in facilitating SMEs' digital transformation, particularly in non-state-owned enterprises and those operating in highly market-oriented areas. Similarly, Liu et al. (2025) find that industrial robot applications promote business green innovation; however, their impact is not equally significant across all corporations engaged in green initiatives. Recent studies have shown that chief executive officers actively promote information technology, significantly driving digital improvement within firms (Zhao et al., 2024). This suggests that firms with strong information technology leadership can leverage emerging technologies to enhance customer experiences and drive sustainable growth. Therefore, SME managers must foster digital enterprises, continuously invest in information technology infrastructure, and cultivate a technology-oriented mindset to maintain a competitive advantage (Yusliza et al., 2019). In this context, the relationship between information technology and management support has proven to be a valuable mechanism for the sustainable growth of SMEs. Hence, it is proposed that:

H₅: Information technology is significantly linked to management support.

2.7 Innovation and Management Support

The connection between strategic business model innovation and management support has been explored in previous studies (e.g., Malewska et al., 2024; Betz, 2002; Shaik et al., 2024; Hock-Doepgen

et al., 2025; Al-Tabbaa & Zahoor, 2024). This relationship highlights a critical perspective on business, emphasising the need for firms and their managerial teams to understand and respond to broader changes through a holistic and dynamic approach to business operations (Markovic & Tollin, 2021). Similarly, Hong et al. (2024) asserts that key resources for driving innovation include budget allocation, awareness, management support capabilities, a strong cultural mindset, and a firm commitment. This suggests that effective managerial practices establish a strategic direction, while a dedicated culture fosters adaptability and flexibility. Furthermore, management support plays a vital role in ensuring that innovation and creativity are effectively realised within enterprises (Bunner et al., 2020; Ma et al., 2021; Lo et al., 2016). Additionally, management provides strategic direction, essential resources, and a conducive environment for experimentation and risk-taking (Khan & Zaman, 2020). Encouraging an innovation-driven culture requires leaders to cultivate an environment that values new ideas and continuous improvement. However, despite these insights, the interaction between innovation and management support remains an unresolved area in the literature. Therefore, this study proposes that:

H₆: Innovation is significantly associated to management support.

2.8 Management support and sustainable growth of SMEs

In today's dynamic landscape, it is imperative for managerial support to be directed towards crafting business policies that foster sustainable growth, thereby achieving superior economic, social, and environmental objectives. At the same time, enterprises should strive to thrive while addressing the growing demand for sustainable practices (Le & Ikram, 2022). Furthermore, SMEs must effectively manage ideas, resources, people, materials, and stakeholders encompassing not only technical expertise but also the competitive advantage of innovation. In this context, management support for the sustainability of SMEs would be highly beneficial to enterprises. Previous research has found that management support has a significant

relationship with SME performance (Lo et al., 2016; Nimfa, 2021a). However, prior literature has largely overlooked the direct link between management support and the sustainable growth of SMEs. Hence, the present study asserts that management support is crucial for business success and serves as a key driver of sustainable SME growth. This study proposes testing the following hypothesis:

H₇: Management support is significantly linked to sustainable growth of SMEs.

2.9 Mediating Role of Management Support

Management support may serve as a mediating mechanism within a strategic business model to stimulate the sustainable growth of SMEs (Nimfa et al., 2021a). Previous research has shown that management support mediates the relationship between green production and environmental sustainability (Omoush, 2021; Bunner et al., 2020). Furthermore, using upper echelons theory, researchers have recognised the influence pathway of management support (Ma et al., 2021). Findings indicate that top management support mediates the effect of market pressure on green public procurement and environmental certification practices (Ma et al., 2021). Empirical evidence has revealed that upper management support has a significant and positive effect on affiliation and trust (Bunner et al., 2020). However, no statistically significant link has been found between top management support and knowledge sharing (Lo, Tian, & Ng, 2021; Molina-Castillo et al., 2019). In a related perspective, Hendricks and Mwapwele (2014) noted that as e-commerce continues to grow, small businesses are increasingly using a variety of platforms to attract potential consumers. Betz (2002) highlighted that a corporation's strategic business model summarises the policies that prepare it for future performance. Gordijn et al. (2006) and Solaimani and Bouwman (2012) analysed various perspectives in the literature and categorised the usage of strategy in business models into three areas: (i) e-business and the application of information technology in businesses; (ii) strategic initiatives, including value creation, competitiveness, and firm performance; and (iii) innovation and technology leadership (Zott, Amit, & Massa, 2011). Past research suggests that supportive managers play a

crucial role in fostering creative work attitudes (Khan & Zaman, 2020; Lahuddin et al., 2018). However, previous studies have largely overlooked the mediating effect of management support in the relationship between strategic business models and the sustainable growth of SMEs. Hence, the following hypotheses are posited:

H₈: The effect of business environment and sustainable growth of SMEs is mediated by management support.

H₉: The effect of information technology and sustainable growth of SMEs is mediated through management support.

H₁₀: The effect of innovation and sustainable growth of SMEs is mediated through management support.

2.10 Research Framework

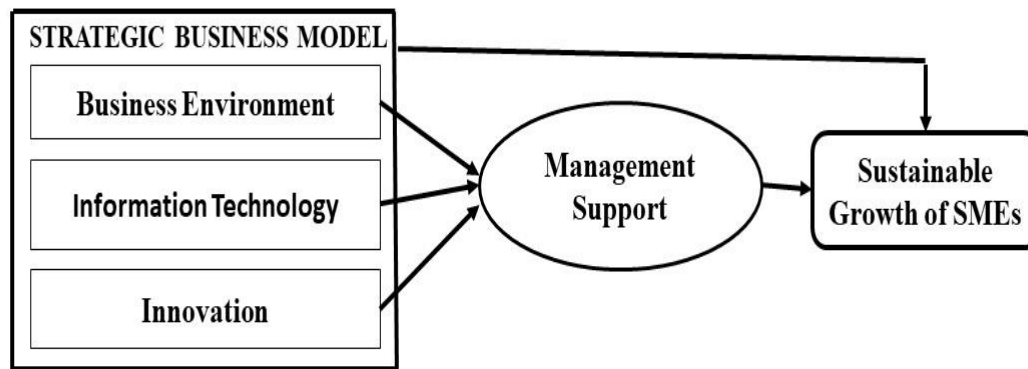


Figure 1: Conceptual Framework of Strategic Business Model and Sustainable Growth of SMEs
Source: Authors Design (2025)

3. Research Methods

This study employed a quantitative methodology, using a cross-sectional survey. The study targeted 368 registered consumer product manufacturing SMEs from SMEDAN in Nigeria, with records provided by the SMEDAN administration unit. Owners were invited to participate voluntarily and

were assured that all responses would remain anonymous and confidential. To ensure the reliability and validity of the data, follow-up reminder messages were sent via email, an essential approach in developing economies such as Nigeria. The study collected 215 responses through the survey questionnaire, achieving a response rate of 58.42%, which is considered acceptable in managerial studies related to SMEs (Kotásková et al., 2020). A sample characteristics illustration is presented in Table 1, alongside the essential value limits. In this research, the rule of thumb was applied

to evaluate a suitable PLS-SEM statistical power for the minimum sample size (Soper, 2020). This technique is appropriate because Partial Least Squares Structural Equation Modelling (PLS-SEM) is particularly effective for predictive modelling in empirical studies and is well-suited for research with small-to-medium sample sizes (Hair et al., 2019). Furthermore, PLS-SEM via SMARTPLS does not require strict normality test assumptions and can effectively handle complex models with multiple latent variables (Sarstedt et al., 2021). The estimation technique follows the rule of thumb, as recommended by Cohen (1992), which suggests that the minimum sample size should be determined based on statistical power considerations, the number of predictors, and the estimated effect size to ensure consistent and generalisable results (Soper, 2020; Kock & Hadaya, 2018). Accordingly, the recommended minimum sample size is 100 (using a statistical power of 0.80, four predictors, and an effect size of 0.05). The final sample size collected and used for data analysis was 215, which exceeded the required minimum, as determined using Soper's online calculator and subjected to analysis.

3.1 Measurement of variables

The strategic business model was operationalized using three dimensions adapted from Nimfa (2021a): business environment (five items, Cronbach's $\alpha = 0.78$), information technology (five items, Cronbach's $\alpha = 0.95$), and innovation (five items, Cronbach's $\alpha = 0.86$). Management support was measured as a unidimensional construct using a five-item scale adapted from Omoush (2021) and Lo, Wang, Wah, and Ramayah (2016), with a Cronbach's α of 0.84. The sustainable growth of SMEs was measured using a unidimensional five-item scale adapted from Nimfa (2021a) and Eggers et al. (2013), with a Cronbach's α of 0.81. All items across constructs were measured using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

3.3 Test of Common method bias

To mitigate potential common method bias (CMB), several procedural remedies were adopted in line with Podsakoff et al. (2012). First, multiple items were employed for each construct to ensure balanced

measurement. Second, the questionnaire was designed without "correct" or "incorrect" answers, allowing respondents to provide honest and uninfluenced feedback anonymously. Third, non-conceptually related items were interspersed throughout the survey to reduce the likelihood of respondents providing uniform responses across all questions. In addition to these procedural measures, statistical tests were conducted to assess potential CMB. Previous studies have highlighted that the use of indicator variable approaches can sometimes produce biased associations between constructs (Kock et al., 2015). Therefore, this study employed Variance Inflation Factor (VIF) analysis to evaluate multicollinearity among all predictor variables (Gokmen et al., 2022). The results indicated that all VIF values were below the recommended threshold of 3.3 [see Table 4] (Kock et al., 2015), demonstrating that multicollinearity was not a concern in the model. These findings confirm that the data are suitable for structural model testing and that CMB is unlikely to significantly bias the results (Kock, 2017; Podsakoff et al., 2012; Hair et al., 2014).

3.4 Demographic Profile

Table 1 Demographic Profile

Item	Characteristics	Frequency	Percentage
Incorporation	5 years & below	58	27
	5 years & above	157	73
	Total	215	100
Hired employees	10 to 49		54.4
	50 to 199		45.6
	Total	215	100
Assets Based	5 million Naira to < 50 million Naira	128	59.5
	50 million Naira to < 500 million Naira	87	40.5
	Total	215	100
Qualification Obtained	Bachelor Degree and above	117	54.4
	Degree/Skilled Non- Bachelor	98	45.6
	Total	215	100
Enterprise Responsibilities	Owner/Founder	82	38.1
	Senior Management Employee	133	61.9
	Total	215	100

4 Data Analysis and Results

The research model comprises reflective constructs and seeks to examine the key drivers of sustainable growth in SMEs within the context of strategic business models (Hair et al., 2018). Accordingly, Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed to analyse the data, using SmartPLS version 3.3.8. The subsequent statistical analysis was conducted in two stages, including the assessment of the measurement model to establish reliability and validity, followed by the evaluation of the structural model to test the hypothesized relationships.

4.1 Descriptive Statistics

Table 2 presents the descriptive statistics for all study constructs. The dataset contained no missing values and no detectable outliers. Kurtosis values ranged

from -3.299 to -2.843, while skewness values varied between -2.065 and -1.484. According to the literature, acceptable thresholds for kurtosis and skewness for assuming normality are generally between -3 and +3 for skewness and -10 and +10 for kurtosis (Kline, 2005). In this case, several values fell outside the recommended range, indicating that the data did not satisfy the assumption of normality. Given the non-normal distribution of the data, Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed using SmartPLS version 3.3.8, which is robust to non-normal data (Hair et al., 2019). Table 2 provides a summary of the descriptive statistics for each construct, including means, standard deviations, skewness, and kurtosis values.

Table 2: Constructs Descriptive Statistics

Variables	Mean	STD	Excess Kurtosis	Skewness	Cronbach's Alpha
1. Strategic Business Model					
i. Business Environment	3.121	1.129	-3.299	-2.065	0.793
ii. Information Technology	3.242	1.212	-3.246	-1.484	0.823
iii. Innovation	3.240	1.161	-2.843	-1.510	0.811
2. Management Support	3.133	1.094	-2.891	-1.769	0.732
3. Sustainable Growth of SMEs	3.115	1.140	-3.148	-1.619	0.808

4.2 Measurement Model Assessment

The indicator loadings were evaluated to assess the reliability and validity of the constructs. Given that the data were not normally distributed, PLS-SEM was appropriate for hypothesis testing and model evaluation, implemented using SmartPLS version 3.3.8 (Hair et al., 2021; Cepeda-Carrión et al., 2022). The factor loadings of all latent variables ranged from 0.711 to 0.817, exceeding the minimum recommended threshold of 0.70 and indicating satisfactory item reliability (Hair et al., 2019). Internal consistency reliability was assessed using composite reliability (CR), with values ranging from 0.832 to 0.883, surpassing the recommended benchmark of 0.70 and confirming the constructs' reliability (Hair et al., 2019; Awais et al., 2023). Convergent validity was examined using average variance extracted (AVE), which ranged from 0.554

to 0.653, exceeding the minimum threshold of 0.50 and demonstrating adequate convergent validity for all constructs (Hair et al., 2019; Jak et al., 2021) [Table 3]. Discriminant validity was assessed using the Heterotrait-Monotrait (HTMT) ratio, with all values falling below the recommended threshold of 0.85, confirming that the constructs are empirically distinct (Behl et al., 2022; Hair et al., 2019) [Table 4]. In this study, the strategic business model was conceptualized as a multidimensional construct, while management support and sustainable growth of SMEs were treated as unidimensional constructs, consistent with theoretical justification and prior literature.

Table 3: The discriminant validity via HTMT

	BE	IT	Innov	MS	SGSMEs
BE					
IT	0.820				
Innov	0.737	0.808			
MS	0.664	0.793	0.793		
SGSMEs	0.760	0.816	0.619	0.752	

Table 4. VIF Inner Values

	MS	SGSMEs
BE	3.067	3.258
IT	3.112	3.236
Innov	3.177	3.215
MS		3.246

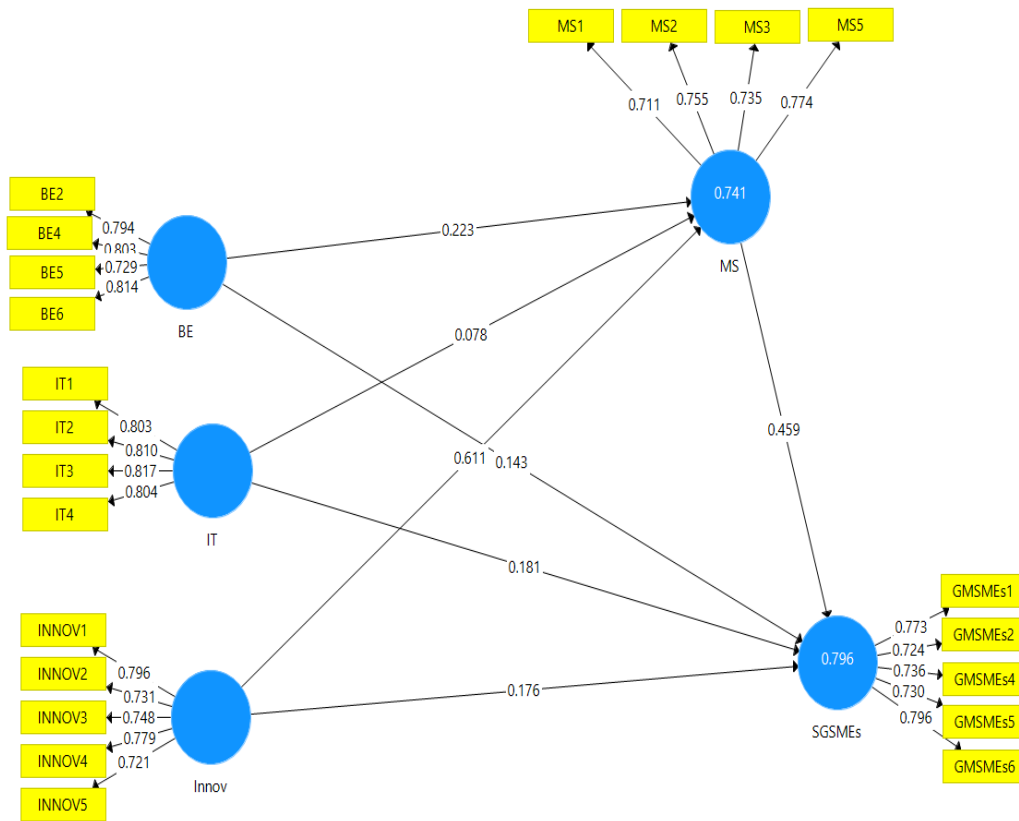


Figure 2 Measurement model

4.2 Structural Model Assessment

The structural model was evaluated using R^2 , effect size (F^2), goodness-of-fit (SRMR), Stone-Geisser's Q^2 , and path coefficients to assess the predictive relevance and strength of the proposed relationships (Hair et al., 2019; Nawangsari et al., 2022). Multicollinearity was examined using the Variance Inflation Factor (VIF), with all predictor values below 3.3, indicating that collinearity was not a concern in the model (Kock, 2015) [Table 4]. The R^2 values of the endogenous constructs indicate the model's explanatory power. Management support and sustainable growth of SMEs showed R^2 values of 0.741 and 0.796, respectively, demonstrating substantial in-sample predictive ability (Hair et al., 2019). The effect size (F^2) was assessed according to Cohen's (1988) benchmarks: small ($F^2 \geq 0.02$), medium ($F^2 \geq 0.15$), and large ($F^2 \geq 0.35$). The results showed that the strategic business model dimensions—business environment ($F^2 = 0.031$),

information technology ($F^2 = 0.027$), and innovation ($F^2 = 0.027$)—had small but meaningful effects on sustainable growth, while management support had a large effect ($F^2 = 0.267$). For management support as an endogenous construct, the business environment ($F^2 = 0.062$) and innovation ($F^2 = 0.344$) had small-to-large effects, whereas information technology ($F^2 = 0.004$) had negligible impact, suggesting limited utilization of IT by management in SMEs. The standardized root mean square residual (SRMR) value was 0.061, indicating good model fit (Jöreskog & Sörbom, 1981; Pavlov, Maydeu-Olivares & Shi, 2021). Additionally, Stone-Geisser's Q^2 values were examined to assess predictive relevance. The Q^2 values for management support ($Q^2 = 0.124$) and sustainable growth of SMEs ($Q^2 = 0.236$) indicate small-to-medium predictive significance, confirming the model's capacity to predict endogenous constructs effectively.

4.2.1 Hypothesis Testing: direct effects

This study adopted a bootstrapping process with 5,000 samples to assess the statistical interpretation of all the path coefficients in the model. The research

initiative used a 5% level of significance ($= 0.05$), and a one-tailed test was applied for assessing statistical significance. Table 5 displays the model's hypothesised link path coefficients, bootstrapping values, and T-values. The analysis indicated that the business environment had a significant negative effect on the sustainable growth of SMEs ($\beta = 0.143$, $t = 1.759$, $p > 0.05$). Thus, the data did not support H1. This result agrees with the views of Chatzistamoulou & Tyllianakis (2022) who opine that the unstable business environment has made small and medium enterprises more susceptible to sustainable development issues generally. Information technology has a positive effect on sustainable growth of SMEs ($\beta = 0.181$; $t = 2.035$, $p < 0.05$). Hence, the data confirmed H2. This result is consistent with preceding studies (like, Sari et al., 2024; Adegbite, 2024), who underscores the thrilling relevance of digital technology in supporting efficiency, market accessibility, and enterprise resilience. Furthermore, Rana et al. (2022) emphasis that digital inclusion positively contributes to SMEs sustainability by stimulating financial and active productivity. On the other hand, Oguna (2024) advised that information technology adoption alone has been insufficient unless strong support from management commitment and workforce training would foster sustainable growth of SMEs. Innovation was significantly related to the sustainable growth of SMEs ($\beta=0.176$, $t= 1.961$, $p < 0.05$). Thus, the data supported H3. This outcome aligns with (Kong, Xiang & Zhu, 2024) who found that innovation-driven SMEs exhibit higher long-term sustainability. Innovation-driven progress fosters teamwork and resource effectiveness, stimulating competitive business environment and in the long run boosting green innovation (Chen & Yu, 2024). Also, Osei and Zhuang (2020) maintained that SMEs leveraging practice and product innovation expand their competitive advantages, which further enhance enterprise resilience. This finding is consistent with Teece (2018), who submits that business investing in innovation-driven practices can constantly adjust and flourish in changing business environments. Furthermore, the business environment has a direct influence on management support ($\beta = 0.223$; $t=2.443$, $p < 0.05$), accordingly, the data supported H4. A significant relationship was

found ($\beta = 0.223$; $t=2.443$, $p < 0.05$), supporting H4. This finding is reinforced by (Latifi, et al., 2025; Zahra & Wright, 2011), who believe that a stable business environment boosts proactive management practices. Scott (2014) argues that external forces, such as government new policies and market situations, stimulate managerial results and strategic benefits. Though, disparities in business environment influences across businesses show the need for industrial -specific searches (Kshetri, 2022). The results showed that information technology had no direct effect on management support ($\beta = 0.078$, $t = 0.918$, $p > 0.05$). As a result, the data did not confirm H5. Accordingly, this result contradicts research by Chatterjee et al. (2024), posits that information technology encourages strategic decision-making through enhancing managerial availability to information and data. Thus, it is confirmed that information technology adoption in SMEs usually do not have a strategic alliance (Ogutu, 2024), that partial technical expertise thwarts managerial support. This implies that while information technology is valuable, its influence on management depends on the enterprise's digital satisfaction and leadership flexibility. Similarly, innovation was reported to have a significant and strong effect on management support ($\beta=0.611$, $t= 7.918$, $p < 0.05$). Accordingly, the data fully support H6. This finding is in tandem with the opinions of Alayo et al. (2021), who explain that innovative enterprises are inclined to have proactive and strong leadership support. Equally, this result supports the upper echelon theory (Hambrick & Mason, 1984), which posited that innovation-oriented leadership promotes strategic alignment. Thus, management support has a significant influence on the sustainable growth of SMEs $\beta= 0.459$, $t= 6.374$, $p < 0.05$). Consequently, the data support H7. This finding is supported by Gabelaia, (2025), who advocates the roles of transformational leaders in sustainable entrepreneurship. Accordingly, (Yusliza et al., 2020, 2019) emphasis that resilient management support can promote resilience, and long lasting strategic planning for businesses. Likewise, this means that firms with robust leadership and managerial resources are healthier for sustainable growth.

Table 5 Standardised Direct Relationship

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics	P Values
BE -> SGSMEs	0.143	0.152	0.082	1.759	0.079
IT -> SGSMEs	0.181	0.181	0.089	2.035	0.042
Innov -> SGSMEs	0.176	0.178	0.09	1.961	0.050
MS -> SGSMEs	0.459	0.45	0.072	6.374	0.000
BE -> MS	0.223	0.228	0.091	2.443	0.015
IT -> MS	0.078	0.08	0.085	0.918	0.358
Innov -> MS	0.611	0.605	0.077	7.918	0.000

4.2.2 Hypothesis Testing: Indirect Effects

Table 6 shows the partial mediation of management support between the business environment and sustainable growth of SMEs ($\beta = 0.102$, $t = 2.506$, $p < 0.05$). Therefore, H8 was supported by the data. However, management support mediating the connection between information technology and sustainable growth of SMEs proved unsuccessful ($\beta =$

0.036, $t = 0.916$, $p > 0.05$). Therefore, H9 was not supported by the data. Furthermore, the findings reveal a partial mediation of management support in the relationship between innovation and sustainable growth of SMEs ($\beta = 0.280$, $t = 4.550$, $p < 0.05$). Therefore, H10 was fully supported by the data.

Table 6 Standardised Indirect Effect

	Original Sample	Sample Mean	STDEV	T Statistics	P Values	Mediation effect
BE -> MS -> SGSMEs	0.102	0.101	0.041	2.506	0.012	Complementary-partial mediation
IT -> MS -> SGSMEs	0.036	0.036	0.039	0.916	0.360	No mediation
Innov-> MS -> SGSMEs	0.280	0.273	0.062	4.550	0.000	Complementary-partial mediation

Model Fit and Total Effects

Table 7 presents a comparison of alternative models alongside the proposed model, demonstrating that the hypothesized model provides the best fit to the observed data (Hair et al., 2014). This confirms that the structural relationships specified in the proposed model most accurately represent the underlying patterns within the dataset. The total effects of the hypothesized model, including both direct and indirect relationships among strategic business

model dimensions, management support, and sustainable growth of SMEs, are summarized in Table 8. These results provide a comprehensive view of the overall influence of each predictor on the outcome constructs, highlighting the key pathways through which strategic business model components drive sustainable growth.

Table 7 Model Fit		
	Saturated Model	Estimated Model
SRMR	0.061	0.061
-d_ ULS	0.935	0.935
d_ G	0.53	0.53
Chi-Square	575.637	575.637
NFI	0.792	0.792

4.2.3 Total Effect

Table 8 Total effects of the hypothesised model

	Original Sample	Sample Mean	STDEV	T Statistics	P Values
Business environment → sustainable growth of SMEs	0.143	0.152	0.082	1.759	0.079
Information technology → sustainable growth of SMEs	0.181	0.181	0.089	2.035	0.042
Innovation → sustainable growth of SMEs	0.176	0.178	0.09	1.961	0.050
Management support and sustainable growth of SMEs	0.459	0.45	0.072	6.374	0.000
Business environment →management support	0.223	0.228	0.091	2.443	0.015
Information technology → management support	0.078	0.08	0.085	0.918	0.358
Innovation →management support	0.611	0.605	0.077	7.918	0.000

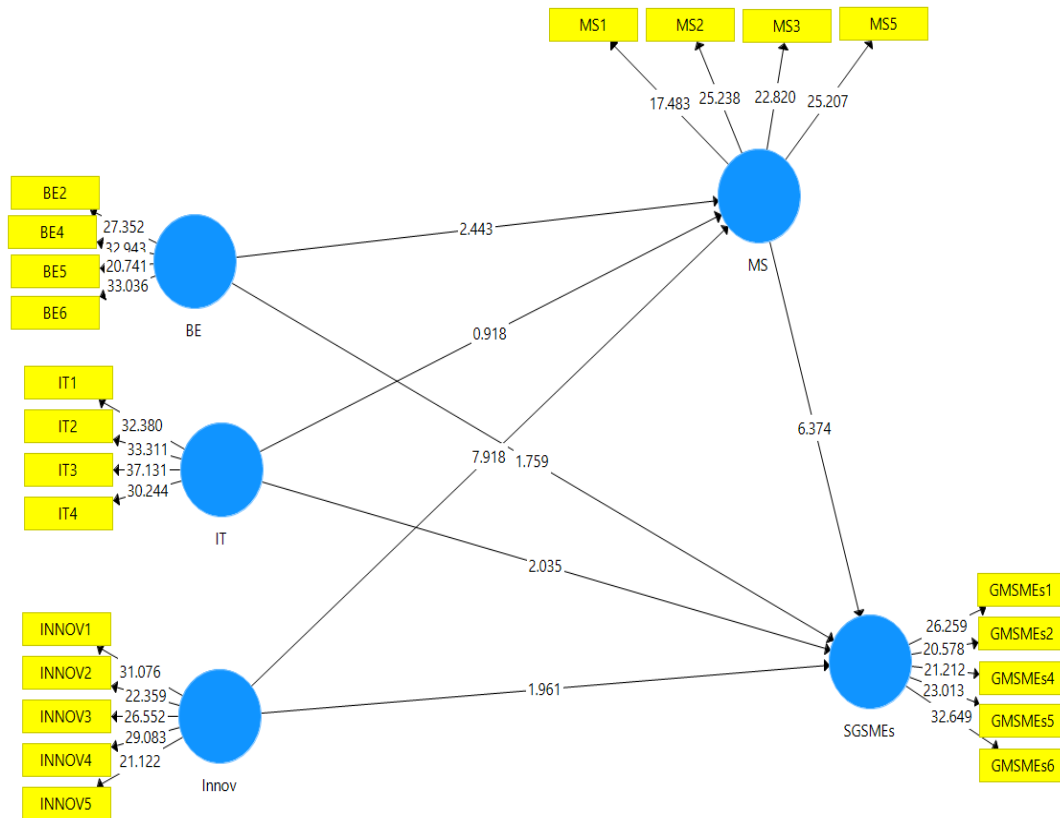


Figure 3 Structural model

5. Discussion and Conclusion

5.1 Discussion

This study provides new insights into the dynamics influencing the sustainable growth of small and medium enterprises (SMEs) in Nigeria, particularly in relation to the business environment, information technology, innovation, and management support. We identify both direct and indirect interactions among these variables, offering a comprehensive understanding of their relationships. Our findings indicate that the business environment has a significant negative impact on the sustainable growth of SMEs. External factors such as regulatory restrictions, economic uncertainty, and market competition hinder SME growth. Additionally, adverse business conditions limit access to funding, disrupt supply chains, and increase operational risks. Chatzoudes et al. (2022); Islam et al. (2021) highlight that external eco-friendly influences affect enterprise growth and advocate for strategic interventions to foster a supportive business environment. Conversely, our research shows that information technology positively stimulates SME growth. This finding underscores the role of technology, digital networks, and automated systems in enhancing efficiency and customer engagement. SMEs leveraging information technology can improve processes, reduce costs, and strengthen competitiveness. Nambisan et al. (2020) support this view, emphasising that digital capabilities enable SMEs to maintain competitiveness in rapidly changing markets. Additionally, innovation significantly influences SME growth. The ability to adopt strategic business models, develop novel products, and optimise processes enhances flexibility and competitiveness. This finding underscores the role of continuous innovation in ensuring business sustainability, particularly in dynamic markets. Teece (2018) and Shaik et al. (2024) support this perspective, asserting that enterprises investing in innovation achieve sustained growth and outperform competitors. Furthermore, our study reveals that the business environment directly influences management support, suggesting that external conditions shape management decisions and the level of support within organisations. In challenging business environments, management tends to adopt short-term survival strategies rather than long-term

investment approaches. Omoush (2021) and Zahra & Wright (2016) emphasise that external environmental pressures shape strategic actions and managerial priorities, affecting SME sustainability. Interestingly, our findings show that information technology did not have direct influence on management support. While information technology enriches operational efficiency, it does not essentially motivate management commitment or strategic decision-making. This suggests that management support is shaped by broader organisational structures and leadership dynamics rather than technology alone. Bharadwaj et al. (2022) and Hendricks & Mwapwele (2024) affirm that while information technology application improves efficiency, its impact on management support depends on organisational culture and leadership engagement. On the contrary, innovation has a significant positive effect on management support. Innovation-driven enterprises tend to have management teams that encourage creative problem-solving and continuous improvement. Damanpour & Schneider (2021) and Islam et al. (2025) argue that innovation-oriented firms demonstrate stronger management commitment and adaptability. Moreover, our findings show that management support significantly impacts SME growth. Strong leadership and managerial commitment contribute to effective resource allocation, strategic planning, and business performance. SMEs with robust management support are better equipped to navigate market disruptions, implement new solutions, and sustain growth. Literature suggests that managerial dedication enhances business resilience (Khan & Zaman, 2021; Senge et al., 2020). In considering the indirect effects, our research finds that management support partly mediates the relationship between business environment, innovation, and sustainable growth of SME in Nigeria. This opines that while external factors present obstacles, strong management support can mitigate negative effects, fostering sustainable growth. Mazzucato (2021) asserts that strategic management initiatives can help SMEs counter external pressures, and enhancing growth. Additionally, innovation directly fosters SME sustainability, and its impact is reinforced by strong management policies. Chesbrough (2020) and Nimfa et al., (2020) notes that firms with strong

managerial support for innovation experience sustained business growth. On the other hand, our findings reveal that management support did not mediate the relationship between information technology and sustainable growth of SME. This proposes that while information technology provides direct benefits, its impact on sustainable growth of SME is not necessarily dependent on management involvement. Von Krogh et al. (2022) maintain that digital technology improves efficiency and market share, but its influence is often independent of management support.

5.2 Recommendations

In line with our findings, we present the following major policy recommendations:

- i. Government and policymakers need to reduce regulatory loads, enhance financial accessibility, and ensure economic stability to support sustainable growth of SMEs. Financial incentives, learning programs, and market access initiatives can help ease challenges in Nigeria's business environment.
- ii. SMEs should adopt modern information technology solutions to enhance productivity and market share. Training programs must equip business owners and employees with needed digital skills for sustainable growth in Nigeria.
- iii. SMEs must constantly invest in research and development to encourage an innovation-driven culture in Nigeria. Any business that prioritize creativity, product diversity, and emerging tendencies will be resilient in Nigeria's competitive market environment.
- iv. Enterprise leaders must implement proactive management policies focusing on strategic planning, workers' empowerment, and regular training. Strong leadership has a significant role in sustainable growth of SME.
- v. Training plans need to be expanded to stimulate skills in management support, information technology, and innovation. Strengthening management expertise will assist SMEs adjust to new market uncertainties in Nigeria.
- vi. SMEs need to incorporate innovation into its management approaches. Owners of SME that drive in innovative practices in their frameworks will improve more adaptive and robust structures in Nigeria.

5.1.1 Practical Implications.

To effectively respond to social, economic, and environmental pressures while sustaining long-term economic performance, stakeholders, owners, and market actors must adopt innovative initiatives grounded in a comprehensive understanding of the strategic business model and its core dimensions. These initiatives should be embedded both during and beyond the "new normal" business environment to strengthen SME resilience and contribute to broader sustainable development objectives. SMEs should progressively transition toward more structured and strategically aligned business model practices while maintaining robust sustainability-oriented strategies. In particular, owners and managers must cultivate a strategic mindset that promotes a strong culture of sustainable growth. This requires not only operational adjustments but also a transformation in managerial values, perspectives, and long-term goal orientation. SME leaders must actively engage in continuous learning to understand evolving market expectations, sustainability standards, and technological advancements, and align their strategic vision accordingly. Investment in SMEs represents a critical development mechanism that reinforces the integration of strategic business model dimensions, strengthens management support systems, and stimulates sustainable growth. Policymakers and institutional stakeholders should therefore create enabling conditions that enhance SME access to digital infrastructure, innovation resources, and managerial development programs. Practically, SMEs can foster sustainable growth by carefully aligning their strategic business models with their operating environments, effectively leveraging information technology, and embedding innovation into their strategic decision-making processes. The findings of this study suggest that strong and consistent management support significantly enhances the effectiveness of these dimensions. SMEs characterized by committed managerial leadership are more likely to translate strategic initiatives into measurable and sustained growth outcomes.

5.1.2 Theoretical Implications

This study provides empirical evidence on the relationship between strategic business model dimensions and the sustainable growth of SMEs within the Nigerian context. The findings reveal that the business environment exerts a negative effect on sustainable growth, suggesting that unfavorable institutional and market conditions can significantly constrain SME sustainability (Igbinakase, 2021). This underscores the urgent need for government and policymakers to design and implement supportive regulatory and economic policies that foster a more conducive business environment for SME development in Nigeria (Ibidunni et al., 2021). The study further confirms that the business environment has a direct and significant influence on management support, highlighting the role of managerial interpretation in responding to environmental conditions. Information technology was found to have a positive and significant direct effect on sustainable growth, emphasizing its role as a key operational driver of competitiveness and long-term performance. However, information technology did not significantly influence management support, suggesting that IT adoption in SMEs may function more as a structural or operational capability rather than a managerially mediated mechanism. Additionally, innovation demonstrated a significant direct relationship with sustainable growth and exerted a strong positive effect on management support. This finding reinforces the importance of innovation-oriented strategies and managerial commitment in fostering SME sustainability. Management support itself showed a substantial and positive influence on sustainable growth, confirming its central role in translating strategic initiatives into performance outcomes. The mediation analysis revealed that management support partially mediates the relationships between business environment and sustainable growth, as well as between innovation and sustainable growth. However, management support did not mediate the relationship between information technology and sustainable growth. These findings provide a nuanced understanding of how strategic business model dimensions interact with managerial mechanisms to drive sustainable SME outcomes. Overall, the study contributes to the literature by advancing knowledge on the

multidimensional nature of strategic business models specifically business environment, information technology, and innovation and their influence on SME sustainable growth. By grounding the framework in upper echelons theory, the research offers a robust theoretical explanation of how managerial characteristics and support mechanisms shape strategic decisions and sustainability outcomes. This theoretical integration strengthens the explanatory power of the model and provides a solid foundation for future research in developing economy contexts.

5.1.3 Social implications

The strategic business model plays a central role in fostering a supportive business environment, strengthening information technology capabilities, promoting innovation, and reinforcing management support factors that collectively stimulate the sustainable growth of SMEs. These interconnected pathways not only enhance firm-level performance but also generate broader social benefits within owner-managed enterprises. In this regard, strategic business model adoption provides a practical foundation for advancing the United Nations Sustainable Development Goals (SDGs) agenda. Empirical evidence indicates that SMEs that embrace a strategically aligned business model contribute to inclusive employment generation, empowerment of socioeconomically disadvantaged groups, capacity-building initiatives, and equitable labor practices. Such outcomes promote social cohesion, strengthen human capital development, and support long-term community resilience. Furthermore, innovation embedded within the strategic business model enables SMEs to reduce inequalities, build community trust, and expand access to markets. By integrating digital technologies and adaptive practices, SMEs can improve transparency, accessibility, and participation within the broader economic ecosystem. Consequently, the social implications of strategic business models extend well beyond firm-level growth to catalyze wider societal transformation. In the Nigerian context, SMEs positioned around robust strategic business model dimensions can serve as critical drivers of sustainability, inclusive development, and long-term socioeconomic progress.

5.1.4 Limitations and direction for future study.

The use of a cross-sectional research design required data to be collected at a single point in time; therefore, caution should be exercised when generalizing the findings. Because the design does not capture changes or developments over time, future studies on the sustainable growth of SMEs are encouraged to adopt a longitudinal research design to improve generalizability and provide stronger causal inferences. In addition, subsequent research could employ qualitative approaches to explore more deeply the relationships among the business environment, innovation, information technology, and management support in fostering sustainable SME growth. Qualitative inquiry may offer richer contextual insights into how these factors interact within different organizational and environmental settings. Although this study focused on the Nigerian context, thereby contributing to the growing body of knowledge on SME sustainability in emerging economies, further investigations in other countries would be valuable. Comparative cross-national studies could help build a more diverse and globally representative body of evidence, enhancing theoretical development and practical implications for sustainable SME growth worldwide.

5.1.5 Conclusion

SME owners who prioritize strategic business model dimensions namely the business environment, information technology, and innovation alongside strong management support in the “new normal” are more likely to experience consistent and sustainable business growth in Nigeria. In a rapidly evolving economic landscape characterized by technological disruption, regulatory shifts, and heightened competitive pressures, SMEs must move beyond traditional operational approaches and adopt more strategically aligned business models. The findings of this study suggest that when SME owners actively monitor and respond to their business environment, invest in relevant information technologies, and foster a culture of innovation, they create a structural foundation for long-term sustainability. However, these strategic dimensions do not operate in isolation; their effectiveness is significantly strengthened when supported by committed and proactive management. The study contributes to

contemporary theory by extending the lens of upper echelon theory to explain how strategic business model capabilities influence the sustainable growth of SMEs through the intervening role of management support. Upper echelon theory posits that organizational outcomes are partially predicted by managerial characteristics and strategic choices. In this context, SME owners and top managers shape firm trajectories through their values, cognitive bases, and decision-making orientations. By incorporating management support as a mediating construct, this research deepens theoretical insight into how leadership commitment, resource allocation, and strategic endorsement translate abstract business model dimensions into tangible growth outcomes. Management support serves as the mechanism through which environmental awareness, technological adoption, and innovative practices are effectively embedded within organizational routines. Importantly, the findings highlight that the business environment and innovation exert both direct and indirect effects on sustainable growth through management support. A favorable business environment characterized by supportive policies, infrastructure, and market opportunities encourages managerial commitment and strategic responsiveness. Likewise, innovation strengthens competitive positioning and organizational adaptability, particularly when leaders actively champion innovative initiatives. In contrast, while information technology demonstrates a direct positive impact on sustainable growth, its indirect effect through management support appears limited. This suggests that technological adoption alone may not automatically translate into enhanced managerial engagement unless accompanied by deliberate strategic integration and capability development. Furthermore, the study advances principles for SME sustainable growth by demonstrating the interplay between strategic orientation and managerial facilitation. Sustainable growth is not merely a function of financial expansion; it encompasses resilience, adaptability, and long-term value creation. SMEs that strategically align their operations with environmental realities, leverage digital tools for efficiency and market reach, and cultivate innovation-driven cultures are better positioned to achieve enduring performance.

Management support amplifies these effects by ensuring that resources are appropriately mobilized, employees are motivated, and strategic priorities remain coherent across organizational levels. Empirically, this research enriches the literature on strategic business models and sustainable SME growth within the Nigerian context. Nigeria presents a dynamic yet challenging environment for SMEs, where infrastructural constraints, policy volatility, and market uncertainties often hinder growth prospects. By providing evidence-based insights into how strategic business model dimensions interact with management support to foster sustainability, the study offers context-specific knowledge that complements broader global discussions on SME development. Moreover, the findings align with the United Nations 2030 Sustainable Development Goals agenda, particularly in areas relating to decent work, economic growth, innovation, and industry development. SMEs function as vital engines of employment generation, poverty reduction, and inclusive economic participation. By adopting robust strategic business models supported by effective management, Nigerian SMEs can contribute not only to firm-level success but also to national development objectives and broader sustainability outcomes. In this regard, the study underscores the transformative potential of strategically managed SMEs as drivers of inclusive economic growth, innovation, and sustainable development in emerging economies.

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