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Strengthening the Impact of Technological Changes on the Performance of Small and Medium Enterprises in Lagos State, Nigeria

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ABSTRACT

This study investigates the impact of technological changes on the performance of small and medium enterprises (SMEs) in Lagos State, Nigeria. The problem statement addresses the need to understand how technological advancements influence various aspects of SMEs' performance, including revenue growth, profitability, and customer satisfaction, in the context of a rapidly evolving digital landscape. The purpose of the study is to examine the relationship between technological changes and SME performance indicators, aiming to provide insights that can inform strategic decision-making and policy formulation for SME development in Lagos State. Employing an explanatory research design, the study utilizes a sample comprising six Local Government Areas (LGAs) within Lagos State, with 30 questionnaires administered to SME owners in each LGA, totaling 180 questionnaire copies. Out of these, 153 valid responses were obtained for data analysis. Content validity was employed to assess the research instrument's validity, while internal consistency was confirmed with a Cronbach alpha of 0.75, indicating instrument reliability. The study employs descriptive and inferential statistics to test hypotheses and analyze the data. The findings reveal significant positive relationships between technological changes and SME performance indicators, highlighting the transformative potential of technology adoption for SMEs in Lagos State. The study concludes by emphasizing the importance of technological innovation and adaptation for enhancing SME competitiveness and sustainability, with implications for policy, practice, and future research. Recommendations include fostering digital literacy, enhancing access to technology infrastructure, and implementing supportive policies to facilitate SMEs' technological adoption and innovation.

Keywords: Technological change, Change management, SMEs, Innovation, Performance

1. Introduction

Small and Medium Enterprises (SMEs) play a vital role in economic development globally, contributing significantly to employment generation, income generation, and poverty alleviation. In recent years, technological changes have become increasingly prevalent, reshaping business landscapes and altering the dynamics of competition. However, the impact of technological changes on the performance of SMEs varies across different contexts, presenting both opportunities and challenges. This study aims to explore the significance of technological changes on SME performance, focusing on both developed and developing economies, with a specific emphasis on Nigeria. By examining prevailing issues and utilizing insights from various scholars, this research seeks to elucidate the necessity for further investigation in this area. Numerous scholars have highlighted the challenges faced by SMEs in adopting and leveraging technological innovations. For instance, Akpan and Ibidunni (2023) emphasize the importance of digitization for sustainable development in emerging economies, underscoring the need for SMEs to embrace technological transformation. Similarly, Al Omoush et al. (2023) discuss the role of digital business transformation in enhancing SME resilience, particularly in emerging markets. Despite the potential benefits, SMEs often encounter barriers such as limited resources, lack of technical expertise, and resistance to change (Eller et al., 2020; Shaikh et al., 2021).

In Nigeria, Small and Medium Enterprises (SMEs) face numerous challenges related to technological adoption, which significantly impact their performance and competitiveness. According to a study by Babajide et al. (2020), only 36% of SMEs in the South-West region leverage financial technology for financing, highlighting the widespread underutilization of digital tools. Additionally, research by Arokodare et al. (2020) indicates that organizational culture moderates the relationship between information technology capability and performance, with many SMEs lacking a conducive environment for technological innovation. Furthermore, the World Bank reports that only 31% of Nigerian SMEs have access to formal financial services, limiting their ability to invest in technology and expand their operations (World Bank, n.d.). These challenges are compounded by infrastructure deficits, with unreliable electricity supply and poor internet connectivity hindering SMEs' ability to adopt and utilize digital technologies effectively. Consequently, Nigerian SMEs often lag behind their global counterparts in terms of productivity, innovation, and market competitiveness, highlighting the urgent need for targeted interventions to address these issues and unlock the transformative potential of technology for SME development.

Understanding the impact of technological changes on SME performance is crucial for policymakers, business owners, and other stakeholders. In Nigeria, for example, where SMEs play a significant role in driving economic growth and development (Babajide et al., 2020), addressing the challenges of technological adoption can unlock new opportunities for innovation and competitiveness. Furthermore, in the wake of global crises such as the COVID-19 pandemic, the role of technology in enabling business continuity and adaptation has become increasingly evident (Pu et al., 2021; Papadopoulos et al., 2020). Therefore, investigating strategies to enhance the technological capabilities of SMEs is imperative for ensuring their sustainability and resilience in the face of future disruptions.

1.1 Problem Statement

The Nigerian context presents a myriad of challenges for Small and Medium Enterprises (SMEs) concerning the adoption and utilization of technological innovations, necessitating comprehensive research to address these pressing issues. Studies reveal that only 17% of Nigerian SMEs have a website, and a mere 5% engage in e-commerce activities, highlighting the significant digital divide within the sector (Federal Ministry of Industry, Trade and Investment, 2019). Furthermore, the Global Innovation Index ranks Nigeria 117th out of 131 countries in terms of innovation, underscoring the country's struggle to harness technological advancements effectively (Global Innovation Index, 2021). This is exacerbated by infrastructural deficiencies, with unreliable power supply and inadequate internet connectivity hindering SMEs' ability to leverage digital tools for business growth and efficiency (World Bank, n.d.). Consequently, Nigerian SMEs face increased competition from global players and risk being left behind in an increasingly digitalized economy. Therefore, there is an urgent need for research to identify the barriers to technological adoption and develop targeted interventions to support SMEs in navigating the challenges posed by technological changes, thereby enhancing their competitiveness and contributing to sustainable economic development. Specifically, the general objective is to investigate strategies for enhancing the impact of technological changes on the performance of Small and Medium Enterprises (SMEs) operating in Lagos State, Nigeria.

i. To assess the influence of technological change on revenue growth of Small and Medium Enterprises in Lagos State, Nigeria;
ii. To assess the influence of technological change on the profitability of Small and Medium Enterprises in Lagos State, Nigeria; and
iii. To assess the influence of technological change on customer satisfaction of Small and Medium Enterprises in Lagos State, Nigeria.

2. Literature Review

2.1 Technological Change

Technological change, as elucidated by scholars such as Akpan and Ibidunni (2023), encompasses the adoption, implementation, and utilization of new technologies within organizational processes, systems, and strategies. It denotes the dynamic evolution of technological capabilities and infrastructure, driving innovation, efficiency, and competitiveness within SMEs. Al Omoush et al. (2023) emphasize that technological change goes beyond mere adoption to encompass a broader transformation of business models, practices, and mindsets, facilitating adaptation to changing market dynamics and emerging opportunities. Moreover, Ardelean (2021) posits that technological change is intricately linked to entrepreneurial success, serving as a catalyst for creativity, problem-solving, and value creation. Thus, technological change represents a multifaceted phenomenon that shapes the trajectory of SMEs, influencing their performance, resilience, and sustainability.

The benefits of technological change for SMEs are manifold and extend across various dimensions of organizational functioning. Arokodare et al. (2020) highlight that technological change

enhances the efficiency and effectiveness of SME operations, enabling streamlined processes, reduced costs, and improved productivity. This is echoed by Babajide et al. (2020), who emphasize that technological change fosters innovation and market competitiveness, enabling SMEs to introduce new products, services, and business models that cater to evolving customer needs and preferences. Additionally, Chege et al. (2020) argue that technological change enhances the flexibility and agility of SMEs, enabling them to adapt to changing market conditions, disruptions, and opportunities. Overall, technological change empowers SMEs to harness the transformative potential of digital technologies, driving growth, innovation, and value creation in today's dynamic and increasingly digitalized business landscape.

2.2 Technological Change Strategies and Approaches

One prominent strategy for SMEs to embrace technological change is through **digitization and automation**. Akpan and Ibidunni (2023) advocate for the digitization and technological transformation of small businesses to foster sustainable development. This approach involves the adoption of digital tools and technologies to streamline business processes, enhance efficiency, and reduce manual workloads. For instance, implementing enterprise resource planning (ERP) systems, customer relationship management (CRM) software, and automation tools can optimize operations, improve decision-making, and accelerate growth (Eller et al., 2020). By digitizing key functions such as inventory management, sales tracking, and customer service, SMEs can unlock new opportunities for innovation, scale, and competitiveness in today's digital economy.

Another essential strategy for SMEs to navigate technological change is through **innovation and investment in research and development (R&D)**. Ardelean (2021) emphasizes the role of technological knowledge and entrepreneurial orientation in driving entrepreneurial success, underscoring the importance of innovation in SMEs. By fostering a culture of innovation and investing in R&D activities, SMEs can develop new products, services, and processes that differentiate them from competitors and create value for customers (Donbesuur et al., 2020). This approach enables SMEs to stay ahead of market trends, anticipate customer needs, and seize emerging opportunities, thereby enhancing their resilience and long-term sustainability.

Collaboration and strategic partnerships offer SMEs a pathway to leverage technological change effectively. Al Omoush et al. (2023) highlight the role of digital business transformation in facilitating frugal innovation and SMEs' resilience in emerging markets. By partnering with technology providers, industry experts, and other stakeholders, SMEs can access specialized expertise, resources, and networks to accelerate their digital transformation journey. For instance, forming alliances with technology startups, academic institutions, or industry associations can enable SMEs to co-create innovative solutions, share knowledge, and mitigate risks associated with technological adoption (Maroufkhani et al., 2020). Through strategic collaborations, SMEs can harness collective intelligence and capabilities to address complex challenges and capitalize on emerging opportunities in today's rapidly evolving business landscape.

Lastly, **capacity building and training** are critical strategies for SMEs to build the skills and competencies required to navigate technological change effectively. Echiejile (2020) emphasizes the impact of information technology on organizational success in emerging economies like Nigeria, highlighting the importance of investing in human capital development. By providing training programs, workshops, and mentorship initiatives, SMEs can empower their employees with the knowledge, skills, and confidence to embrace new technologies and adapt to changing work environments (Pu et al., 2021). Moreover, fostering a learning culture and encouraging continuous professional development can enhance employee engagement, retention, and performance, thereby driving organizational success in the digital age (Shaikh et al., 2021). Overall, capacity building and training initiatives enable SMEs to harness the full potential of technological change, equipping them with the capabilities to thrive in today's increasingly digitalized and competitive business environment.

2.3 Performance of SMEs

Performance for Small and Medium Enterprises (SMEs) can be defined as the achievement of predetermined goals and objectives, encompassing various dimensions such as financial, operational, and strategic outcomes. Mallinguh et al. (2020) describe performance as the extent to which SMEs meet or exceed expectations in terms of profitability, growth, efficiency, and sustainability. This includes metrics such as revenue growth, profitability margins, return on investment (ROI), market share, and customer satisfaction levels. Moreover, performance also extends to non-financial indicators such as innovation, employee satisfaction, and social responsibility, reflecting the holistic impact of SMEs on stakeholders and society (Eller et al., 2020). By effectively managing performance across these dimensions, SMEs can optimize resources, mitigate risks, and achieve long-term success in today's dynamic and competitive business environment.

The benefits of performance for SMEs are manifold and extend across various stakeholders and dimensions. Firstly, achieving strong performance enables SMEs to enhance their competitiveness and market positioning, as highlighted by Babajide et al. (2020). By delivering superior products, services, and experiences to customers, SMEs can differentiate themselves from competitors, build brand loyalty, and gain a sustainable competitive advantage. Moreover, strong performance enhances SMEs' ability to attract investors, secure funding, and access new growth opportunities (Kazakov et al., 2021). This enables SMEs to expand their operations, invest in innovation, and pursue strategic initiatives that drive long-term value creation. Additionally, strong performance contributes to the economic development of local communities and the broader society by creating employment opportunities, generating tax revenues, and fostering entrepreneurship (Faloye & Owoeye, 2023). Overall, performance serves as a critical driver of SMEs' success and impact, enabling them to achieve their goals, create value, and contribute to sustainable growth and development.

2.3.1 Dimensions of Performance of SMEs

Performance of Small and Medium Enterprises (SMEs) encompasses three key dimensions: revenue growth, profitability, and customer satisfaction. These dimensions collectively reflect the ability of SMEs to achieve financial success, operational efficiency, and customer-centricity in today's competitive business landscape.

Revenue growth is a vital aspect of SME performance, reflecting the ability of businesses to expand their market share, attract new customers, and increase sales over time. A study by Chege et al. (2020) underscores the importance of information technology innovation in driving firm performance, including revenue growth, particularly in developing countries. By leveraging digital technologies and innovative business models, SMEs can reach new markets, improve customer engagement, and diversify revenue streams. Moreover, research by Arokodare et al. (2020) highlights the role of information technology capability in enhancing the performance of oil and gas marketing companies in Nigeria, emphasizing its positive impact on revenue growth. Additionally, strategic partnerships and collaborations can also contribute to revenue growth for SMEs. Al Omoush et al. (2023) emphasize the role of digital business transformation in enabling frugal innovation and enhancing SMEs' resilience in emerging markets. By partnering with technology providers and industry experts, SMEs can access new markets, innovative solutions, and revenue-generating opportunities, thereby driving revenue growth and sustainable business expansion.

Profitability is another critical aspect of SME performance, representing the ability of businesses to generate profits and achieve financial sustainability over time. Eller et al. (2020) discuss the antecedents, consequences, and challenges of small and medium-sized enterprise digitalization, highlighting the importance of digital transformation in improving profitability. By digitizing key business processes, optimizing resource allocation, and reducing operating costs, SMEs can enhance efficiency and profitability. Furthermore, innovation and research & development (R&D) play a crucial role in driving profitability for SMEs. Donbesuur et al. (2020) emphasize the link between technological innovation, organizational innovation, and international performance of SMEs, highlighting the positive impact of innovation on profitability. By investing in innovation and developing unique products, services, and business models, SMEs can differentiate themselves from competitors, capture market share, and achieve sustainable profitability.

Customer satisfaction is a key determinant of SME success, reflecting the ability of businesses to meet and exceed customer expectations, build brand loyalty, and drive repeat purchases. Shaikh et al. (2021) conduct a two-decade literature review on challenges faced by SMEs in technology adoption, emphasizing the importance of customer-centric strategies in enhancing customer satisfaction. By leveraging technology to improve customer service, personalize interactions, and address customer needs, SMEs can enhance satisfaction levels and strengthen customer relationships. Additionally, business model innovation can also contribute to customer satisfaction for SMEs. Faloye and Owoeye (2023) explore the impact of business model innovation on micro and small enterprises' performance in Nigeria, highlighting the mediating role of entrepreneurial orientation in driving customer satisfaction. By innovating their business models to offer unique

value propositions, address customer pain points, and deliver superior experiences, SMEs can foster customer satisfaction, loyalty, and advocacy, thereby driving sustainable business growth.

2.4 Theoretical Synthesis

Two salient theories for the study on strengthening the impact of technological changes on the performance of Small and Medium Enterprises (SMEs) are the Resource-Based View (RBV) and the Technology-Organization-Environment (TOE) framework. The RBV, proposed by Barney in 1991, posits that firms can achieve sustained competitive advantage by leveraging unique resources and capabilities that are valuable, rare, and difficult to imitate. In the context of technological changes in SMEs, the RBV suggests that firms can enhance their performance by effectively deploying and leveraging technological resources, such as innovative products, proprietary technologies, and skilled human capital (Barney, 1991). This theory implies that SMEs can strengthen their competitive position and performance by investing in technological capabilities and aligning them with their strategic objectives.

On the other hand, the TOE framework, introduced by Tornatzky and Fleischer in 1990, offers a comprehensive framework for understanding the adoption and assimilation of technological innovations within organizations. The TOE framework considers three main domains – technological context, organizational context, and environmental context – and examines how interactions between these factors influence the adoption and utilization of technology (Tornatzky & Fleischer, 1990). In the context of SMEs, the TOE framework suggests that factors such as technological complexity, organizational readiness, and market dynamism play crucial roles in shaping the effectiveness of technological changes on performance. By applying the TOE framework, SMEs can identify and address key barriers to technological adoption, capitalize on opportunities, and enhance their performance in today's rapidly evolving digital landscape.

3. Methods and Materials

The rationale behind selecting business owners and managers of Small and Medium Enterprises (SMEs) in Lagos State, Nigeria as the sample population for this study is grounded in the purposive sampling method, which aligns closely with the research objectives and the characteristics of the target population. According to Saunders et al. (2020), purposive sampling is appropriate when the researcher aims to include specific individuals with relevant knowledge and experiences related to technological change and SME performance. Given their pivotal role in SME operations, challenges, and decision-making processes, business owners and managers are deemed suitable respondents to provide valuable insights into technological change and its impact on performance. Furthermore, focusing on SMEs is justified due to their substantial contribution to the economy, job creation, and potential for sustainable development.

The research employed a descriptive survey research design. This survey design was chosen because it observed what happened to sample variables without any attempt to manipulate them (Asika, 2008). A structured questionnaire was utilized to gather relevant data. Respondents' views were coded using the five Likert-type scaling measurements of 'strongly agree', 'agree', 'indifferent', 'disagree', and 'strongly disagree'. The population of this study consisted of all SMEs

in all the Local Government areas in Lagos State, with approximately 4535 registered SMEs (Lagos State Ministry, 2020). The inclusion criteria for selecting SME business owners and managers in Lagos State, Nigeria encompass individuals actively engaged in the day-to-day operations and decision-making processes of their enterprises, ensuring firsthand knowledge of business practices.

Additionally, the criteria involve businesses registered as Small or Medium Enterprises according to the classifications outlined by relevant governmental agencies in Nigeria. Lagos State is chosen as the study location due to its diverse economic landscape and high concentration of MSMEs, facilitating a comprehensive understanding of regional dynamics and contextual factors influencing technological change and SME performance. Furthermore, the adoption of a questionnaire, particularly through Google Forms, is justified for its practicality, efficiency, and ability to reach a wide audience of respondents dispersed across the region.

The sampling unit comprised 6 LGAs (Alimosho, Oshodi-Isolo, Amuwo-Odofin, Ikorodu, Ibeju-Lekki, and Lagos Mainland). 30 copies of questionnaires were administered to SME owners in each Local Government area, totaling 180 questionnaire copies. 153 copies of questionnaires were deemed valid for data analysis. Content validity was used to test the validity of the research instrument, while the internal consistency result (Cronbach alpha was 0.75) indicated the reliability of the instrument. The study employed descriptive and inferential statistics to test the hypothesis. Descriptive and inferential statistics are selected for data analysis to provide both a detailed overview and deeper insights into the relationships and patterns within the dataset, as recommended by Saunders et al. (2020) for quantitative research methodologies.

4. Data Analysis and Discussions

The data presented were collected from the SMEs' business owners and managers who are directly and actively involved in the day-to-day operations and decision-making processes of their enterprises, ensuring firsthand knowledge on the relationship between technological changes and the performance of Small and Medium Enterprises (SMEs) operating in Lagos State, Nigeria. The response rate is shown in Table 1.

Table 1: Analysis of Overall Response Rate of Share Questionnaire

Questionnaire	Number of Respondents	Percentage [%]
Returned	153	85
Not returned	27	15
Total	180	100

The analysis of the overall response rate of the share questionnaire, as presented in Table 1, showcases that out of the total 180 questionnaires distributed, 153 were returned, constituting an 85% response rate, while 27 were not returned, comprising 15%. This indicates a relatively high level of engagement from the respondents. Furthermore, in Table 4.1, it's noted that out of the 150 questionnaires directly distributed to MSMEs' business owners and managers, 124 were

completed, yielding an 83% response rate. These findings suggest a generally positive inclination among the targeted audience to participate in the survey, potentially indicating a favorable level of interest or investment in the subject matter under investigation.

4.1 Data Analysis and Interpretation

The research data is organized into two main sections. The first section includes demographic statistics, covering details such as respondents' location, highest level of education, years of experience, and professional affiliation, as presented in Table 1. The second section delves into inferential statistics, employing SEM_Partial Least Square analysis, which is detailed in Table 2.

Table 2: SECTION A: Demographic Statistics [N= 153]

SN			Percentage
	Highest Academic Qualification	Diploma	38
		College/Bachelors' degree	42
		Masters	15
		PHD	5
		Total	**100%**
	Working Experience	1-5years	20
		6 – 10years	56
		11- 15years	21
		16 years and above	3
		Total	**100**%
	Professional Affiliations	None	28
		1-3	62
		4.6	10
		Total	**100**%

Table 4.2 presents the demographic characteristics of SMEs' business managers and supervisors. In terms of their highest academic qualification, the majority hold either a college/bachelor's degree (42%) or a diploma (38%), followed by those with a master's degree (15%) and a smaller percentage with a Ph.D. (5%). Regarding their working experience, the data shows that a significant portion of respondents have been in their roles for 6 to 10 years (56%), followed by those with 11 to 15 years of experience (21%). A smaller percentage have 1 to 5 years of experience (20%), while only a few have 16 years or more of experience (3%). Regarding professional affiliations, the majority of respondents (62%) have 1 to 3 affiliations, followed by those with no affiliations (28%), and a smaller proportion with 4 to 6 affiliations (10%). Overall, the demographic profile suggests a well-educated group with significant experience in SME management, predominantly holding college or bachelor's degrees, with a considerable length of tenure in their roles and varying levels of professional affiliations.

4.2 Test of Hypotheses

This study aimed to explore the influence of technological advancements on the performance of small and medium enterprises (SMEs). To accomplish this goal, a combination of structural and measurement models was utilized. A unique methodology known as SMART_Partial Least Squares (PLS) version 4 was employed for this investigation due to the intricate relationships between variables. PLS was chosen for its capability to handle complex models effectively, especially in situations where obtaining a large dataset might be challenging, as often encountered in company-specific studies like this. Despite limited data, PLS ensured reliable results, primarily focusing on predictive ability, which was crucial for understanding how technological changes impact SMEs' performance indicators such as revenue growth, profitability, and perceived customer satisfaction, particularly in Lagos state. The analysis, including the influence of technological changes on SME performance, was illustrated in Table 2 and Figure 1, while the path coefficients and structural model were presented in Table 3 and Figures 1 and 2, respectively..

SEM Path Diagram (Version 4)

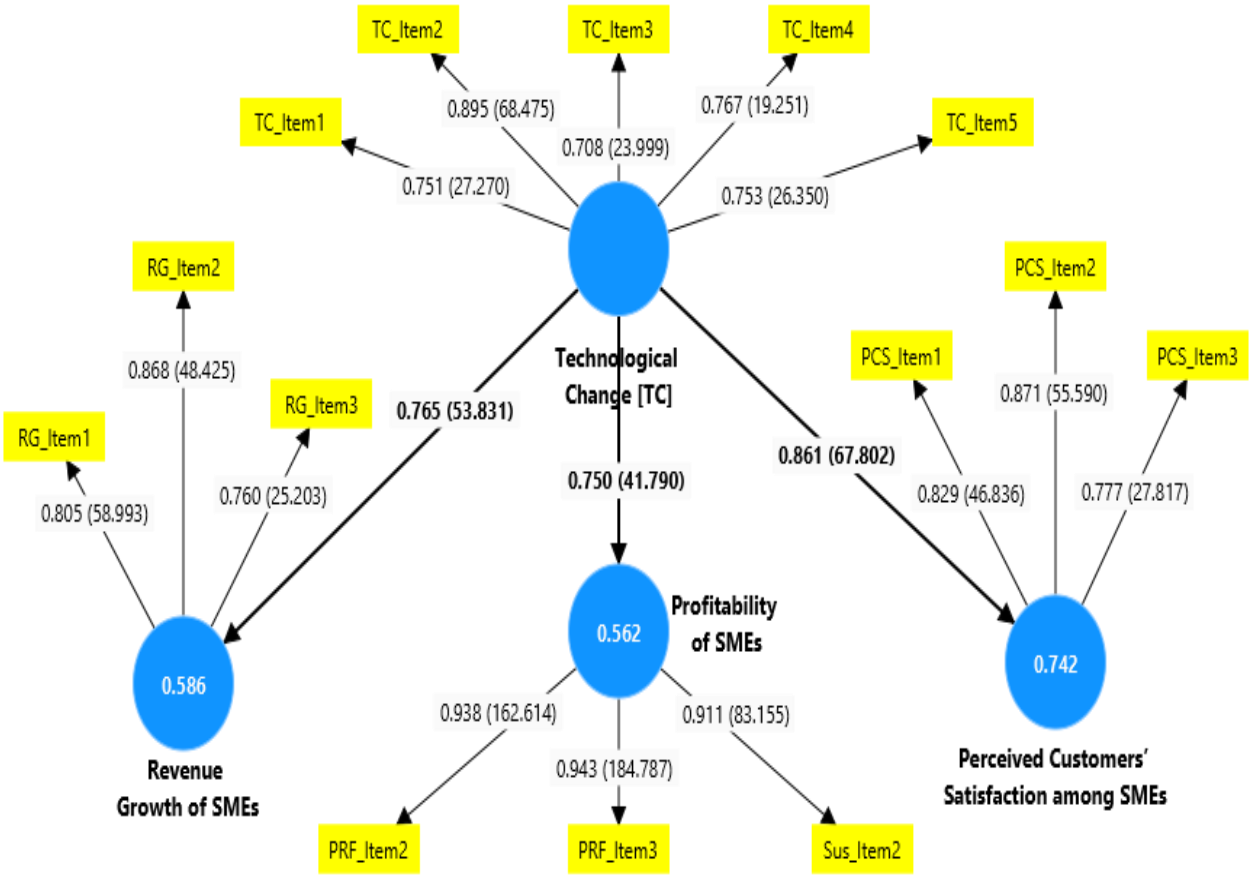

Figure 1: Path Diagram and T-values

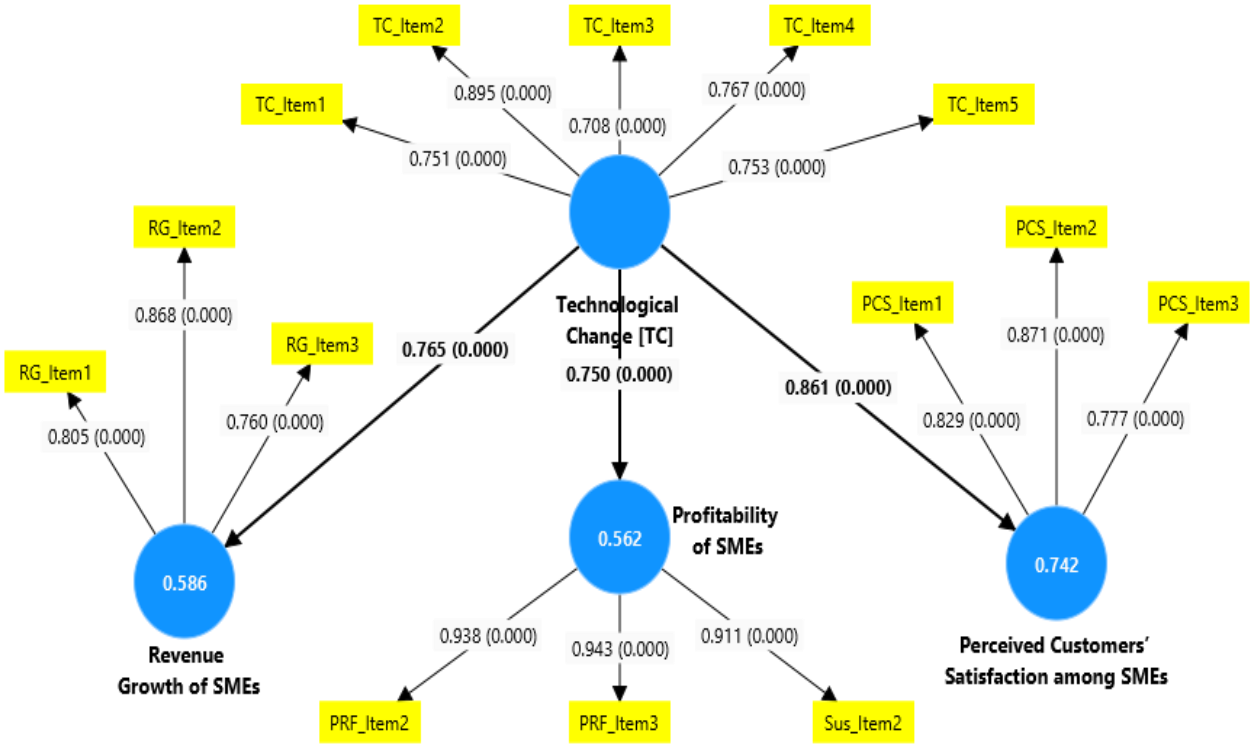

Figure 2: Path Diagram and P-values

Table 3: Path Coefficients of Technological Change and Performance of SMEs

SN	Variables	Co-efficient	R-Square	T value	Sig.	Decision
1	Technological Change [TC] ➔ Revenue growth of SMEs	0.765	0.586	53.841	0.000	Significant
2	Technological Change [TC] ➔ Profitability of SMEs	0.750	0.711	41.790	0.000	Significant
3	Technological Change [TC] ➔ Perceived Customers' Satisfaction among SMEs	0.861	0.783	67.802	0.000	Significant
4	**Technological Change [TC] ➔ Performance of SMEs**	**0.779**	**0.728**	**52.846**	**0.000**	**Significant**

The path coefficients presented in Table 3 reveal significant relationships between technological change and various performance indicators of SMEs. Firstly, the coefficient values indicate strong positive associations between technological change and revenue growth, profitability, perceived customer satisfaction, and overall performance of SMEs. For instance, the coefficients for revenue growth, profitability, perceived customer satisfaction, and overall performance are 0.765, 0.750,

0.861, and 0.779 respectively. These coefficients signify that a unit increase in technological change leads to substantial increases in revenue growth, profitability, perceived customer satisfaction, and overall performance of SMEs. The high R-square values further confirm the robustness of these relationships, indicating that a significant proportion of the variance in the performance indicators can be explained by technological change.

The high R-square values presented in Table 3, ranging from 0.586 to 0.783, indicate that a significant proportion of the variance in SMEs' performance indicators—such as revenue growth, profitability, and perceived customer satisfaction—can be explained by technological change. These values reflect the substantial impact of technological advancements on SMEs' performance outcomes, suggesting that technological change plays a crucial role in driving improvements in revenue generation, profitability, and customer satisfaction levels. These findings resonate with the works of researchers such as Kazakov et al. (2021) and Eller et al. (2020), who emphasize the importance of information and communication technology (ICT) adoption in enhancing organizational performance, particularly in small and medium enterprises. The high R-square values underscore the significance of technological innovation and adaptation in the context of SMEs, highlighting the need for strategic investments in technology to achieve sustainable growth and competitiveness in today's digital economy.

These findings have important implications for business managers, owners, and supervisors of SMEs. Firstly, they highlight the critical role of technological advancements in enhancing various aspects of SMEs' performance, including revenue generation, profitability, and customer satisfaction. Business leaders should recognize the importance of investing in and adopting relevant technologies to stay competitive and achieve sustainable growth. This aligns with the works of Akpan & Ibidunni (2023), who emphasize the significance of digitization and technological transformation for sustainable development in emerging economies. Additionally, the results resonate with Al Omoush et al. (2023), who emphasize the role of digital business transformation in enhancing SMEs' resilience in emerging markets.

Moreover, the findings imply that SMEs need to prioritize technological innovation and adaptation as strategic imperatives to improve their performance and competitiveness. This aligns with the works of Das et al. (2020), who emphasize the importance of technology adaptation for the survival of SMEs in developing countries. Furthermore, the results underscore the importance of government support and favorable institutional environments in facilitating technological adoption and sustainability among SMEs, as suggested by Pu et al. (2021) and Donbesuur et al. (2020). Specifically, the findings from this study provide valuable insights for SMEs' stakeholders, emphasizing the critical role of technological change in driving performance improvement. Business leaders should leverage these insights to formulate strategies that enhance technological adoption and innovation, thereby positioning their SMEs for long-term success and resilience in dynamic market environments.

5. Conclusion

The findings of this study underscore the critical importance of technological changes in driving the performance of small and medium enterprises (SMEs) in Lagos State, Nigeria. Through the application of SMART_Partial Least Squares analysis, the research revealed significant positive relationships between technological changes and key performance indicators such as revenue growth, profitability, and perceived customer satisfaction among SMEs. These results highlight the transformative potential of technology adoption and innovation in enhancing SMEs' competitiveness and sustainability in dynamic market environments. As echoed by scholars like Chege et al. (2020) and Faloye & Owoeye (2023), embracing digitalization and leveraging technological advancements can empower SMEs to achieve higher levels of efficiency, productivity, and market responsiveness. Thus, to maximize the benefits of technological changes, policymakers, business leaders, and stakeholders need to prioritize initiatives that promote digital literacy, facilitate access to technology infrastructure, and foster a supportive ecosystem for SMEs' technological innovation and adaptation. By doing so, SMEs in Lagos State can effectively navigate the challenges of the digital age and capitalize on emerging opportunities for growth and success.

6. Recommendations and Policy Implications

To capitalize on the findings highlighting the pivotal role of technological changes in enhancing the performance of small and medium enterprises (SMEs) in Lagos State, Nigeria, policymakers and stakeholders should consider several recommendations and policy implications. Firstly, there is a pressing need to develop comprehensive strategies that promote digital literacy and capacity-building initiatives among SME owners and employees. This can involve establishing training programs, workshops, and seminars aimed at enhancing understanding and proficiency in utilizing digital tools and technologies relevant to SME operations. Additionally, policymakers should prioritize initiatives that facilitate access to affordable and reliable technology infrastructure, including high-speed internet connectivity and digital platforms tailored to SME needs. By investing in digital skills development and infrastructure, policymakers can empower SMEs to leverage technological advancements more effectively, driving innovation, productivity gains, and competitiveness in the local market.

Furthermore, policymakers should explore policies and incentives aimed at fostering an enabling environment for SMEs' technological innovation and adaptation. This can include tax incentives, grants, and subsidies for SMEs investing in digital transformation initiatives. Moreover, policymakers should collaborate with industry stakeholders, educational institutions, and technology providers to create innovation hubs, incubators, and accelerators specifically tailored to SMEs' needs. These initiatives can provide SMEs with access to mentorship, funding, and networking opportunities, fostering a culture of innovation and collaboration within the SME ecosystem. By implementing supportive policies and programs, policymakers can catalyze SMEs' adoption of technology, driving sustainable economic growth, job creation, and inclusive development in Lagos State.

7. Contributions to Knowledge and Suggestion for Further Studies

This study makes significant contributions to knowledge by providing empirical insights into the relationship between business model innovation (BMI) and sustainability in Micro, Small, and Medium Enterprises (MSMEs) in Southwest Nigeria. The findings highlight the importance of BMI in driving social, economic, and environmental sustainability dimensions within MSMEs, thereby enriching our understanding of the mechanisms through which innovative business practices contribute to overall organizational sustainability. Additionally, the study underscores the need for tailored strategies and interventions to foster BMI and sustainability among MSMEs, offering practical implications for policymakers, business leaders, and other stakeholders. For further studies, researchers could explore the moderating effects of contextual factors such as industry characteristics, organizational culture, and external market conditions on the relationship between BMI and sustainability, as well as investigate the long-term impact of BMI initiatives on MSME performance and resilience. Moreover, comparative studies across different regions or countries could provide valuable insights into the contextual nuances shaping BMI and sustainability dynamics within diverse MSME ecosystems.

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