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EXPLORING THE IMPACT OF DIGITAL TRANSFORMATION ON SMALL AND MEDIUM-SIZED ENTERPRISES (SMES) IN SELECTED FIRMS IN ANAMBRA STATE

AMEKE, BENSON CHUKWUKA

Registry Department, +2348036652948, flinksworld@gmail.com

Abstract

This study investigates the impact of digital transformation on Small and Medium-sized Enterprises (SMEs) in developing economies, focusing on the challenges, opportunities, and policy implications for SME growth and development. A mixed-methods approach is employed, combining surveys of 300 SMEs with in-depth interviews of 10 business owners in selected SMEs organisations in Anambra State.The findings reveal significant relationships between digital transformation, innovation, and SMEs' competitiveness, improves customer engagement, and increases access to new markets. However, infrastructure constraints, skills gaps, and regulatory barriers hinder digital adoption.This study identifies key drivers of digital transformation for SMEs, including cloud computing, big data analytics, and social media. It also highlights the importance of government support, infrastructure development, workforce development, and workforce training in facilitating digital transformation.Policy recommendations are provided to address the challenges and leverage digital transformation for inclusive economic growth. These include investing in digital infrastructure, promoting digital literacy, and implementing policies that encourage innovation and entrepreneurship.This research contributes to understanding of digital transformation's impact on SMEs in developing economies, informing policymakers, practitioners and scholars.

Keywords: *Digital transformation, SMEs, developing economies, innovation, policy implications.*

Introduction

The rapid revolution of digital technologies has revolutionised the business landscape, presenting both opportunities and challenges for Small and Medium-sized Enterprises (SMEs) in developing economies. As these enterprises navigate the complexities of digital transformation, they must confront the reality of inadequate infrastructure, limited access to finance and skills, and regulatory barriers that hinder their ability to compete in the global market (World Bank, 2022). Despite these challenges, digital transformation offers SMEs in developing economies a unique opportunity to leapfrog traditional development pathways and access new markets, improve operational efficiency, and develop innovative products and services (Organisation for Economic Co-operation and Development (OECD, 2022). However, realising this potential requires a nuanced understanding of the complex interplay between digital technologies, institutional frameworks, and enterprise capabilities.

This study aims to contribute to the existing literature on digital transformation and Small and Medium-sized Enterprises (SMEs) in developing economies, with specific focus on selected firms in Anambra State, Nigeria. Nigeria's rapidly growing digital economy and Anambra State's emerging entrepreneurial ecosystem provide a unique context for examining the opportunities and challenges of digital transformation for SMEs.

Statement of Problem

The proliferation of digital technologies has created a paradox for Small and Medium-sized Enterprises (SMEs) in Nigeria. On one hand, digital transformation offers SMEs in Anambra State, Nigeria opportunities to enhance their competitiveness, improve operational efficiency, and expand their market reach. On the other hand, the adoption and effective utilisation of digital technologies pose significant challenges for SMEs, including inadequate digital infrastructure, limited access to finance and digital skills, and regulatory hurdles. This study seeks to investigate the impact of digital transformation on SMEs in Anambra State, Nigeria and identify the key factors that influence their ability to leverage digital technologies for sustainable growth and development.

Research Question

To address the challenges facing SMEs in Anambra State, Nigeria, the following research questions are investigated:

Primary Research Question

What is the impact of digital transformation on the performance and competitiveness of Small and Medium-sized Enterprises (SMEs) in Anambra State, Nigeria?

Specific Research Questions

1. To what extent do SMEs in Anambra State, Nigeria adopt and utilise digital technologies in their business operations?
2. What are the key factors that influence the adoption and effective utilisation of digital technologies by SMEs in Anambra State, Nigeria?
3. How does digital transformation affect the financial performance, operational efficiency, and market competitiveness of SMEs in Anambra State, Nigeria?
4. What are the challenges and barriers that SMEs in Anambra State, Nigeria, face in adopting and utilising digital technologies, and how can these challenges be addressed?

Objective of the Study

The general objective of this study is to investigate the impact of digital transformation on the performance and competitiveness of Small and Medium-sized Enterprises (SMEs) in Anambra State, Nigeria.

Specific Objectives

The specific objectives of this study are to:

1. Examine the extent to which SMEs in Anambra State, Nigeria, adopt and utilise digital technologies in their business operations.
2. Identify the key factors that influence the adoption and effective utilisation of digital technologies by SMEs in Anambra State, Nigeria.
3. Analyse the impact of digital transformation on the financial performance, operational efficiency, and market competitiveness of SMEs in Anambra State, Nigeria.
4. Investigate the challenges and barriers that SMEs in Anambra State, Nigeria, face in adopting and utilising digital technologies, and to propose strategies for addressing these challenges.

Significance of the Study

By investigating the impact of digital transformation on SMEs in Anambra State, Nigeria, this study aims to make meaningful contribution to the existing body of knowledge on digital transformation and provide valuable insights for stakeholders. Specifically, this study aims to:

1. Inform policy decisions
2. Enhance competitiveness
3. Support digital inclusion
4. Advance research and practice

Review of Related Literature

The significance of Small and Medium-sized Enterprises (SMEs) in driving economic growth and development in developing countries cannot be overstated. According to the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN), SMEs in Nigeria are defined as enterprises with fewer than 200 employees and an annual turnover not exceeding ₦500 million (SMEDAN,2020). This definition is consistent with the international definition of SMEs, which emphasises the importance of enterprise size and turnover in determining SME status (OECD, 2019). Research has shown that SMEs in developing countries face numerous challenges, including limited inadequate infrastructure, limited access to finance, and a shortage of skilled labour (CBN, 2020; World Bank, 2019). However, digital transformation offers a potential solution to these challenges, enabling SMEs to increase efficiency, improve productivity, and expand their customer base (Manyika, Chui, Bisson, Bughin & Woetzel, 2017). Several studies have explored the impact of digital transformation on SMEs in developing countries. For example, a study by Suh, Lee & Kin, 2018, found that digital transformation can improve the competitiveness of SMEs in developing countries by enabling them to access new markets and customers. Similarly, a study by Kshetri, 2018, found that digital transformation can help SMEs in developing countries to overcome the challenges of inadequate infrastructure and limited access to finance. Despite these findings, there is need to for further research on the impact of digital transformation on SMEs in developing economies. Specifically, there is a need for research that explores the challenges in the context of SMEs in Nigeria.

In Anambra State, SMEs play a significant role in local economic development. They dominate sectors such as agriculture, manufacturing, wholesale and retail trade, and services. These businesses often operate in informal or semi-formal settings, relying on personal savings, family support, or microloans for capital. Despite their contributions, SMEs face several challenges, including limited access to finance, inadequate infrastructure, and low adoption of modern technologies. These challenges hinder their potential for growth and global competitiveness.

Information Technology (IT) Adoption in SMEs

The adoption of information technology (IT) is a critical factor in the success of SMEs in today's digital economy. Research has shown that IT adoption can improve the efficiency, productivity, and competitiveness of SMEs (Khan et al., 2017). However, the adoption of IT by SMEs is often hindered by various challenges, including limited financial resources, lack of technical expertise, and inadequate infrastructure (OECD, 2019). Studies have identified several factors that influence IT adoption in SMEs including organisational characteristics, environmental factors and technological factors (Chong et al., 2011). IT adoption refers to the process by which SMEs embrace and integrate digital technologies into their operations. The degree of IT adoption varies widely among SMEs due

to differences in resources, awareness, and environmental factors. A study by the International Journal of Information Management found that SMEs with higher level of organisational awareness are more likely to adopt IT (Chong et al., 2011). In the context of Nigeria, research has shown that IT adoption by SMEs is still at relatively low level, particularly in rural areas (Adeyinka et al., 2017). However, there is a growing trend towards IT adoption by SMEs in Nigeria, driven by increasing availability of digital technologies and the need to remain competitive in the global market (Nigerian Communications Commission, 2019). This is also evident in Anambra State championed by the State Government.

In Anambra State, IT adoption among SMEs is influenced by several factors:

i. Business Type: Service-oriented SMEs are more likely to adopt IT compared to agriculture-based enterprises, which may perceive IT as less relevant to their operations.
ii. Leadership and Vision: SMEs led by forward-thinking entrepreneurs are more likely to embrace digital transformation.
iii. Infrastructure: Poor internet connectivity and inconsistent power supply remain significant barriers.
iv. Cost and Accessibility: High costs of acquiring and maintaining IT systems deter many SMEs from adoption.
v. Awareness and Skills: Many SME operators lack the technical knowledge or awareness of available IT solutions.

Information Technology Infrastructure

Information Technology (IT) is a critical component of digital transformation enabling businesses to access, process, and utilise information effectively (Alam, Hoque & Islam, 2020).
In the context of SMEs in developing countries, IT infrastructure is a major challenge, hindering their ability to adopt digital technologies (Ogheneruemu and Ogheneruemu 2022).

Information Technology for Development

The concept of IT for development refers to leveraging digital tools and resources to drive economic and social progress. In the context of SMEs, IT serves as a catalyst for:
Market Access: E-commerce platforms and social media enable SMEs to reach customers beyond their immediate geographical locations.
Operational Efficiency: Automated systems reduce manual processes, minimising errors and increasing productivity.

Digital Tools and Platforms for SMEs

Digital tools and platforms have been identified as key enablers of digital transformation (Rahman & Uddin, 2022). These tools and platforms improve SMEs' operational efficiency, customer engagement, and market reach (Ajiboye & Obadan, 2022). However, the adoption of digital tools and platforms is hindered by limited digital literacy and inadequate infrastructure (Manyani, 20020).

Data Analytics and Intelligence for SMEs

Data analytics and intelligence are critical components of digital transformation, enabling businesses to make data-driven decisions (Kushwaha and Agrawal, 2021). However, SMEs in developing

countries face challenges in adopting data analytics and intelligence due to limited access to technology and inadequate infrastructure (Nwammuoh, Ezejiofor & Asogwa, 2024).

Cybersecurity Challenges for SMEs

Cybersecurity is a major challenge for SMEs in developing countries, with cyber threats posing a significant risk to their operations (Ogheneruemu and Ogheneruemu 2022). However, studies have shown that cybersecurity measures can be implemented to mitigate these risks (Ajiboye & Obadan, 2022).

Digital Skills and Training for SMEs

Digital skills and training are critical components of digital transformation, enabling SMEs to adopt and utilise digital technologies effectively (Rahman & Uddin, 2022). However, SMEs in developing countries face challenges in accessing digital skills and training due to limited resources and inadequate infrastructure (Adekoya & Odunsi, 2020).

Customer Relationship Management: Digital tools provide insights into customer behaviour, preferences, and feedback, helping SMEs deliver personalised services.

i. Cost Reduction: Cloud-based solutions eliminate the need for expensive physical infrastructure, reducing upfront and operational costs.

ii. Financial Inclusion: Mobile payment solutions and digital banking services improve access to credit and streamline transactions.

Digital Transformation of SMEs in Anambra State

Digital transformation involves the integration of digital technology into all areas of a business, fundamentally changing how it operates and delivers value to customers. In Anambra State, digital transformation for SMEs entails shifting from manual processes to automated systems, adopting e-commerce platforms, leveraging data analytics, and building an online presence.

Examples of IT-driven transformations in Anambra SMEs include:

i. Retail Sector: Adoption of point-of-sale (POS) systems and mobile payment solutions to streamline transactions.

ii. Agriculture: Use of precision farming tools, mobile apps for market access, and digital platforms for farm input management.

iii. Manufacturing: Deployment of inventory management software and automation technologies to enhance productivity.

iv. Service Industry: Utilisation of CRM software and digital marketing tools to attract and retain customers.

Despite these advancements, the pace of digital transformation in Anambra SMEs remains slow, necessitating targeted interventions by stakeholders, including government agencies, financial institutions, and technology providers.

Key Benefits of Information Technology for SMEs

a. Enhanced Productivity: Automation of routine tasks allows SMEs to focus on strategic activities.
b. Market Competitiveness: IT enables SMEs to compete with larger enterprises by leveling the playing field.

c. Access to Global Markets: E-commerce and online platforms provide SMEs with opportunities to reach international customers.
d. Data-Driven Decision Making: IT tools offer insights into market trends and business performance, supporting informed decisions.
e. Improved Customer Engagement: Digital platforms facilitate better communication and engagement with customers.

Challenges of Information Technology Adoption in SMEs

While the benefits of IT are evident, SMEs in Anambra State face several obstacles:

1) Financial Constraints: Limited access to credit makes it difficult for SMEs to invest in IT solutions.
2) Skill Gaps: Many SME operators lack the technical skills needed to adopt and manage IT systems.
3) Cultural Resistance: Resistance to change among employees and management can hinder IT adoption.
4) Infrastructure Deficits: Poor internet access and unreliable power supply limit the usability of IT tools.

Role of Stakeholders in Information Technology (IT) Adoption

Key stakeholders in promoting IT adoption among SMEs include:

a. Government: Policies, subsidies, and training programs to support SME digitalisation.
b. Private Sector: Technology providers offering affordable and scalable solutions tailored to SME needs.
c. Educational Institutions: Incorporating IT training into vocational and entrepreneurship programs.
d. NGOs and Development Agencies: Facilitating awareness campaigns and funding for IT projects.

Technology Acceptance Model (TAM):

The Technology Acceptance Model (TAM) is a widely used framework for understanding user acceptance of technology (Davis, 1989). In the context of digital transformation, TAM can help explain how Small and Medium-sized Enterprises (SMEs) in developing countries accept and adopt digital technologies. TAM suggests that perceived ease of use and perceived usefulness are critical factors in determining the intention to use a technology, which in turn influences actual usage behaviour (Venkatesh & Davis, 2000). This is particularly relevant for SMEs in Anambra State, Nigeria, where digital transformation can have a significant impact on their operations. Studies have shown that when business owners and employees perceive digital technologies as easy to use and beneficial to their operations, they are more likely to adopt them (Rogers, 2003). This is consistent with the Diffusion of Innovations (DOI) theory, which posits that the adoption of an innovation is influenced by its perceived attributes, including relative advantage, compatibility, complexity, trialability, and observability (Rogers, 2003).

Unified Theory of Acceptance and Use of Technology (UTAUT):

The Unified Theory of Acceptance and Use of Technology (UTAUT) provides a comprehensive framework for understanding the factors that influence the adoption and use of technology in Small

and Medium-sized Enterprises (SMEs) (Venkatesh et al., 2003). According to UTAUT, four main factors determine the intention to use technology: performance expectancy, effort expectancy, social influence, and facilitating conditions (Venkatesh et al., 2003).

a) Performance expectancy refers to the degree to which an individual believes that using a technology will improve their performance (Venkatesh et al., 2003).
b) Effort expectancy refers to the degree of ease associated with using a technology (Venkatesh et al., 2003).
c) Social influence refers to the extent to which an individual perceives that others believe they should use a technology (Venkatesh et al., 2003).
d) Facilitating conditions refer to the extent to which an individual believes that they have necessary resources and support to use a technology (Venkatesh et al., 2003).

In the context of SMEs in Anambra State, Nigeria, performance expectancy and facilitating conditions are likely to be crucial in determining whether businesses embrace information technology. This is because SMEs in developing countries often face significant challenges in terms of limited resources, inadequate infrastructure, and lack of technical expertise Kula & Tatoglu, 2003).

Resource-Based View (RBV): Resource-Based View (RBV) theory posits that a firm's competitive advantage is primarily derived from its resources, including tangible and intangible assets. For SMEs in Anambra State, adopting and integrating IT can be viewed as a strategic resource that enhances business performance. According to RBV, SMEs with access to better resources, such as skilled labour, capital, and technology, are more likely to leverage these resources for competitive advantage. As such, this theory can be useful in examining the extent to which SMEs in Anambra State perceive IT adoption as an investment in their resource base, and how such investments contribute to their competitive advantage and long-term sustainability.

Institutional Theory

Institutional theory posits that organisations are shaped by their institutional environment, which comprises formal and informal rules, norms, and values (Scott, 2014). The institutional environment influences organisational behaviour, structure, and performance as organisations seek to gain legitimacy, resources, and survival (Meyer & Rowan, 1977). It suggests that SMEs are influenced by both formal and informal institutional pressures, such as regulations, norms, and expectations from government bodies, industry associations, and local communities. In Anambra State, the adoption of IT by SMEs could be influenced by external institutional factors such as government policies, access to financial support, and industry standards for digital transformation. This theory highlights the importance of the external environment in shaping the decisions of SMEs to adopt and use IT, as they are often responsive to these institutional pressures.

Regulative Pillar

The regulative pillar, comprising formal rules, laws, and regulations, plays a crucial role in shaping SMEs' adoption of digital technologies (Scott, 2014). For instance, a study by the World Bank (2020) found that SMEs in developing countries face significant regulatory barriers to adopting digital technologies, including limited access to finance and inadequate infrastructure.

Normative Pillar
The normative pillar, comprising informal norms, values, and expectations, also influences SMEs adoption of digital technologies (Scott, 2014). A study by Hofstede (2001) found that cultural values, such as power distance and uncertainty avoidance, can shape SMEs' attitudes towards digital transformation.

Cognitive Pillar
The cognitive pillar, comprising shared beliefs, assumptions, and knowledge, plays a critical role in shaping SMEs' understanding of digital transformation (Scott, 2014). A study by Nonaka (1994) found that organisational knowledge creation is critical for SMEs to adopt and effectively use digital technologies.

Contingency Theory
Contingency Theory suggests that the most effective organisational structure, leadership style, and technology adoption depend on the specific context and circumstances of the organisation (Fiedler, 1964; Lawrence & Lorsch, 1967). In the context of digital transformation, contingency theory can help explain how SMEs in developing countries can adapt to the changing business environment (Tushman & Nadler, 1978). Instead, the effectiveness of IT adoption depends on the specific context of the firm. Factors such as firm size, industry type, and available resources significantly affect how technology is adopted and utilised. In the case of SMEs in Anambra State, the theory can help explain why larger SMEs with more resources may adopt more advanced IT solutions compared to smaller businesses with limited financial capacity. Furthermore, this theory emphasises the need for contextual analysis, as the adoption of ICT may vary depending on the unique characteristics and challenges faced by different SMEs.

Innovation Theory
Innovation Theory focuses on how organisations can adopt, implement, and use innovations. In the context of SMEs in Anambra State, this theory helps to explain how technological innovations can lead to improvements in business operations, market reach, and customer engagement. The adoption of IT by SMEs could be seen as an innovation process, where the perceived benefits and challenges dictate how quickly and effectively the technology is integrated into daily business operations. Factors such as entrepreneurial mindset, willingness to experiment, and adaptability to change are essential in the innovation process.

Impact of ICT on SMEs' Growth in Anambra State:
The integration of Information and Communication Technology (ICT) is pivotal for the growth and competitiveness of SMEs in developing countries, including Anambra State, Nigeria (Alam, Hoque & Islam, 2020). Recent studies have shown that the impact of ICT on SMEs' growth in Anambra State, Nigeria have been positive with many SMEs witnessing;

i. **Improved Efficiency and Productivity**: The adoption of ICT has enabled SMEs to streamline their operations, reduce costs, and improve their overall efficiency and productivity. For instance the use of accounting software has enabled SMEs to automate their financial transactions, reducing errors and increasing the speed of financial reporting.
ii. **Enhanced Market Reach and Competitiveness**: ICT has enabled SMEs to reach a wider market and compete more effectively with larger businesses. The use of e-commerce platforms,

social media, and online advertising has enabled SMEs showcase their products and services to a global audience, increasing their market share and revenue (Eze, 2019).

iii. **Increased Access to Information and Knowledge**: ICT has provided SMEs in Anambra State, Nigeria with access to a vast amount of information and knowledge, enabling them to make informed decisions and improve their business operations. The use of online resources, such as business directories, market research reports, and industry publications, has enabled SMEs to stay up-to-date with latest trends and developments in their industry (Okoye, 2018).

iv. **Improved Customer Service and Engagement:** ICT has enabled SMEs in Anambra State, Nigeria to improve their customer service and engagement, through the use of online platforms, such as e-mail, social media, and Customer Relationship Management (CRM) software. This has enabled SMEs to respond quickly to customer inquiries, resolve issues promptly, and build strong relationships with their customers (Nwosu, 2020).

v. **Job Creation and Employment Opportunities:** The adoption of ICT has created new job opportunities and employment possibilities for SMEs in Anambra State, Nigeria. The use of ICT has enabled SMEs to create new products and services, such as software development, data analysis, and digital marketing, which have created new employment opportunities for young people in the state (Ani, 2019).

vi. **Increased Revenue and Profitability:** The integration of ICT has enabled SMEs in Anambra State to increase their revenue and profitability through the use of online payment systems, e-commerce platforms, and digital marketing. The use of ICT has also enabled SMEs reduce their costs and improve their overall efficiency, leading to increased profitability (Okeke, 2020).

Notwithstanding these benefits, SMEs in Anambra State, Nigeria confront significant challenges in harnessing the potentials of ICT, including inadequate infrastructure, limited managerial expertise, and high costs of adoption (Ogheneruemu & Ogheneruemu, 2022).Despite these advantages, SMEs in Anambra State, Nigeria faced difficulties in adopting digital tools due to challenges such as high internet costs, lack of technical skills, and limited access to e-commerce platforms (Nigerian Journal of Business Education, 2020).

Digital Transformation and SMEs during the COVID-19 Pandemic:

The COVID-19 pandemic has underscored the necessity for SMEs in Anambra State to adopt digital solutions for survival and growth (Kumar, Sharma & Singh, 2020). A study examining the impact of the pandemic on SMEs revealed that businesses that quickly embraced digital platforms for sales, marketing, and customer communication fared better than those who did not (Sohail & Al-Jabri, 2020). This digital shift allowed businesses to continue operations even during lockdowns, offering valuable lessons on the importance of digital readiness (Sarker et al., 2020).

In addition, a similar study by Ejiofo, Okechukwu & Eze (2021) found that while some SMEs utilised social media for marketing, most lacked the necessary tools to manage e-commerce platforms efficiently. This study suggested that targeted training on digital literacy, as well as improvements in internet connectivity, were key factors for facilitating ICT adoption and ensuring that SMEs remain competitive in a post-pandemic world (Ejiofo et al., 2021). The adoption of digital technologies by SMEs in Anambra State, Nigeria is crucial for their survival and growth in the post-pandemic era. However, the challenges faced by SMEs in adopting digital tools must be addressed through interventions such as training on digital literacy, improvements in internet connectivity, and access to e-commerce platforms (Kumar, et al., 2020).

Barriers to ICT Adoption:
Multiple studies have identified common barriers to ICT adoption among SMEs in Anambra State, including financial constraints, lack of awareness, and inadequate infrastructure. A recent study by Ukeje et al. (2022) further examined these barriers, noting that the cost of ICT tools, alongside inconsistent power supply, presents a significant challenge to many SMEs. Many business owners remain skeptical about the return on investment (ROI) from ICT adoption, especially when the upfront costs are high. Additionally, the lack of a formalised IT strategy and expertise within SMEs often leads to under-utilisation of available technologies.
Moreover, SMEs in Anambra State face issues related to cybersecurity and data privacy, which deter some from fully engaging with online platforms. According to the findings of Nwankwo (2021), fear of cyber fraud and theft prevents many business owners from adopting e-commerce platforms or even digital marketing strategies. Without adequate knowledge of cybersecurity risks and solutions, these concerns continue to stymie the growth potential of SMEs in the region.

Opportunities for Improvement:
While challenges persist, there is substantial opportunity for SMEs in Anambra to benefit from ICT integration. Research by Okafor and Nwachukwu (2023) argues that SMEs that adopt ICT can unlock new markets, increase productivity, and foster better customer engagement. The growth of mobile technology and increased access to affordable smartphones and internet services has particularly provided SMEs with the tools to engage in e-commerce and reach a wider audience.
The study further emphasised the importance of local government and institutional support in fostering a conducive environment for ICT adoption. These interventions could include the establishment of public-private partnerships to improve internet infrastructure, reduce the costs of ICT tools, and provide financial incentives for SMEs to invest in digital technologies. Programmes focused on building digital literacy among SME owners and employees would also enhance the capacity to leverage ICT effectively
Research emphasises the importance of integrating sustainable practices into digital transformation initiatives, (Al-Shammari Al-Dhuharis, & Al-Mudimigh, 2020).

Methodology
This study employed a mixed-methods approach to investigate the impact of digital transformation on Small and Medium-sized Enterprises (SMEs) in Anambra State, Nigeria.

Quantitative Method
A survey questionnaire was designed and administered on 300 SMEs in Anambra State, Nigeria. The questionnaire captured data on SME characteristics, digital transformation adoption, innovation, and performance.

Qualitative Method
In-depth interviews were conducted with 10 business owners of SMEs in selected firms in Anambra State, Nigeria. The interviews explored the challenges, opportunities, and policy implications of digital transformation for SME growth and development.

Data Analysis
The quantitative data was analysed to identify the relationships between digital transformation, innovation, and SME performance. The qualitative data was analysed to provide deeper insights into the challenges and opportunities faced by SMEs in adopting digital transformation.

Sampling Strategy
The study employed a stratified random sampling technique to select the SMEs for survey. The sample was stratified by industry, size, and location to ensure representation of diverse SMEs in Anambra State, Nigeria. For the in-depth interviews, a purposive sampling technique was used to select business owners who had adopted digital transformation in their SMEs.

Validity and Reliability
To ensure the validity and reliability of the findings, the study employed several strategies. These included: pilot-testing the survey questionnaire, using multiple data collection methods, and triangulating the data to ensure consistency.

Ethical Considerations
The study was conducted with ethical considerations in mind. Informed consent was obtained from the respondents, and confidentiality and anonymity were ensured throughout the data collection and analysis process.

Findings/Results
This study investigated the impact of digital transformation on SMEs in Anambra State, Nigeria. The findings of the study are presented below:

Challenges of Digital Transformation
The study found that SMEs in Anambra State, Nigeria face several challenges in adopting digital transformation. These challenges include:

1. Lack of infrastructure: 60% of the respondents reported that they lack access to reliable and affordable internet connectivity, which is a major barrier to digital transformation.
2. Skills gap: 55% of the respondents reported that they lack the necessary skills and expertise to effectively adopt and utilise digital technologies.
3. Financial constraints: 50% of the respondents reported that they lack the necessary financial resources to invest in digital transformation.

Opportunities of Digital Transformation
Despite the challenges, the study found that digital transformation also presents several opportunities for SMEs in Anambra State, Nigeria. These opportunities include:

1. Improved efficiency: 70% of the respondents reported that digital transformation has improved their operational efficiency and reduced costs.
2. Increased innovation: 60% of the respondents reported that digital transformation has enabled them to innovate and create new products and services.
3. Enhanced competitiveness: 55% of the respondents reported that digital transformation has improved their competitiveness and enabled them to compete with larger firms.

Policy Implications

The study's findings have several policy implications for supporting the adoption of digital transformation by SMEs in Anambra State, Nigeria. These implications include:

1) Infrastructure development: The government should invest in developing the necessary infrastructure, such as reliable and affordable internet connectivity, to support the adoption of digital transformation by SMEs.
2) Skills development: The government should provide training and development programmes to help SMEs develop the necessary skills and expertise to effectively adopt and utilise digital technologies.
3) Financial support: The government should provide financial support, such as grants and loans, to help SMEs invest in digital transformation.

Relationships between Digital Transformation, Innovation, and SMEs Performance

The study found significant positive relationships between digital transformation, innovation, and SMEs' performance. Specifically:

1. Digital transformation was found to have a significant positive impact on SME innovation ($r = 0.65$, $p < 0.01$).
2. Digital transformation was found to have a significant positive impact on SME performance ($r = 0.70$, $p < 0.01$).
3. Innovation was found to have a significant positive on SME performance ($r = 0.60$, $p < 0.01$).

Summary

These findings suggest that digital transformation is a key driver of innovation and performance in SMEs, and that policymakers and practitioners should prioritise supporting the adoption of digital transformation by SMEs.

Discussions

The findings of this study provide new insights into the impact of digital transformation on SMEs in Anambra State, Nigeria. The results show that digital transformation is positively correlated with SME performance, innovation, and competitiveness. These findings are consistent with previous study of Al-Shammari et al., (2020).

However, the study's findings also highlight the challenges faced by SMEs in adopting digital transformation, including lack of infrastructure, skills gap, and financial constraints. These challenges must be addressed by policymakers and practitioners to support the adoption of digital transformation by SMEs.

Conclusion

In conclusion, this study provides evidence that digital transformation has a significant positive impact on SMEs' performance, innovation, and competitiveness in Anambra State. The study's findings contribute to our understanding of the role of digital transformation in driving innovation and performance in SMEs.

The study's findings have implications for policymakers, practitioners, and SME owners. Policymakers should prioritise addressing the challenges faced by SMEs in adopting digital transformation, including lack of infrastructure, skills gap, and financial constraints.

Practitioners should support the adoption of digital transformation by SMEs, including providing training and development programmes to help SMEs develop the necessary skills and expertise.

Recommendations

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

1. Policymakers should provide financial support and incentives to SMEs to adopt digital transformation.
2. Practitioners should provide training and development programmes to help SMEs develop the necessary skills and expertise to adopt digital transformation.
3. SME owners should prioritise investing in digital transformation, including adopting digital technologies and developing digital skills.

Limitations

This study has several limitations, including the reliance on self-reported data from SME owners and managers, and the limited generalisability of the findings to other contexts. Future research should aim to address these limitations by using more objective measures of digital transformation and SME performance, and by examining the impact of digital transformation on SMEs in other contexts.

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