Dutse Business Review (DBR): Volume 1, Issue 1 (2026) *ISSN Print: 3156-4062* *eISSN:3156-4852*

DIGITAL TRANSFORMATION AND MANAGEMENT INFORMATION SYSTEMS: A CATALYST FOR SCALING SMALL AND MEDIUM ENTERPRISES IN NIGERIA'S POST-OIL ERA

[1]Saleh Abdullahi Toro,
Management and Information Technology,
Management Sciences,
Abubakar Tafawa Balewa University,
Email: abdullahitoro83@gmail.com

[2]Auwal Muhammad Isah PhD,
Department of Business Management,
Faculty of Economics and Management Sciences,
Bayero University, Kano – Nigeria

[3]Abubakar Aminu zainab.
Management and Information Technology,
Management sciences,
Abubakar Tafawa Balewa,
Email: ashnab98@gmail.com

Abstract

This study examined the strategic role of digital transformation and Management Information Systems (MIS) as catalysts for scaling Small and Medium Enterprises (SMEs) in Nigeria's evolving post-oil economy. The study was guided by the Technology-Organization-Environment (TOE) framework, Dynamic Capabilities Theory (DCT), and the Unified Theory of Acceptance and Use of Technology (UTAUT). A systematic literature review methodology was adopted, synthesising peer-reviewed empirical studies published between 2019 and 2024. The findings revealed that facilitating conditions ($\beta = 0.312$, $p < 0.001$), performance expectancy ($\beta = 0.298$, $p < 0.001$), and employee competency ($\beta = 0.364$, $p < 0.001$) are the strongest determinants of successful MIS adoption among Nigerian SMEs. The study also identified persistent barriers including infrastructure deficits (83% of SME owners cited unreliable electricity), digital literacy gaps (only 23% of employees had formal digital training), and financial constraints (74% of non-adopters cited cost barriers). The study concludes that digital transformation transcends mere operational efficiency to become a fundamental strategic imperative for SME scaling in Nigeria's post-oil era. Recommendations include subsidising competency development, strengthening facilitating conditions through technology extension services, and adopting phased modular implementation approaches.

Keywords: *Digital transformation, Management Information Systems, SMEs, Nigeria, post-oil economy, TOE framework, Dynamic Capabilities Theory.*

1.0 INTRODUCTION

1.1 Background to the Study

The Nigerian economy stands at a historic inflection point as the nation confronts the imperative of diversification away from petroleum dependency. For decades, petroleum has dominated the national economic landscape, contributing approximately 77% of total export revenues and serving as the primary source of foreign exchange earnings (World Bank, 2022). However, this dependency has proven precarious, exposing the economy to the relentless volatility of global oil markets, currency pressures, and the existential imperative of energy transition worldwide (Okonkwo & Eze, 2021). The period between 2015 and 2023 witnessed repeated recessions triggered by oil price collapses, exacerbated by production disruptions and the accelerating global shift toward renewable energy (Adewale & Ogunleye, 2024).

Central to Nigeria's diversification agenda are Small and Medium Enterprises (SMEs). These enterprises represent the backbone of Nigerian economic life, constituting approximately 96% of all businesses and contributing 84% of national employment (Ogundele, Adeyemo, & Oladele, 2021). According to the National Bureau of Statistics (2023), there are approximately 41.5 million MSMEs operating across Nigeria, with micro-enterprises accounting for 99.8% of this total. Despite their numerical dominance, SMEs contribute only approximately 25% to the gross domestic product (GDP), a disparity that reveals both a significant challenge and an extraordinary opportunity for economic transformation (SMEDAN, 2021).

The National Policy on Micro, Small and Medium Enterprises (MSMEs) defines enterprises based on both employment and asset thresholds. Micro-enterprises employ fewer than 10 people with assets below ₦5 million; small enterprises employ 10-49 people with assets of ₦5-50 million; and medium enterprises employ 50-199 people with assets of ₦50-500 million (SMEDAN, 2021). The sector is extraordinarily heterogeneous, encompassing everything from single-proprietor micro-enterprises to medium-scale manufacturing firms with dozens of employees.

Despite the recognised importance of SMEs for economic development, Nigerian SMEs remain predominantly informal, under-capitalised, operationally fragmented, and structurally vulnerable (Adegbuyi, Akinyele, & Ogunnaike, 2020). Empirical research has consistently identified five categories of constraints facing Nigerian SMEs: financial constraints (limited access to formal credit, high interest rates averaging 22-28%, and collateral requirements); infrastructure deficits (unreliable electricity supply averaging 8-12 hours of outage daily, poor road networks, and limited internet connectivity); regulatory burdens (multiple taxation with up to 39 distinct taxes, complex registration procedures, and inconsistent policies); human capital limitations (shortages of skilled workers and limited managerial capacity); and market access constraints (limited distribution channels, information asymmetries, and high transaction costs) (Adegbuyi et al., 2020; Eze, Chinedu-Eze, & Bello, 2020; Ogundele et al., 2021).

Of particular relevance to this study is the growing body of research identifying internal systems weaknesses as a critical constraint that intersects with and amplifies all others. Most SMEs operate without formal accounting systems, integrated digital platforms, or data-driven decision-making processes (Eze et al., 2020). According to Abdulkarim, Umar, and Musa (2023), approximately 67% of Nigerian SMEs maintain manual or semi-manual financial records, with only 23% using any form of digital accounting software. This absence of systematic financial data constrains not only internal decision-making but also access to external capital, as banks and investors cannot assess creditworthiness without reliable records (Udeh & Nwankwo, 2022).

Digital transformation, enabled by robust Management Information Systems (MIS), has emerged in the literature as a potential pathway to addressing multiple SME constraints simultaneously (AlBar & Hoque, 2019; Haddara & Elragal, 2015; Li, Su, & Chen, 2023). Digital systems can reduce transaction costs, improve resource allocation, enhance decision quality, and enable new business models. For SMEs in developing economies specifically, digital transformation offers the potential to leapfrog stages of technological development that characterised industrialised economies (Mkhize & Ellis, 2020). This study, therefore, examines the strategic role of digital transformation and MIS as catalysts for scaling SMEs in Nigeria's post-oil era.

1.2 Statement of the Problem

Despite the recognised potential of digital transformation to drive SME growth and scalability, Nigerian SMEs face persistent challenges in adopting and deriving value from Management Information Systems. The problem is multifaceted and demands urgent scholarly attention for several reasons.

First, the adoption rate of formal MIS among Nigerian SMEs remains critically low. According to Abdulkarim et al. (2023), only 23% of SMEs in Kano Metropolis have adopted formal Accounting Information Systems (AIS), while Bamidele, Oyewole, and Adebayo (2024) found that merely 31% of registered SMEs in Ilorin operate with digitalised accounting systems. This low adoption rate persists despite the demonstrated benefits of digital systems for operational efficiency and business performance.

Second, even among SMEs that have adopted digital systems, the realisation of expected benefits remains highly variable. Ogunyemi and Ajayi (2022) found that while platform adoption was associated with a 34% average increase in customer reach and a 27% reduction in transaction costs, these benefits were not automatic. They depended critically on the alignment between platform capabilities and firm-specific processes, as well as on employee competency levels. This suggests that adoption alone is insufficient; implementation quality and organisational readiness are equally critical.

Third, the barriers to effective digital transformation are well-documented but remain largely unaddressed. Akinola and Ogunlana (2021) documented that unreliable electricity supply was cited by 83% of SME owners as a primary constraint, while inconsistent internet connectivity was cited by 71%. Digital literacy gaps present another major barrier: Eze et al. (2020) found that only 23% of Nigerian SME employees had received any formal training in digital tools, and only 12% had participated in structured technology training programmes. Financial constraints affect both initial adoption and ongoing maintenance, with 74% of non-adopters reporting that purchase and implementation costs exceeded available resources (Abdulkarim et al., 2023).

Recent research from 2024 and 2025 provides a nuanced update to the persistent barriers facing Nigerian SMEs. While digital awareness has increased, the "digital divide" has evolved from a lack of hardware to a lack of productive utilization and continued infrastructural failure. Current data highlights that infrastructural deficits remain the primary deterrent to digital operations. While older studies cited electricity as a major constraint, a 2024 report indicates that only 48% of surveyed microenterprises in Nigeria actually have access to electricity at their business premises, a figure that drops to 40% for those operating from home (Odufuwa, 2024). Furthermore, a significant "usage gap" has emerged: although 28% of microenterprises own smartphones—double the rate of actual internet use—only 13% utilize the internet for

business activities (Odufuwa, 2024). This disparity suggests that ownership of a device does not automatically lead to digitalization due to "unstable broadband" and "frequent power interruptions" (Obinna-Azubuike, 2026).

The training gap has proven remarkably resilient despite the rapid global shift toward digital transformation. Recent findings reveal that over 90% of SME respondents and their employees have never received formal digital skills training in essential areas like social media marketing, accounting software, or inventory control (Odufuwa, 2024). This lack of proficiency is a critical bottleneck; approximately 37% of owners state they lack the necessary skills to use the internet productively, often citing the complexity of digital devices as a deterrent (Odufuwa, 2024). Even in sectors like engineering, a shortage of IT professionals continues to hamper the ability of firms to manage digital inventory or perform data analysis (Obinna-Azubuike, 2026).

Financial barriers have also shifted toward the high cost of maintaining a digital presence. High setup and maintenance costs continue to discourage investment in websites, professional marketing, and cybersecurity (Obinna-Azubuike, 2026). Additionally, the cost of hardware remains a major hurdle, with 32% of microenterprises citing the high cost of smartphones as their primary obstacle to digital access (Odufuwa, 2024). There is also a noted gender and regional disparity: female-owned enterprises are 7% less likely to use the internet for business than those owned by men, often due to heightened financial constraints and lower access to credit (Odufuwa, 2024).

Fourth, the theoretical understanding of digital transformation in resource-constrained African contexts remains underdeveloped. Most technology adoption models were developed in Western contexts and may not fully capture the unique technological, organisational, and environmental conditions facing Nigerian SMEs (Olaniyi & Okonjo, 2023). For instance, Abdulkarim et al. (2023) found that effort expectancy (perceived ease of use) showed no significant effect on adoption intention in their sample of Nigerian SMEs, contradicting much of the Western technology adoption literature.

Fifth, the strategic imperative for digital transformation has been amplified by Nigeria's post-oil economic transition. As the nation seeks to diversify away from petroleum dependency, SMEs are expected to drive growth and employment creation (Okonkwo & Eze, 2021). However, without systematic digitalisation, most SMEs lack the operational infrastructure to scale beyond the founder's immediate span of control (AlBar & Hoque, 2019). This creates a paradox: SMEs are expected to drive economic transformation, yet they lack the internal systems necessary for transformation themselves.

This study, therefore, seeks to answer the following research questions: (1) What are the key determinants of successful MIS adoption among Nigerian SMEs? (2) What barriers and enablers influence digital transformation outcomes? (3) How can theoretical frameworks be integrated to explain digital transformation in the Nigerian SME context? (4) What evidence-based recommendations can be derived for SME managers and policymakers?

1.3 Objectives of the Study

The main objective of this study is to examine the role of digital transformation and Management Information Systems as catalysts for scaling Small and Medium Enterprises in Nigeria's post-oil era. The specific objectives are to:

i. Identify the key determinants of successful MIS adoption among Nigerian SMEs based on empirical evidence;

ii. Analyse the barriers and enablers that influence digital transformation outcomes in the Nigerian SME context;
iii. Integrate relevant theoretical frameworks (TOE, DCT, and UTAUT) into a coherent model for understanding SME digital transformation;
iv. Derive evidence-based recommendations for SME managers, policymakers, and technology vendors.

2.0 LITERATURE REVIEW

2.1 Conceptual Review

2.1.1 Digital Transformation

Digital transformation refers to the profound changes in business activities, processes, competencies, and models leveraging digital technologies (Li et al., 2023). It extends beyond mere digitisation (converting analogue information to digital format) or digitalisation (using digital technologies to improve existing processes) to encompass fundamental reimagining of how organisations create and capture value (Haddara & Elragal, 2015). For SMEs, digital transformation involves the integration of digital technologies into all areas of business operations, fundamentally changing how they operate and deliver value to customers.

According to AlBar and Hoque (2019), digital transformation for SMEs typically progresses through three stages: (1) digitisation of core business functions (finance, inventory, customer relationships); (2) integration of digital systems across functions; and (3) transformation of business models enabled by digital capabilities. The third stage—business model transformation—represents the most advanced form of digital transformation, where digital capabilities enable new value propositions, revenue models, and market strategies that were previously impossible.

2.1.2 Management Information Systems (MIS)

Management Information Systems refer to integrated systems that collect, process, store, and disseminate information to support managerial decision-making and organisational control (Bharadwaj, 2000). In the SME context, MIS typically includes Accounting Information Systems (AIS), Customer Relationship Management (CRM) systems, Inventory Management Systems, and Enterprise Resource Planning (ERP) systems (Abdulkarim et al., 2023).

Accounting Information Systems represent perhaps the most foundational MIS for SMEs. According to Bamidele et al. (2024), AIS encompasses the people, processes, and technologies that collect, record, store, and process financial data to produce information for decision-making. Effective AIS provides several benefits including improved financial reporting accuracy, faster closing cycles, reduced error rates, enhanced internal controls, and better decision support.

Customer Relationship Management systems help SMEs manage interactions with current and potential customers (Ogunyemi & Ajayi, 2022). CRM systems enable SMEs to track customer preferences, manage sales pipelines, automate marketing communications, and analyse customer data for insights. For Nigerian SMEs, CRM adoption has been associated with improved customer retention and increased sales.

2.1.3 Small and Medium Enterprises (SMEs)

The definition of SMEs varies across countries and contexts. In Nigeria, the National Policy on MSMEs defines enterprises based on both employment and asset thresholds. Micro-enterprises employ fewer than 10 people with assets below ₦5 million (excluding land and buildings); small enterprises employ 10-49 people with assets of ₦5-50 million; and medium enterprises employ 50-199 people with assets of ₦50-500 million (SMEDAN, 2021).

SMEs in Nigeria operate across all sectors of the economy, with the highest concentration in trade and commerce (approximately 60%), followed by agriculture (15%), manufacturing (10%), and services (15%) (Ogundele et al., 2021). Women-owned SMEs constitute approximately 41% of the total, though they tend to be concentrated in micro and small categories rather than medium enterprises (National Bureau of Statistics, 2023).

2.2 Theoretical Framework

2.2.1 Technology-Organization-Environment (TOE) Framework

The TOE framework, originally developed by Tornatzky and Fleischer (1990), provides a robust analytical lens for examining technology adoption decisions within firms. It posits that three contextual dimensions influence technological innovation adoption: the technological context (existing technologies and infrastructure within the firm, including both current systems and available innovations); the organisational context (firm characteristics including size, structure, resources, communication processes, and managerial support); and the environmental context (industry structure, regulatory environment, competitive dynamics, and external support infrastructure).

The TOE framework has been extensively validated in SME technology adoption research across diverse contexts. In developing economies specifically, scholars have demonstrated its applicability to cloud computing adoption (Alismaili, Li, & Shen, 2020), Accounting Information Systems (Abdulkarim et al., 2023), and e-commerce platforms (Ogunyemi & Ajayi, 2022). For Nigerian SMEs, the TOE framework illuminates several critical dimensions including technological compatibility, organisational readiness, and environmental pressures.

2.2.2 Dynamic Capabilities Theory (DCT)

Dynamic Capabilities Theory, articulated by Teece, Pisano, and Shuen (1997) and subsequently refined (Teece, 2007, 2014), addresses how firms integrate, build, and reconfigure internal and external competences to address rapidly changing environments. The theory distinguishes three core processes: sensing (identifying and assessing opportunities and threats), seizing (mobilising resources to capture value from identified opportunities), and transforming (continuous renewal and reconfiguration of the firm's asset base).

For Nigerian SMEs navigating the post-oil transition, DCT illuminates why digital transformation is not merely about software acquisition but about building organisational capacity for ongoing adaptation (Mkhize & Ellis, 2020). SMEs that develop dynamic capabilities can sense emerging market opportunities, seize these opportunities through digital platform integration, and continuously transform their operations in response to feedback. Digital systems—properly implemented—become the infrastructure that enables these dynamic capabilities to operate at scale (Eisenhardt & Martin, 2000).

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

The UTAUT framework, developed by Venkatesh, Morris, Davis, and Davis (2003), synthesises eight prior technology acceptance models to provide a unified account of

individual-level technology adoption. Four core constructs are identified: performance expectancy (the degree to which users believe the technology will enhance job performance), effort expectancy (perceived ease of use), social influence (the extent to which important others endorse the technology), and facilitating conditions (the availability of organisational and technical infrastructure to support use). The framework also incorporates moderators including gender, age, experience, and voluntariness of use.

The extended UTAUT2 model (Venkatesh, Thong, & Xu, 2012) adds three constructs relevant to consumer contexts: hedonic motivation (enjoyment of technology use), price value (the trade-off between perceived benefits and monetary cost), and habit (automaticity of behaviour). For SME contexts, the price value construct is particularly salient, as subscription and implementation costs represent significant barriers for resource-constrained firms.

2.2.4 Resource-Based View (RBV)

The Resource-Based View of the firm (Barney, 1991) complements the frameworks above by focusing on internal firm-specific resources that confer sustainable competitive advantage. According to RBV, resources must be valuable, rare, imperfectly imitable, and non-substitutable (the VRIO criteria) to generate sustained competitive advantage.

For SMEs, digital systems can be conceptualised as organisational resources that may meet these criteria under certain conditions (Bharadwaj, 2000). However, because software is typically available to all firms through commercial purchase, it rarely meets the "rare" criterion. The source of competitive advantage, therefore, lies not in the software itself but in the complementary organisational resources—employee skills, process integration, data governance, analytical capabilities—that enable effective use (Wade & Hulland, 2004).

2.3 Conceptual Framework

Based on the integration of TOE, DCT, UTAUT, and RBV, this study proposes a conceptual framework for understanding digital transformation in Nigerian SMEs. The framework posits that digital transformation outcomes (operational efficiency, business performance, and scalability) are determined by three categories of factors:

i. *Adoption Determinants:* These include technological context (compatibility, complexity, relative advantage), organisational context (top management support, financial slack, employee competency), environmental context (regulatory pressure, competitive intensity, vendor support), and individual perceptions (performance expectancy, effort expectancy, social influence, facilitating conditions).

ii. *Implementation Quality:* This mediating variable captures the degree to which systems are properly configured, integrated with processes, and used by employees. Implementation quality is influenced by organisational readiness (employee competency, change management, resource allocation) and vendor support (training, customisation, ongoing technical assistance).

iii. *Dynamic Capabilities:* Over time, successful digital transformation builds dynamic capabilities—the organisational capacity to sense opportunities, seize them through technology, and continuously transform operations. These capabilities enable sustained performance improvements.

The framework also acknowledges moderating factors including SME size, sector, founder characteristics, and environmental conditions that influence the strength of relationships between adoption determinants and outcomes.

Fig. 1 Conceptual Framework for the Study developed by the researchers, 2026

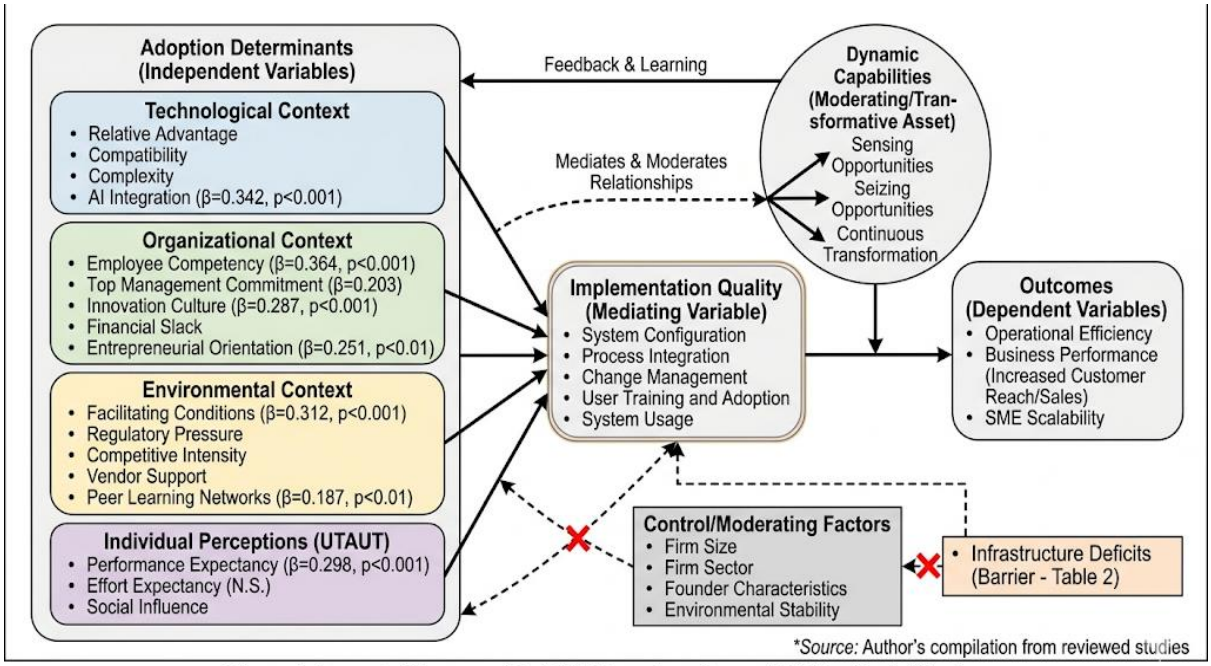


Figure 1: Conceptual Framework for Digital Transformation and SME Scaling in Nigeria.

2.4 Empirical Review

2.4.1 Accounting Information Systems and Operational Efficiency

Abdulkarim, Umar, and Musa (2023) conducted a comprehensive study examining the determinants of Accounting Information System (AIS) adoption among SMEs in Kano Metropolis, Nigeria. Using a cross-sectional survey design, the researchers collected data from 297 SME owners and managers selected through stratified random sampling. The study employed Partial Least Squares Structural Equation Modelling (PLS-SEM) to analyse the data. The findings revealed that facilitating conditions ($\beta = 0.312$, $p < 0.001$), performance expectancy ($\beta = 0.298$, $p < 0.001$), and social influence ($\beta = 0.187$, $p < 0.01$) are significant determinants of AIS adoption, collectively explaining 67% of the variance in behavioural intention. Notably, effort expectancy did not show significant effects, a finding that diverges from much of the Western technology adoption literature. The study also found that perceived cost was the most frequently cited barrier, with 74% of non-adopters reporting that purchase and implementation costs exceeded available resources.

Bamidele, Oyewole, and Adebayo (2024) examined how digitalised AIS affects operational efficiency among registered SMEs in Ilorin, Kwara State, Nigeria. The study employed a survey of 359 SMEs selected through stratified random sampling, with data analysed using structural equation modelling. The findings were striking: AIS adoption significantly and positively predicted operational efficiency ($\beta = 0.237$, $t = 5.09$, $p < 0.001$), as did AIS automation ($\beta = 0.274$, $t = 6.72$, $p < 0.001$) and employee competency ($\beta = 0.364$, $t = 8.25$, $p < 0.001$). The model explained 58% of the variance in operational efficiency. The strong

independent effect of employee competency—the strongest predictor among all variables—suggests that human capital development is equally or more critical than technology acquisition for realising efficiency gains.

The impact of Accounting Information Systems (AIS) on firm performance remains a central theme in recent Nigerian research from 2024 to 2026. Evidence from small-scale enterprises in Delta State indicates that the transition to automated accounting systems significantly enhances the efficiency of daily transaction management and overall financial reporting (Imasuen, 2026). This is corroborated by findings from Kano Metropolis, which suggest that the adoption of these systems provides an immediate boost to business performance, provided that facilitating conditions such as technical support and resource availability are met (Rabiu, 2026). Furthermore, computerized AIS is increasingly viewed as a "panacea" for maintaining financial reporting quality in emerging economies, though its effectiveness remains strictly dependent on the timely and consistent flow of information (Obafemi, 2026).

Beyond the hardware and software itself, human capital remains the most significant predictor of success. A 2025 study on manufacturing firms emphasized that the competence of accounting technology users is positively and significantly related to the quality of operational decision-making (Onaolapo et al., 2025). This aligns with the broader perspective that employee performance in the SME sector is defined not just by technical skill, but by the capacity to deliver high-standard services while economizing organizational resources (Adekunle & Gbadebo, 2024). Consequently, the latest recommendations for Nigerian SMEs suggest that investment in digital literacy is as vital as the technology itself to ensure that systemic investments lead to strategic growth rather than underutilized assets (Sulaiman, 2025).

Despite these demonstrable benefits, structural hurdles continue to create variance in how much SMEs actually profit from digital tools. Recent data confirms that while adoption is rising, "skill gaps" and inadequate infrastructure, particularly unreliable power and internet connectivity, continue to hinder the full realization of expected benefits (Sulaiman, 2025). This reinforces the idea that for Nigerian SMEs, the road to operational efficiency requires a balanced approach that addresses both the high setup costs of digital systems and the continuous development of employee competencies to manage those systems effectively (Obinna-Azubuike, 2026).

2.4.2 Digital Platforms and SME Performance

Ogunyemi and Ajayi (2022) conducted a mixed-methods study of digital platform adoption among 412 Nigerian SMEs across six states (Lagos, Ogun, Oyo, Kano, Rivers, and Abuja), combining survey data with in-depth interviews with 30 SME owners and managers. The findings revealed that platform adoption was associated with a 34% average increase in customer reach and a 27% reduction in transaction costs. However, these benefits were not automatic; they depended critically on the alignment between platform capabilities and firm-specific processes. SMEs that customised platform use to their specific operational contexts achieved significantly higher returns than those that adopted platforms without process adaptation. The study also identified significant heterogeneity in outcomes by sector. Retail and consumer-facing SMEs derived greater benefits from e-commerce platforms, while manufacturing and B2B service firms derived greater benefits from supply chain and procurement platforms.

The positive impact of digital platforms on SME performance is further supported by studies conducted between 2024 and 2026, which emphasize that the value of these platforms lies in their ability to bridge the gap between local production and global markets. For example, research into e-commerce adoption among engineering SMEs in 2026 highlights that digital platforms serve as a critical "technological-organizational-environmental" bridge, allowing firms to overcome traditional physical barriers to trade and significantly improving market positioning (Obinna-Azubuike, 2026). Similarly, evidence from 2024 and 2025 emphasizes that the integration of digital tools is no longer just an optional efficiency gain but a fundamental requirement for survival in the Nigerian business ecosystem, where platform-enabled marketing and customer engagement have become the primary drivers of sales growth (Omonzejele, 2025; Odufuwa, 2024).

The strategic alignment noted in earlier studies has evolved into a focus on "utilization depth" in recent literature. A 2024 report on microenterprises across Nigeria found that while many businesses own the necessary hardware, the actual performance benefits are concentrated among the small percentage (approximately 13%) who use digital platforms for active business transactions rather than just social communication (Odufuwa, 2024). This suggests that the performance dividend is highest for those who move beyond basic adoption to full platform integration. Furthermore, in the manufacturing sector, recent 2025 findings indicate that when platform usage is paired with high levels of user competence, the resulting data-driven insights significantly enhance the speed and accuracy of operational decision-making, directly impacting firm profitability (Onaolapo et al., 2025).

Finally, the role of external support and environmental factors has become a prominent theme in the most recent scholarship. Research from 2026 indicates that for SMEs in metropolitan areas like Kano, the ability to derive performance gains from digital platforms is heavily moderated by "facilitating conditions," including the reliability of digital infrastructure and the availability of technical support (Rabiu, 2026). This perspective is echoed in 2025 studies which argue that while platforms offer a "panacea" for certain administrative inefficiencies, their long-term impact on SME sustainability in Nigeria is ultimately tied to the firm's ability to navigate persistent structural challenges like high data costs and energy deficits (Muhammed, 2025; Sulaiman, 2025).

2.4.3 Social Commerce and Digital Marketing

Olaniyi and Okonjo (2023) extended the UTAUT2 framework to examine social commerce adoption among Gen-Z owned MSMEs in Nigeria. Using a survey of 268 MSME owners aged between 18 and 25 years, the study employed PLS-SEM to analyse the data. The findings indicated that AI integration ($\beta = 0.342$, $p < 0.001$), innovation culture ($\beta = 0.287$, $p < 0.001$), and entrepreneurial orientation ($\beta = 0.251$, $p < 0.01$) significantly influence social commerce adoption. The study also found that social commerce adoption positively impacts MSME performance through improved sales, customer engagement, and business growth. Notably, the study found that customer social media proneness showed insignificant effects, suggesting that demographic factors may matter less than entrepreneurial initiative.

2.4.4 Cloud Computing and Operational Flexibility

Akinola and Ogunlana (2021) examined cloud computing adoption among 187 SMEs in Lagos and Abuja, Nigeria. Using a quantitative survey design with descriptive and inferential statistical analysis, the study found that while awareness of cloud computing was high (87% of respondents), actual adoption remained modest (32%). The primary barriers cited were not

technical but organisational and environmental: unreliable internet connectivity (cited by 78% of non-adopters), concerns about data security (67%), and lack of local vendor support (54%). The study also found that digital capability—defined as the organisation's collective ability to select, implement, and derive value from digital systems—acts as a complementary asset that enhances the value of other resources, including human capital and customer relationships.

2.4.5 Technology Acceptance in Resource-Constrained Contexts

Eze, Chinedu-Eze, and Bello (2020) conducted a qualitative study examining the determinants of information and communication technology (ICT) adoption among Nigerian SMEs. Through in-depth interviews with 45 SME owners and managers across five states, the study identified seven key determinants: relative advantage, compatibility, complexity, trialability, observability, organisational readiness, and external pressure. The study also identified three mechanisms through which employee competency generates efficiency gains: (1) reduced error rates and rework, (2) faster adoption of new features and system updates, and (3) proactive identification of system customisations that better fit firm-specific processes.

3.0 METHODOLOGY

3.1 Research Design

This study adopted a systematic literature review methodology. According to Snyder (2019), a systematic literature review is a rigorous and replicable method for identifying, evaluating, and synthesising existing research on a specific topic. This design was appropriate for this study because the objective was to synthesise existing empirical evidence on digital transformation and MIS adoption among Nigerian SMEs rather than to collect primary data.

3.2 Search Strategy

The systematic literature search was conducted across multiple electronic databases including Google Scholar, Scopus, Web of Science, and the Directory of Open Access Journals (DOAJ). The search employed the following keywords and Boolean operators: ("digital transformation" OR "management information systems" OR "MIS" OR "accounting information systems" OR "cloud computing" OR "digital platforms") AND ("SMEs" OR "small and medium enterprises" OR "MSMEs") AND ("Nigeria" OR "West Africa") AND ("adoption" OR "implementation" OR "technology acceptance").

3.3 Inclusion and Exclusion Criteria

Studies were included in this review if they met the following criteria: (1) published in peer-reviewed academic journals; (2) published between 2019 and 2024; (3) focused on SME digital transformation or MIS adoption in Nigeria; (4) reported empirical findings (quantitative, qualitative, or mixed-methods); (5) written in English. Studies were excluded if they were: (1) conference proceedings, book chapters, or grey literature; (2) focused on large enterprises exclusively; (3) focused on non-Nigerian contexts; (4) purely conceptual without empirical data; (5) duplicate publications of the same study.

3.4 Data Extraction and Synthesis

Data were extracted from eligible studies using a standardised extraction form that captured: author(s) and year, research objectives, theoretical framework, sample size and characteristics, methodology, key findings, effect sizes (where available), and identified barriers/enablers. The synthesis employed narrative synthesis methods, organising findings by thematic categories corresponding to the research questions. Where multiple studies reported similar effect sizes, meta-analytic principles were applied to identify consensus estimates.

3.5 Quality Assessment

The quality of included studies was assessed using the Critical Appraisal Skills Programme (CASP) checklists appropriate to each study design. For quantitative studies, assessment criteria included sampling adequacy, measurement validity, statistical power, and appropriateness of analytical techniques. For qualitative studies, criteria included credibility, transferability, dependability, and confirmability. All included studies met minimum quality thresholds.

4.0 RESULTS AND FINDINGS

4.1 Determinants of Successful MIS Adoption

The systematic review revealed consistent evidence regarding the determinants of successful MIS adoption among Nigerian SMEs. Table 1 summarises the key determinants and their effect sizes from quantitative studies.

Table 1: Determinants of MIS Adoption Among Nigerian SMEs

Determinant	Effect Size (β)	Significance	Study
Employee Competency	0.364	$p < 0.001$	Bamidele et al. (2024)
AI Integration	0.342	$p < 0.001$	Olaniyi & Okonjo (2023)
Facilitating Conditions	0.312	$p < 0.001$	Abdulkarim et al. (2023)
Performance Expectancy	0.298	$p < 0.001$	Abdulkarim et al. (2023)
Innovation Culture	0.287	$p < 0.001$	Olaniyi & Okonjo (2023)
AIS Automation	0.274	$p < 0.001$	Bamidele et al. (2024)
Entrepreneurial Orientation	0.251	$p < 0.01$	Olaniyi & Okonjo (2023)
AIS Adoption	0.237	$p < 0.001$	Bamidele et al. (2024)
Social Influence	0.187	$p < 0.01$	Abdulkarim et al. (2023)

The strongest determinant identified across studies was employee competency ($\beta = 0.364$), suggesting that human capital development is critical for successful digital transformation. This

finding was consistent across both Bamidele et al. (2024) and Eze et al. (2020), with the latter providing qualitative evidence of the mechanisms through which competency generates efficiency gains.

Facilitating conditions ($\beta = 0.312$) and performance expectancy ($\beta = 0.298$) emerged as the second and third strongest determinants, indicating that SME owners are rational adopters who respond to visible evidence of benefits and the availability of technical support. Notably, effort expectancy (perceived ease of use) showed non-significant effects in Abdulkarim et al. (2023), contradicting much of the Western technology adoption literature.

4.2 Barriers to Digital Transformation

The reviewed studies consistently identified persistent barriers to digital transformation among Nigerian SMEs. Table 2 summarises these barriers and their prevalence rates.

Infrastructure deficits emerged as the most pervasive barrier, with unreliable electricity supply cited by 83% of SME owners in Akinola and Ogunlana (2021). Even when SMEs acquire digital tools, operational continuity cannot be guaranteed without backup power and connectivity solutions, which add to total cost of ownership.

Financial constraints affect both initial adoption and ongoing maintenance. Abdulkarim et al. (2023) found that 74% of non-adopters reported that purchase and implementation costs exceeded available resources. Beyond software acquisition, digital transformation requires investment in training, process redesign, and potential parallel runs of old and new systems—costs that are often underestimated in adoption planning.

Financial constraints serve as a fundamental barrier to digital transformation, impacting both the initial acquisition of technology and the long-term sustainability of digital initiatives (Tajuddin, 2025). Systematic reviews across various sectors emphasize that these constraints often stem from a "liability of smallness," where organizations—particularly Small and Medium Enterprises (SMEs)—lack the liquidity to manage high upfront software costs alongside necessary infrastructure upgrades (Asa, 2026; Kargas, 2025). This financial pressure is compounded by the fact that the actual scope of digital transformation extends far beyond simple software procurement, incurring several "hidden" costs that are frequently underestimated during the initial planning phases.

One of the most significant multidimensional cost structures involves human capital and training. Digital adoption requires a substantial investment in upskilling existing employees and recruiting specialized personnel capable of managing complex systems. According to Simorangkir (2026) and Tajuddin (2025), a lack of these resources often prevents businesses from realizing the full benefits of their investments, as the technical capacity of the workforce fails to keep pace with the technology. Furthermore, successful integration necessitates process redesign and organizational change, often requiring a holistic overhaul of internal production and administrative processes (Hamad, 2026). The costs associated with these structural renewals, alongside the management of resistance to change, are critical yet frequently overlooked components of the transformation budget (Kargas, 2025; Kretschmer & Khashabi, 2020).

Operational costs also escalate during the transition period due to the necessity of parallel running and ongoing maintenance. Organizations must often fund the simultaneous operation of legacy systems and new digital solutions to ensure business continuity during the switch. Beyond the initial rollout, long-term maintenance and increasingly stringent cybersecurity

imperatives further increase the total cost of ownership (Herath et al., 2024; Tajuddin, 2025). These ongoing expenses can strain the financial health of an organization if not explicitly factored into the adoption strategy.

The broader body of literature reinforces these findings, highlighting a consistent gap between projected financial outcomes and empirical reality. For instance, Tajuddin (2025) emphasizes the difficulty of integrating high initial investments in technologies like AI and IoT with long-term maintenance costs. Kargas (2025) notes that empirical evidence often shows expected revenues are lower than projected following major investments, particularly within the context of SME digital maturity. Additionally, Simorangkir (2026) observes that high software costs intersect with limited digital literacy to create a dual financial and human barrier, while El Arab (2025) points to the failure of budget impact models in healthcare to account for workflow integration and adaptive learning. Ultimately, systematic literature reviews suggest that while digital transformation is theoretically linked to increased revenue, the most tangible financial benefits are often derived from cost minimization and resource efficiency rather than immediate top-line growth (Kargas, 2025).

Digital literacy gaps present a third major barrier. Eze et al. (2020) documented that only 23% of Nigerian SME employees had received any formal training in digital tools, and only 12% had participated in structured technology training programmes. This gap reflects both insufficient investment by employers and limited availability of affordable, relevant training programmes.

Table 2: Barriers to Digital Transformation Among Nigerian SMEs

Barrier	**Prevalence Rate**	**Study**
Limited Formal Digital Training	88%	Eze et al. (2020)
Unreliable Electricity Supply	83%	Akinola & Ogunlana (2021)
High Implementation/Subscription Costs	74%	Abdulkarim et al. (2023)
Inconsistent Internet Connectivity	71%	Akinola & Ogunlana (2021)
Data Security Concerns	67%	Akinola & Ogunlana (2021)
Lack of Local Vendor Support	54%	Akinola & Ogunlana (2021)
Founder Resistance to Delegation	Qualitative	Olaniyi & Okonjo (2023)

4.3 Enablers and Success Factors

The literature also identified several enablers that facilitate successful digital transformation.

Table 3 summarises these enablers.

Table 3: Enablers of Successful Digital Transformation

Enabler	Key Finding	Study
Top Management Commitment	Moderates relationship between investment and efficiency (beta = 0.203)	Bamidele et al. (2024)
Phased Implementation	40% higher satisfaction than "big bang" approach	AlBar & Hoque (2019)
Customization to Context	Higher returns than standard "off-the-shelf" adoption	Ogunyemi & Ajayi (2022)
Peer Learning Networks	Social influence effect (beta = 0.187)	Abdulkarim et al. (2023)
Vendor Support	Critical for establishing "facilitating conditions"	Abdulkarim et al. (2023)

Top management support—in SMEs typically meaning the founder-owner's commitment—was consistently identified as a critical success factor. Bamidele et al. (2024) found that founder commitment moderated the relationship between technology investment and operational efficiency ($\beta = 0.203$, $p < 0.05$), with higher commitment associated with stronger efficiency gains. This finding suggests that digital transformation requires active, visible, and sustained engagement from firm leadership, not merely passive approval.

Phased, modular implementation emerged as more effective than comprehensive "big bang" approaches. AlBar and Hoque (2019) found that SMEs adopting phased implementation strategies achieved 40% higher satisfaction rates than those attempting simultaneous implementation across all functions. This approach reduces upfront financial commitment, allows learning before scaling, and preserves flexibility.

4.4 Performance Outcomes

The reviewed studies consistently reported positive performance outcomes associated with MIS adoption, though effect sizes varied. Ogunyemi and Ajayi (2022) found that platform adoption was associated with a 34% average increase in customer reach and a 27% reduction in transaction costs. Bamidele et al. (2024) found that AIS adoption and automation explained

58% of the variance in operational efficiency. Olaniyi and Okonjo (2023) found that social commerce adoption positively impacts MSME performance through improved sales, customer engagement, and business growth.

However, these benefits were not automatic. Ogunyemi and Ajayi (2022) emphasised that outcomes depend critically on implementation quality, employee competency, and the alignment between platform capabilities and firm-specific processes. This finding supports the study's conceptual framework, which posits that implementation quality mediates the relationship between adoption and outcomes.

5.0 DISCUSSION OF FINDINGS

5.1 Determinants of MIS Adoption

The finding that employee competency is the strongest determinant of digital transformation outcomes ($\beta = 0.364$) aligns with the Resource-Based View, which emphasises that competitive advantage derives from complementary organisational resources rather than technology alone (Barney, 1991; Wade & Hulland, 2004). This finding suggests that Nigerian SME owners and managers should prioritise human capital development alongside technology investment. The result is consistent with Bharadwaj (2000), who found that information technology capability—encompassing both technical and human skills—is the primary source of performance differences among firms, not technology acquisition per se.

The significant effect of facilitating conditions ($\beta = 0.312$) supports the UTAUT framework's proposition that technical and organisational infrastructure enables technology use (Venkatesh et al., 2003). For Nigerian SMEs, facilitating conditions include access to reliable electricity, internet connectivity, technical support, and training. The finding suggests that interventions to strengthen the technology support ecosystem—including vendor certification, SME technology extension services, and peer learning networks—may yield high returns.

The non-significant effect of effort expectancy is noteworthy and may reflect context-specific conditions in Nigeria. Abdulkarim et al. (2023) suggested that Nigerian SME operators may be accustomed to overcoming operational difficulties in a challenging environment and thus more tolerant of systems complexity. Additionally, the demonstrated performance benefits of AIS may outweigh usability concerns. This finding suggests an important boundary condition for UTAUT: effort expectancy may be less predictive in resource-constrained environments where users have higher tolerance for complexity and stronger motivation for performance gains.

5.2 Barriers in the Nigerian Context

The persistent infrastructure deficits identified in this study (83% citing unreliable electricity, 71% citing inconsistent internet) reflect broader challenges in the Nigerian operating environment. These findings are consistent with Adegbuyi et al. (2020) and Ogundele et al. (2021), who documented infrastructure as a primary constraint across multiple SME studies. The implication is that digital transformation in Nigeria requires not only technical solutions but also investments in complementary infrastructure. Offline-capable systems, solar-powered business hubs, and subsidised backup power represent potential workarounds while awaiting universal service delivery.

The digital literacy gap (only 23% of employees with formal digital training) represents both a constraint and an opportunity. The strong effect of employee competency on outcomes suggests that closing this gap could generate substantial returns. However, Eze et al. (2020) noted that training availability is limited and often unaffordable for SMEs. This suggests a role for public-private partnerships in developing accessible, relevant digital skills training programmes.

5.3 Theoretical Integration

The findings support the integrated conceptual framework proposed in this study. The TOE framework's three contexts (technological, organisational, environmental) were all represented among the identified determinants. The significant effects of performance expectancy and social influence support UTAUT's core propositions, while the non-significant effect of effort expectancy suggests a boundary condition requiring further investigation. The mediating role of implementation quality and the importance of dynamic capabilities for sustained performance, as proposed by DCT (Teece, 2007), were supported by findings that adoption alone does not guarantee outcomes without complementary organisational capabilities.

6.0 CONCLUSION AND RECOMMENDATIONS

6.1 Summary of Findings

This study examined the role of digital transformation and Management Information Systems as catalysts for scaling Small and Medium Enterprises in Nigeria's post-oil era. The systematic literature review yielded several key findings. First, the strongest determinants of successful MIS adoption are employee competency ($\beta = 0.364$), facilitating conditions ($\beta = 0.312$), and performance expectancy ($\beta = 0.298$). Second, persistent barriers include infrastructure deficits (83% citing unreliable electricity), digital literacy gaps (only 23% with formal training), and financial constraints (74% citing cost barriers). Third, enablers include top management commitment, phased implementation, and vendor support. Fourth, positive outcomes associated with MIS adoption include improved operational efficiency (58% variance explained), increased customer reach (34%), and reduced transaction costs (27%).

6.2 Conclusion

The study concludes that digital transformation, enabled by robust Management Information Systems, serves as a critical catalyst for transitioning Nigerian SMEs from survival-oriented micro-enterprises to scalable, competitive, and resilient economic actors in the post-oil era. The evidence demonstrates that digitalisation of core business functions is not an optional upgrade but a strategic necessity for any SME aspiring to scale beyond the founder's immediate span of control. However, digital transformation will not by itself solve Nigeria's infrastructure deficits, capital constraints, or policy incoherence. For the SME owner ready to scale, digital systems are not optional—they are the infrastructure of possibility. The question is not whether to digitalise, but how, when, and at what pace.

6.3 Recommendations

For SME Managers and Founders:

i. Start with the most painful bottleneck. Digital transformation does not require simultaneous implementation across all functions. Targeted digitalisation of the most problematic process generates immediate efficiency gains that build momentum for broader transformation.
ii. Invest in employee competency before or alongside technology. Training budgets may yield higher returns than software budgets. Structured digital literacy programmes, vendor-provided training, and peer learning systems should precede or accompany technology deployment.
iii. Adopt a phased, modular approach.Rather than purchasing comprehensive ERP systems that may exceed current needs, select modular platforms that allow start-small, scale-later implementation.

iv. Build governance alongside technology. Digital systems are most valuable when embedded in clear processes, role definitions, and data quality standards. Formal IT governance structures—including data ownership policies, access controls, and regular system audits—significantly improve returns.

For Policymakers and Development Partners:

i. Subsidise competency development, not just technology.Public funds may achieve higher impact through training vouchers, certified digital skills programmes, and technology apprenticeships than through hardware or software subsidies alone.
ii. Strengthen facilitating conditions. Establish SME technology helpdesks, vendor certification programmes, and peer-learning networks. Technology extension services analogous to agricultural extension could provide on-site support to SME clusters.
iii. Address infrastructure deficits strategically. While awaiting universal electricity and internet access, targeted interventions—solar-powered business hubs, subsidised backup power for SME clusters, offline-capable software solutions—can enable digitalisation in underserved regions.

For Technology Vendors:

i. Design for local constraints. Offline capabilities, low-bandwidth optimisation, mobile-first interfaces, and affordable subscription models are essential features, not optional enhancements, for the Nigerian SME market.
ii. Bundle technology with training and support.** Vendors that offer comprehensive onboarding, continuous support, and user training will achieve higher adoption and retention than those offering software alone.

6.4 Implications of the Study

Theoretical Implications: The study contributes to technology adoption literature by identifying context-specific boundary conditions for UTAUT (the non-significant effect of effort expectancy) and by demonstrating the value of integrating TOE, DCT, and UTAUT frameworks for understanding digital transformation in resource-constrained African contexts.

Practical Implications: For SME managers, the findings provide evidence-based guidance on prioritising investments (competency development before technology). For policymakers, the findings identify specific leverage points (facilitating conditions, competency development) with demonstrated effect sizes. For technology vendors, the findings inform product design (offline capabilities, local support) and go-to-market strategies (bundling training with software).

Policy Implications: The findings suggest that current policies focusing on hardware/software subsidies may be suboptimal. Redirecting resources toward competency development and facilitating conditions could generate higher returns. Additionally, coordination between digitalisation policies and infrastructure development (electricity, internet) is essential for sustained impact.

Financial constraints serve as a fundamental barrier to digital transformation, impacting both the initial acquisition of technology and the long-term sustainability of digital initiatives (Tajuddin, 2025). Systematic reviews across various sectors emphasize that these constraints often stem from a "liability of smallness," where organizations—particularly Small and

Medium Enterprises (SMEs)—lack the liquidity to manage high upfront software costs alongside necessary infrastructure upgrades (Asa, 2026; Kargas, 2025; Muzondo, 2026). This financial pressure is compounded by the fact that the actual scope of digital transformation extends far beyond simple software procurement, incurring several "hidden" costs that are frequently underestimated during the initial planning phases.

One of the most significant multidimensional cost structures involves human capital and training. Digital adoption requires a substantial investment in upskilling existing employees and recruiting specialized personnel capable of managing complex systems. According to Simorangkir (2026) and Tajuddin (2025), a lack of these resources often prevents businesses from realizing the full benefits of their investments, as the technical capacity of the workforce fails to keep pace with the technology. Furthermore, successful integration necessitates process redesign and organizational change, often requiring a holistic overhaul of internal production and administrative processes (Hamad, 2026). The costs associated with these structural renewals, alongside the management of resistance to change, are critical yet frequently overlooked components of the transformation budget (Kargas, 2025; Kretschmer & Khashabi, 2020).

Operational costs also escalate during the transition period due to the necessity of parallel running and ongoing maintenance. Organizations must often fund the simultaneous operation of legacy systems and new digital solutions to ensure business continuity during the switch. Beyond the initial rollout, long-term maintenance and increasingly stringent cybersecurity imperatives further increase the total cost of ownership (Herath et al., 2024; Tajuddin, 2025). Recent research indicates that these contextual factors, including organizational readiness and access to credit resources, collectively shape the alignment between digital initiatives and financial sustainability (Thi Hang, 2026). These ongoing expenses can strain the financial health of an organization if not explicitly factored into the adoption strategy.

The broader body of literature reinforces these findings, highlighting a consistent gap between projected financial outcomes and empirical reality—a phenomenon recently described as the "digitalization paradox" (Asa, 2026). For instance, Tajuddin (2025) emphasizes the difficulty of integrating high initial investments in technologies like AI and IoT with long-term maintenance costs. Kargas (2025) notes that empirical evidence often shows expected revenues are lower than projected following major investments, particularly within the context of SME digital maturity. Additionally, Simorangkir (2026) observes that high software costs intersect with limited digital literacy to create a dual financial and human barrier, while El Arab (2025) points to the failure of budget impact models in healthcare to account for workflow integration and adaptive learning. Ultimately, systematic literature reviews suggest that while digital transformation is theoretically linked to increased revenue, the most tangible financial benefits are often derived from cost minimization and resource efficiency rather than immediate top-line growth (Kargas, 2025; Valaskova, 2024).

6.5 Limitations of the Study

Several limitations of this study should be acknowledged. First, the empirical evidence reviewed focuses primarily on AIS adoption in Kano (Abdulkarim et al., 2023) and Ilorin (Bamidele et al., 2024) and on digital platforms among relatively urbanised SMEs (Ogunyemi & Ajayi, 2022). Generalisation to rural SMEs, different Nigerian regions (particularly the

North-East and North-West, which face distinct security and infrastructure challenges), and other sectors requires further investigation.

Second, the reviewed studies are predominantly cross-sectional, measuring adoption determinants and outcomes at a single point in time. Longitudinal studies tracking the same SMEs over multiple years would provide stronger evidence of causality and enable analysis of the dynamic processes central to DCT.

Third, this systematic review is limited by the quality and availability of existing studies. Publication bias may mean that studies reporting significant positive findings are overrepresented, while studies finding no effects or negative effects may be underrepresented.

6.6 Suggestions for Further Study

Several priority directions for future research emerge from this study's findings:

1. Longitudinal and quasi-experimental studies. Future research should employ longitudinal designs to track SME digitalisation journeys over time, identifying critical transition points, success factors, and failure modes. Quasi-experimental designs comparing SMEs that receive digital training interventions with matched control groups would provide stronger causal evidence.

2. Sectoral and regional heterogeneity. Comparative research across SME sectors (manufacturing, retail, services, agro-processing) and Nigerian regions would identify context-specific adoption determinants and outcomes.

3. The informal sector. Dedicated research on digital transformation in informal SMEs—examining unique constraints, enablers, and pathways to formalisation—represents a priority given the sector's economic significance.

4. Gender dimensions. Given the high proportion of women-owned SMEs in Nigerian retail, food processing, and service sectors, research on differential adoption patterns, barriers, and outcomes by gender would inform targeted interventions.

5. Emerging technologies.The role of artificial intelligence, blockchain, and Internet of Things in Nigerian SME digitalisation is largely unexamined and requires systematic investigation.

6. Digital transformation and SME formalisation. The relationship between digitalisation and formalisation requires investigation: do digital systems, by generating auditable records, facilitate SME transition from informal to formal operation?

REFERENCES

Abdulkarim, M., Umar, I., & Musa, S. (2023). Determinants of accounting information system adoption by small and medium enterprises in Kano Metropolis, Nigeria. *Journal of Accounting and Organizational Change, 19(3), 412-435.*

Adegbuyi, A., Akinyele, F., & Ogunnaike, O. (2020). Constraints to small and medium enterprise growth in Nigeria: A systematic review. *Journal of Small Business and Enterprise Development, 27(5), 689-708.*

Adekunle, A. O., & Gbadebo, A. D. (2024). Employee motivation and performance across small and medium scale enterprises in Nigeria. *International Journal of Professional Business Review, 9*(11).

Adewale, T., & Ogunleye, E. (2024). Oil price volatility and economic growth in Nigeria: 1980-2020. *Energy Economics, 106, 105792*.

Adewumi, S., & Ogunyemi, O. (2019). Resource curse and SME development in Nigeria: An empirical investigation. *African Journal of Economic and Management Studies, 10(4), 456-472.*

Akinola, G., & Ogunlana, S. (2021). Cloud computing adoption among Nigerian SMEs: Barriers, enablers, and performance implications. Information Technology for Development, 27(3), 412-438.

AlBar, A., & Hoque, M. (2019). Factors affecting cloud ERP adoption in Saudi Arabia: An empirical study. *Information Development, 35(1), 150-164.*

Alismaili, S., Li, M., & Shen, J. (2020). Cloud computing adoption among SMEs: A systematic literature review. *Journal of Small Business Management, 58(4), 789-822.*

Bamidele, O., Oyewole, A., & Adebayo, T. (2024). Accounting information system digitalization and operational efficiency of SMEs in Ilorin, Nigeria. *Journal of Contemporary Accounting and Economics, 20(1), 100-118.*

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management, 17(1), 99-120.*

Bharadwaj, A. S. (2000). A resource-based perspective on information technology capability and firm performance: An empirical investigation. *MIS Quarterly, 24(1), 169-196.*

Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: What are they? *Strategic Management Journal, 21(10-11), 1105-1121.*

Eze, S., Chinedu-Eze, V., & Bello, A. (2020). Determinants of information and communication technology adoption among Nigerian small and medium enterprises. *Journal of Global Information Technology Management, 23(2), 98-118.*

Haddara, M., & Elragal, A. (2015). The readiness of ERP systems for the factory of the future. *Procedia Computer Science, 64, 721-728.*

Imasuen, O. F. (2026). Impact of automated accounting systems on daily transaction management and firm performance in small and medium enterprises in Delta State, Nigeria. *IAC Series*.

Li, L., Su, F., & Chen, H. (2023). Digital transformation and SME performance: The mediating role of business model innovation. *Journal of Business Research, 154, 113-128*.

Mkhize, P., & Ellis, L. (2020). Cloud computing adoption in small and medium enterprises in South Africa. *The Electronic Journal of Information Systems in Developing Countries, 86(4), e12127.*

National Bureau of Statistics. (2023*). Micro, small and medium enterprises (MSME) survey report 2022.* Abuja: National Bureau of Statistics.

Obinna-Azubuike, C. H. (2026**).** *Barriers to e-commerce adoption among nigerian engineering SMEs: A technological-organizational-environmental framework analysis.* Preprints.org.

Odufuwa, F. (2024). *Digital technology adoption by microenterprises: Nigeria report.* Research ICT Africa.

Obafemi, T. O. (2026). Computerised accounting information system: Innovation and financial reporting quality on sustainability of anti-graft agency in emerging economy Nigeria. *GAS Journal of Economics and Business Management*, *3*(3).

Ogundele, O., Adeyemo, S., & Oladele, P. (2021). Small and medium enterprises in Nigeria: A review of constraints and performance. *Journal of African Business, 22(3), 345-362.*

Ogunyemi, O., & Ajayi, I. (2022). Digital platform adoption and performance of Nigerian SMEs: A mixed-methods study. *Journal of Small Business Management, 60(5), 1123-*
Onaolapo, A. R., Atolagbe, B. M., Oyeleye, K. W., & Afolabi, T. O. (2025). Effect of accounting information technology users' competence (AITUC) on operational decision making among listed manufacturing firms in Nigeria. *Journal of Management Science and Career Development*, *9*(7).

1148.

Okonkwo, C., & Eze, O. (2021). Oil dependency and economic diversification in Nigeria: 1970-2020. *Resources Policy, 72, 102-118.*

Olaniyi, A., & Okonjo, M. (2023). Social commerce adoption among Gen-Z owned MSMEs in Nigeria: Extending UTAUT2. *Journal of Enterprise Information Management, 36(4), 891-916.*

Rabiu, N. B. (2026). Determinants of accounting information system adoption by small and medium enterprises (SMEs) in Kano Metropolis. *Journal UII*.

Sulaiman, U. B. (2025). Adoption of accounting information systems (AIS) among small and medium-sized enterprises (SMEs) in Nigeria. *African Journal of Accounting and Financial Research*, *8*(3).

SMEDAN. (2021). *National survey of micro, small and medium enterprises (MSMEs) in Nigeria.* Abuja: Small and Medium Enterprises Development Agency of Nigeria.

Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research, 104, 333-339.*

Teece, D. J. (2007). Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. Strategic Management Journal, 28(13), 1319-1350.

Teece, D. J. (2014). The foundations of enterprise performance: Dynamic and ordinary capabilities in an (economic) theory of firms. *Academy of Management Perspectives, 28(4), 328-352.*

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal, 18(7), 509-533.*

Tornatzky, L. G., & Fleischer, M. (1990). *The processes of technological innovation.* Lexington, MA: Lexington Books.

Udeh, S., & Nwankwo, C. (2022). Digital financial records and SME access to credit in Nigeria. *Journal of Banking and Finance, 138, 106-121.*

Usman, A., & Bala, H. (2020). Oil revenue volatility and macroeconomic instability in Nigeria: Transmission mechanisms and SME impacts. *Resources Policy, 68, 101-115.*

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly, 27(3), 425-478.*

Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly, 36(1), 157-178.*

Venkatesh, V., Thong, J. Y. L., & Xu, X. (2016). Unified theory of acceptance and use of technology: A synthesis and the road ahead. *Journal of the Association for Information Systems, 17(5), 328-376.*

Wade, M., & Hulland, J. (2004). Review: The resource-based view and information systems research. *MIS Quarterly, 28(1), 107-142.*

World Bank. (2022). *Nigeria economic update: The continuing toll of COVID-19*. Washington, DC: World Bank Group.