

DIGITAL TRANSFORMATION AND PERFORMANCE OF SMALL AND MEDIUM ENTERPRISES IN OGUN STATE, NIGERIAADEKUNLE Adefemi¹ALAO Abiodun E²ADEKUNLE Adeola Ahbeeb³SALAMI Wasiu⁴^{1, 2, 3, 4} Department of Marketing,

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Abstract

Small and Medium Enterprises (SMEs) are vital to economic development, particularly in advancing industrialisation and employment. However, SMEs in Ogun State, Nigeria face challenges due to limited digital transformation (DT) capabilities. As the global business landscape rapidly digitises, SMEs in Nigeria risk lagging behind due to low technology adoption, poor digital literacy, and inadequate digital infrastructure. This study examined effect of DT in terms of technology access, digital skill and operational integration on performance of SMEs in Ogun State, Nigeria. The study employed descriptive research. Its population comprised 126 SMEs in 5 local government areas of Ogun State, Nigeria. The study took a census, and sampled 504 owners and managers of SMEs in food and beverages, agro-allied and animal feeds, plastic and rubber, and wood furnishing and fittings across. Data were collected using a structured questionnaire whose reliability was confirmed using the Cronbach's Alpha test. Data analysis was done using frequencies and percentages while test of hypotheses was done using the linear regression statistics. The study found that technology access, digital skills and operational integration all have significant positive effect on SMEs performance. Thus, the study concludes DT is crucial for growth and sustainability of SMEs in Ogun State, and recommends targeted interventions by government and stakeholders to strengthen technology ass, promote training in digital skills, and integration of digital technologies in SME operations.

Keywords: Digital infrastructure, digital literacy, digital transformation, sme performance, technology adoption

Introduction

In today's fast-changing global economy, digital transformation (DT) has emerged as a critical force reshaping how businesses operate, compete and create value (Abakpa & Dvoutely, 2024). No longer confined to large corporations or tech-savvy startups, digital tools and platforms are now essential for small and medium-sized enterprises (SMEs) seeking to improve operational efficiency, respond to shifting consumer demands and maintain relevance in an increasingly digitalized marketplace (Vrontis et al., 2022).

However, the integration of digital technologies within SMEs remains uneven across regions and economies, especially in developing countries, where structural barriers such as inadequate infrastructure, limited digital skills and poor connectivity persist (African Union, 2020). Nigeria, despite being Africa's largest economy, continues to lag in the global digital economy index, highlighting a critical need to explore how adoption of digital technologies can influence business performance in this context (Adeosun & Shittu, 2022; World Bank Group, 2019).

Moreover, a number of internal and external factors influence the implementation of digital transformation for SMEs. Internally, the perception of owners and managers, access to resources and technical competence of staff shape the readiness of SMEs to adopt digital solutions (Beckmann et al., 2023; Liu et al., 2021). According to Eggers et al. (2017) and Hussain et al. (2020), changes in the external environment like government help, competitive pressure and society's digitization enhance or hinder the adoption of digital solutions.

While various studies have looked into the impact of DT on SME growth in Nigeria, not many studies have looked into regional differences, particularly in an industrial zone, like Ogun State. As a major manufacturing and commercial area in southwestern Nigeria, Ogun State has a large

concentration of SMEs that contribute immensely to employment generation and wealth creation in the area.

Unfortunately, these businesses face multiple challenges, including poor internet access, high operating costs and insufficient digital infrastructure that hinder their ability to use DT. Also, there is little assessment of the influence of DT on performance of SMEs in Ogun State. Therefore, this study aims to investigate the influence of DT on performance of SMEs in Ogun State, Nigeria, with a focus on three key dimensions: technology access, skill capability and operational integration.

Resource-based view (RBV) (Wernerfelt, 1984; Barney, 1991) and dynamic capability theory (DCT) (Teece et al., 1997) provide useful theoretical foundations to examine effects of DT on performance of SMEs (Vrontis et al., 2022). Despite the growing relevance of RBV and DCT in changing business models and customer engagements across climes (Rupeika-Apoga et al. 2022) and their wide usage in research in Asia and Europe, their application in Africa is relatively low. Thus, this study opted to join research studies that adopted RBV and DCT as baseline theories.

Concept of Digital Transformation

DT has become a top priority for businesses today, as technology changes the way companies operate across industries. It is not just technology but a total reengineering of processes, cultures and capabilities aligned with long-term strategic objectives (Abakpa & Dvouletý, 2024). SMEs have constrained capacities because of limited capital. However, DT helps them to compete favourably, improve operational efficiency and expand into new markets (Akoma et al., 2023). SMEs achieve this by using tools like cloud platforms, e-commerce systems and data analytics to automate functions, customize offerings and obtain real-time information. For a successful DT, an organization's stakeholders must be willing to adapt, restructure and sustain digital momentum in addition to the requisite IT infrastructure (Abakpa & Dvouletý, 2024).

DT process is contextual and dynamic in nature, which calls for active participation of business and stimulation from business environment. The processes of adoption may also be influenced by readiness at the firm, management intention, perceived benefit from using digital tools, and competitive or government pressure (Hussain et al., 2020; Abakpa & Dvouletý, 2024). RBV and DCT provide a theoretical basis for DT by stressing that firms must possess valuable, rare, inimitable and non-substitutable (VRIN) resources and have entrenched systems that are agile and responsive to the dynamics of trends and technological development (Vrontis et al., 2022).

The vulnerability of SMEs to operational errors make it crucial for them to focus on strategic alignment instead of digital use (Liu et al., 2021). Abakpa and Dvouletý (2024) point out that SMEs should not be driven by technology but by strategy; and that the use of technology should serve a clear performance-oriented purpose. This suggests that the use of technology by SMEs must be informed by need to achieve set standards of operation, improve efficiency or other performance objectives, and not just for sake of being digital complaint. Nevertheless, the DT of SMEs is premised on three core pillar: technology access, skill capability and operational integration. These are adopted as dimensions of DT in this study.

Technology access

Technology access, as a dimension of DT, represents the foundational enabler through which SMEs engage in digital practices. According to Ehimuan et al. (2024), internet access is enabled by availability of digital infrastructure and cloud-based systems. Also important for access and connectivity are, affordability and adaptability of solutions. The extent to which SMEs adopt

and retain these technologies exerts influence on their operational transformation and future competitiveness. In settings with poor or unevenly distributed infrastructure, SMEs are often unable to become data-driven and tech-enabled businesses. Consequently, access to technology is no longer just a technological issue, but a strategic issue with socio-economic implications (Omowole et al., 2024).

More so, diffusion of innovations among SMEs depends on their ability to acquire valuable technologies and integrate them into their core operations. According to Abakpa and Dvoulétý (2024), limited broadband penetration, prohibitive operational costs and poor institutional support deepen the gap between SMEs that are technologically enabled and those that are technologically lagging. If these barriers are left unaddressed, SMEs may not be able to take advantage of digital ecosystems that allow innovation, efficiency and customer-centric services. It is also necessary to find solutions that suit specific context, as technology often fail to cater to needs and realities of SMEs in developing countries. Access to technology has to be considered not just in terms of availability, but also usability and scalability to the operational objectives of SMEs.

Skill capability

Skill capability refers to digital literacy, technical competence and innovation capacity of both SME owners and their employees (Radicic & Petković, 2023). It reflects the human capital dimension of DT, recognizing that success of technology adoption is contingent upon the ability of individuals to effectively adapt and apply them in daily operations (Abakpa & Dvoulétý, 2024). In practice, this includes basic IT skills, data analysis, system management and ability to integrate digital insights into decision-making. When staff members lack the requisite skills, digital tools introduced into a business remain underutilized or mismanaged. As emphasized in the work of Abakpa and Dvoulétý (2024), many SMEs in developing economies suffer from skill shortages that hinder the transformative potential of digital systems.

Furthermore, skill capability extends beyond technical know-how to encompass soft skills such as adaptability, strategic thinking and digital communication. These are critical as SMEs move toward decentralized and technology-driven organizational models. Usoroh (2021) notes that lack of appropriate skills within SME structures often leads to poor management practices and operational inefficiencies. Moreover, a firm's responsiveness to competitive pressure whether through innovation or marketing adaptation is frequently tied to its internal skill-sets (Akinfolarin, 2025). Hence, building digital competence should be a core objective of SME development, involving continuous training, leadership development and strategic partnerships with knowledge institutions. Without this foundation, even the most advanced technologies cannot translate into improved performance.

Operational integration

Operational integration denotes the intensity and consistency of integration of digital tools in routine business process of SMEs. The merger must be done so a real change happens and not just change in technology. It basically aligns systems of procurement, finance, marketing, people management and customer service to allow seamless processes and real-time data exchange (Abakpa & Dvoulétý, 2024). Integrated systems help SMEs use resources efficiently. It helps in avoiding duplication and increasing internal collaboration. This way insights from one function easily inform decision-making in other functions. Thus, integration promotes coherence across the organization.

In contrast, poor integration results in parallel systems: more complexity and less value. Akinfolarin (2025) highlights that SMEs face challenges when they implement digital tools without a coherent overall strategy. The absence of teamwork forges inefficiencies while confusing the employees. The operational integration of a firm mirrors the maturity of its digital transition. A firm that is fully integrated has gone through a higher digitization process and a strategic alignment (Wessel et al., 2021). Hence, SMEs that want better performance should go beyond implementation and embed digital tools in the operation centre of their businesses to enhance their agility and responsiveness amid changing marketplaces.

SME Performance

Improved performance of SMEs is a prerequisite to productivity and economic transformation of nations because SMEs create jobs, reduce inequalities and instigate resilient and sustainable economic growth (Ateke & Oluigbo-Moses, 2023). Kiyabo and Isaga (2020) posits that SME performance represent outcomes of business activities of SMEs, including sales growth, employee satisfaction, profitability and growth in assets and equity. This imply that SME performance encompasses a range of outcomes that indicate effectiveness and sustainability of an SME, including financial (revenue growth and profitability) and non-financial (customer satisfaction, market share, innovation capability, and internal efficiency) metrics.

Performance is both a measure of past actions and an indicator of future viability, reflecting a firm's ability to adapt, compete and innovate (Akinfolarin, 2025). The role of DT in enhancing performance of SMEs lies in its capacity to optimize operations, increase responsiveness to market shifts and facilitate strategic agility. However, this depends on how well digital resources are aligned with business objectives and organizational capabilities (Abakpa & Dvouletý, 2024).

Moreover, performance is context-dependent and must be understood within the competitive and infrastructural realities in which SMEs operate. Akinfolarin (2025) notes that SMEs often struggle with resource constraints, management deficiencies and market volatility, all of which affect their ability to sustain performance. DT offer potential solutions, but its impact is mediated by internal preparedness and external support. The integration of digital tools into value creation, supply chain operations and customer engagement processes can lead to improved outcomes, but only when guided by strategic intent. Thus, performance should not be evaluated solely in financial terms, but also by assessing how well the enterprise adapts to digital challenges and positions itself for long-term growth.

Sustainability and resilience are essential element of SME performance (Ateke & Oluigbo-Moses, 2023). SMEs do not only seek growth; they also seek survival in competitive and often unpredictable markets. Long-term performance is thus associated with strategic foresight, innovation and adaptability. In the view of Sharabati et al. (2024), to sustain performance over time, SMEs must be market-oriented, strategically responsive and led by proactive managers. These characteristics are further enhanced via DT, as companies learn about trends, customer preferences and changing regulatory and market environment. This way, performance is at once a result and a process, depending on how smartly an SME changes its strategic focus.

Moreover, SMEs that adopt DT are generally more innovative and customer-centric, which Abakpa and Dvouletý (2024) identify as key modern performance indicators. Through innovation, businesses can differentiate their products; customer-centrism leads to a satisfied and loyal customership. In addition, businesses become more transparent, data-driven and responsive when they embrace DT. However, the relationship between DT and performance

of SMEs is not straightforward; it has multiple levels or dimensions. So, evaluating SME performance requires a holistic view whereby their internal and external capabilities are aligned to their strategy. A deliberate and integrated approach towards DT enhances this alignment.

Theoretical Framework

This study found its theoretical underpinning in RBV and DCT, both of which emphasizes internal resources and capabilities as key to firms' superior performance. RBV posits that internal resources have a link with sustainable performance. As theorized by Wernerfelt (1984) and refined by Barney (1991), RBV states that companies can achieve competition edge by utilizing VRIN resources. Strategic resources like technological competencies and knowledge assets and innovation capabilities, are more critical for SMEs in a more digitally changing business environment.

According to RBV, worthy firm-specific assets such as skilled employees, business processes, and leadership can support SMEs' DT. Skilled employees do not only assist in upgrading technology, they also provide the necessary strategic alignment to transform digital tools into enhanced performance of the firm. RBV also suggests that SMEs should not only adopt DT but also internalize it via dynamic capabilities. This means being able to learn, integrate and reconfigure resources in a way that supports innovation and operational excellence.

According to Abakpa and Dvouletý (2024), SMEs will benefit more from DT if they see this effort as a resource-led strategy rather than a reaction to pressures from outside. Given this, RBV provides a simple, powerful explanation of why some SMEs in developing economies experience far-reaching performance outcomes post-transformation, whereas others fall short even with similar technology access.

DCT complements RBV by emphasizing VRIN resources are in themselves not sufficient to confer superior performance. Instead, a firms' capacity to integrate, build and reconfigure internal and external competencies to address rapidly changing conditions is considered key to superior performance (Teece et al., 1997). Thus, as opposed to the RBV's position that static VRIN resources inform superior performance, DCT emphasize adaptability and agility as necessary ingredients for superior performance. This means that SMEs undergoing DT in a digital economy with shifting customer preferences and market structures must in addition to possessing VRIN resources, constantly update and align those resources and their structures to emerging trends and opportunities. DCT is relevant for SMEs in Nigeria because volatility, resource constraints and infrastructural gaps require responsive and flexible business strategies. Abakpa and Dvouletý (2024) asserts that SMEs are digitally transformed not through technical overhaul but through continuous and iterative adjustment of models, processes and relations in accordance with digital technology capabilities. The ability to sense, seize and transform existing resources into new operational routines is important to SMEs' success. DT allow SMEs to change the way they operate and work especially in uncertain and competitive environments. According to DCT, SMEs need to be strategically agile not only to survive, but thrive in a context where digital innovation is reshaping everything.

Digital Transformation and SME Performance

Recent studies show that DT leads to better outcome for SMEs. However, depth and mechanism of this relationship differs across contexts. Akinfolarin (2025) looked at effects of competitive aggressiveness on SME performance. The study brings to light how strategic dynamism, proactive brand positioning and consumer shift responsiveness help firms gain a competitive edge. While the focus was not purely on DT, the study revealed that dynamic

capabilities closely linked to digital responsiveness are critical drivers of success of SMEs. It means DT strategies that embed competitive market behaviours are likely to produce greater performance outcomes.

Also, Abakpa and Dvouléty (2024) identified organizational readiness to absorb digital innovations as well as government policy, infrastructure, market forces, etc. as strategic factor driving adoption digital tools that affect performance of firms. According to Abakpa and Dvouléty (2024), most SMEs in Nigeria suffer greatly in this area. Only SMEs whose digital strategies align with their internal capabilities and strategic goals report improved performance. Their findings are in agreement with RBV and DCT which indicate that SMEs must first cultivate internal strengths prior to adopting external tools that could deliver tangible impact.

Moreover, it has been found that DT affects performance of SMEs on different dimensions, including operational efficiency, customer engagement and innovation capacity. DT in developing countries is not just a technical choice; it is a lifeline amidst weak infrastructure and fierce competition. A strategy utilising digital technologies can provide durable edge SMEs need to survive and thrive. SMEs that digitise without aligning tech capabilities and resources, culture and people, and long-term vision fail to leverage their full benefits. As noted by Akinfolarin (2025), the performance outcomes achieved with any strategy depend not just on what is used, but how effectively and consistently different strategies are implemented. This underscores the assertion that DT must not solely be influenced by technology but driven by internal capabilities. Based on the foregoing, we hypothesize that:

H₀₁: Technology access does not significantly affect SME performance in Ogun State.

H₀₂: Skill capability does not significantly affect SME performance in Ogun State.

H₀₃: Operational integration does not significantly affect SME performance in Ogun State.

Methodology

The study employed a descriptive research design and adhered to a positivist research philosophy to examine the effect of DT on performance of SMEs in Ogun State, Nigeria. The study examined three important aspects (technology access, skill capability and operational integration) of DT and assessed their effect on overall SME performance. The population of the study comprised 126 registered SMEs operating in 4 manufacturing sub-sectors in 5 local government areas (LGAs) of Ogun State. The SMEs in focus are those in food and beverage, agro-allied and animal feeds, plastic and rubber and wood furnishing and fittings. These SMEs were chosen because they contribute more to employment in Ogun State, and are already involved in some basic steps towards DT. The study enumerated the entire universe, while 504 owners/managers of the 126 SMEs served as respondents. Table 1 provides a summary of number of SMEs and respondents that provided data in each sub-sector.

Table 1: Distribution of Respondents by Manufacturing Sub-sector

| S/N | Manufacturing Sub-sector | Number of SMEs | Owners | Managers | Total |
|-----|------------------------------|----------------|------------|------------|------------|
| 1 | Food and Beverages | 16 | 16 | 48 | 64 |
| 2 | Agro-Allied & Animal Feeds | 20 | 20 | 60 | 80 |
| 3 | Plastics and Rubber | 40 | 40 | 120 | 160 |
| 4 | Wood Furnishing and Fittings | 50 | 50 | 150 | 200 |
| | Total | 126 | 126 | 378 | 504 |

Source: Field Survey (2025)

Data collection was done using a structured, adapted and validated questionnaire designed on a six-point Likert scale ranging from “Strongly Disagree (1)” to “Strongly Agree (6)”. The instrument was developed using items from relevant literature that were validated in previous

studies by Akinfolarin (2025) and Abakpa and Dvouletý (2024). To test the clarity and logical soundness of the instrument with the study objective, a pre-test was carried out using 10 per cent of the population from a neighbouring state (Oyo State). To guarantee validity, expert content review and exploratory factor analysis (EFA) were utilized. Average Variance Extracted (AVE) of all constructs was higher than 0.5 (ranging from 0.602 to 0.948), confirming convergent validity. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.814, and Bartlett's Test of Sphericity result was significant ($p < 0.001$), suggesting suitability for factor analysis and validation.

The study employed Cronbach's Alpha test to confirm the reliability of the research instrument; and the values of all constructs fall between 0.88 and 0.94. 437 valid response collected with a response rate of 87 per cent was used in the final analyses of the study. Demographic and context characteristics data were summed up using frequencies and percentages; while the linear regression statistic was used to test the impact of dimensions of DT on SME performance both individually and jointly. The **decision rule** was: Reject null hypothesis if $p < 0.05$. Statistical Package for Social Sciences (SPSS) version 24.0 assisted data analyses and test of hypotheses.

Model Specification

This study investigated effect of DT on SME Performance (SMEP). The independent variable (DT) is represented by three sub-variables:

X = Digital Transformation (DT)

x_1 = Technology Access (TA)

x_2 = Skill Capability (SC)

x_3 = Operational Integration (OI)

Y = SME Performance (SMEP)

The regression equations for the hypotheses are specified as follows:

Ho₁: Technology access has no significant effect on SME performance.

$SMEP = f(x_1)$

$SMEP = \beta_0 + \beta_1 TA + e_i$ (eq.i)

Ho₂: Skill capability has no significant effect on SME performance.

$SMEP = f(x_2)$

$SMEP = \beta_0 + \beta_2 SC + e_i$ (eq.ii)

Ho₃: Operational integration has no significant effect on SME performance.

$SMEP = f(x_3)$

$SMEP = \beta_0 + \beta_3 OI + e_i$ (eq.iii)

This model allows for precise estimation of each sub-variable's contribution to SME performance, offering practical insights for digital policy, enterprise development and capacity-building strategies.

Results and Discussions

A total of 504 copies of structured questionnaire were administered to SME owners and managers across 4 selected manufacturing sub-sectors in 5 LGAs in Ogun State, Nigeria. The SMEs included those in food and beverages, agro-allied and animal feeds, plastics and rubber, and wood furnishing and fittings. Out of these, 437 copies of completed questionnaire were retrieved, representing a high response rate of 87%. This high level of participation demonstrates strong engagement from the target respondents and provides a robust basis for statistical inference.

Table 2: Demographic Profile of Respondents

| Demographics | Category | Frequency | Valid Per cent (%) | Cumulative Per cent (%) |
|---------------------------|--------------------|------------|--------------------|-------------------------|
| Gender | Male | 248 | 56.8 | 56.8 |
| | Female | 189 | 43.2 | 100.0 |
| Marital Status | Single | 175 | 40.0 | 40.0 |
| | Married | 262 | 60.0 | 100.0 |
| Age Group | 18–30 years | 49 | 11.2 | 11.2 |
| | 31–40 years | 168 | 38.4 | 49.6 |
| | 41–50 years | 147 | 33.6 | 83.2 |
| | 51 years and above | 73 | 16.8 | 100.0 |
| Educational Qualification | SSCE or equivalent | 24 | 5.5 | 5.5 |
| | ND/Equivalent | 102 | 23.3 | 28.8 |
| | BSc/HND | 229 | 52.4 | 81.2 |
| | MSc/PhD | 82 | 18.8 | 100.0 |
| Total | | 437 | 100.0 | |

Source: Field Survey, 2025

The demographic distribution in Table 1 shows relatively balanced gender representation, with 56.8% male and 43.2% female, indicating broad inclusion in managerial roles across SMEs. A majority of respondents (60%) are married, which may reflect a stable and experienced workforce. The dominant age group falls between 31 and 50 years (72%), suggesting that most respondents are in their prime professional years and are likely involved in strategic decision-making. Over 71% of participants hold tertiary qualifications, which supports the assumption that respondents are adequately educated and capable of making informed assessments about digital transformation initiatives and performance outcomes.

Analysis of Effect of Technology Access on SME performance

Table 3: Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------|----------|-------------------|----------------------------|
| 1 | 0.864 | 0.746 | 0.744 | 0.55971 |

Predictor: (Constant), Technology Access

Source: Field Survey, 2025

Table 4: Coefficients (a)

| Model | Unstandardized Coefficients | Std. Error | Standardized Coefficients (Beta) | t | Sig. |
|-------------------|-----------------------------|------------|----------------------------------|--------|-------|
| (Constant) | 0.164 | 0.113 | | 1.452 | 0.148 |
| Technology Access | 0.818 | 0.045 | 0.864 | 18.092 | 0.000 |

Predictor: (Constant), Technology Access

Source: Field Survey, 2025

Table 5: ANOVA (b)

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|------------|----------------|-----|-------------|---------|-------|
| Regression | 55.117 | 1 | 55.117 | 327.838 | 0.000 |
| Residual | 18.262 | 435 | 0.140 | | |
| Total | 73.379 | 436 | | | |

Predictor: (Constant), Technology Access

Source: Field Survey, 2025

The R^2 value of 0.746 in Table 3 implies that technology access accounts for 74.6% of variance in performance of SMEs. The p-value (0.000) is less than 0.05, so the null hypothesis is rejected. This indicates a statistically significant effect of technology access on performance of

SMEs. The implication is that SMEs with adequate access to relevant technology tend to demonstrate higher performance.

Analysis of Effect of Skill capability on SME performance

Table 6: Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------|----------|-------------------|----------------------------|
| 1 | 0.857 | 0.735 | 0.732 | 0.56892 |

Predictor: (Constant), Skill Capability

Source: Field Survey, 2025

Table 7: Coefficients (a)

| Model | Unstandardized Coefficients | Std. Error | Standardized Coefficients (Beta) | t | Sig. |
|------------------|-----------------------------|------------|----------------------------------|--------|-------|
| (Constant) | 0.179 | 0.109 | | 1.642 | 0.101 |
| Skill Capability | 0.806 | 0.049 | 0.857 | 17.902 | 0.000 |

Predictor: (Constant), Skill Capability

Source: Field Survey, 2025

Table 8: ANOVA (b)

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|------------|----------------|-----|-------------|---------|-------|
| Regression | 53.964 | 1 | 53.964 | 320.701 | 0.000 |
| Residual | 19.415 | 435 | 0.145 | | |
| Total | 73.379 | 436 | | | |

Predictor: (Constant), Skill Capability

Source: Field Survey, 2025

The R^2 value of 0.735 in Table 6 shows that 73.5% of variation in performance of SME can be explained by digital skill capability of staff and management. The p-value is less than 0.05, leading to the rejection of the null hypothesis. This suggests that digitally competent personnel play a critical role in determining how well SMEs adopt and benefit from digital systems. Skilled employees enable effective use of enterprise tools, enhance service delivery, and strengthen the capacity for innovation factors that contribute significantly to organizational success.

Analysis of Effect of Operational integration on SME performance

Table 9: Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------|----------|-------------------|----------------------------|
| 1 | 0.849 | 0.721 | 0.718 | 0.57344 |

Predictor: (Constant), Operational Integration

Source: Field Survey, 2025

Table 10: Coefficients (a)

| Model | Unstandardized Coefficients | Std. Error | Standardized Coefficients (Beta) | t | Sig. |
|-------------------------|-----------------------------|------------|----------------------------------|--------|-------|
| (Constant) | 0.196 | 0.116 | | 1.690 | 0.092 |
| Operational Integration | 0.793 | 0.052 | 0.849 | 16.800 | 0.000 |

Predictor: (Constant), Operational Integration

Source: Field Survey, 2025

Table 11: ANOVA (b)

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|------------|----------------|-----|-------------|---------|-------|
| Regression | 52.917 | 1 | 52.917 | 282.276 | 0.000 |
| Residual | 20.462 | 435 | 0.154 | | |
| Total | 73.379 | 436 | | | |

Predictor: (Constant), Operational Integration

Source: Field Survey, 2025

With an R^2 of 0.721 in Table 9, operational integration explains 72.1% of change in performance of SMEs. The null hypothesis is rejected as the significance level is well below 0.05. This result affirms that effective integration of digital tools into SMEs' daily operations positively affects their performance. Firms that synchronize digital functions tend to enhance their internal coordination, responsiveness and customer satisfaction, thus achieving better performance outcomes.

Discussion of Findings

The strong influence of technology access on SME performance supports the view that access to digital tools and infrastructure is a foundational enabler of enterprise development. This shows that accessibility to low-cost scalable digital solutions enables SMEs to automate repetitive tasks, reduce problems in execution, and reach out to new clients (Abakpa & Dvouléty, 2024). The result also confirms the view of Liu et al. (2021) that technology infrastructure, such as a reliable internet, modern devices, and digital platforms, removes barriers to innovation and improves internal coordination. This dimension emphasizes that SMEs in developing countries require digital infrastructure to remain competitive in an ever-changing economy.

In the case of skill capability, results show that digital competency and SME performance have a clear positive relationship. This result supports the view that human capital plays a critical role in the digitalisation process. As discovered by Akinfolarin (2025), firms that invest in staff training and IT literacy are more likely to turn their technology adoption into operational value through strategic use. This also means that DT is not effective for SMEs that do not have the capacity to deploy and manage new digital tools, interpret data and adjust workflows. Our results support the theory that learning, adaptation and other dynamic capabilities can be used to respond to technological changes. SMEs with competent and digital savvy people are more resilient and strategic in addressing market pressures and consumer demand.

Lastly, the strong influence of operational integration on SME performance suggests that digital systems must be integrated into SMEs' routines to add value. SMEs become more transparency, reactive in real-time and aligned to their strategy when they adopt digital technologies in their finance, logistics, marketing and customer service routines. Our results confirms the view of Vrontis et al. (2022) that digital maturity reflects the score of technology to support cross-functional processes. Similarly, the evidence suggests that limited DT constrains the value that can be derived from the digital tool. A multi-faceted, holistic and well-integrated DT is required to improve decision making, reduce redundancies and enhance customer experience, all of which directly relate to performance of SMEs.

Conclusion and Recommendations

This study has demonstrated that DT plays a critical role in enhancing performance of SMEs in Ogun State. Specifically, the analysis shows that DT in terms of technology access, skill capability and operational integration have significant and positive impact on SMEs performance. The demographic profile of respondents, which includes a diverse mix of age, gender, and educational backgrounds, reflects the richness of insights gathered and strengthens

the credibility of data collected. All three hypotheses tested were supported by the regression models, confirming that technology access, skill capability and operational integration contribute meaningfully to SME performance. These findings suggest that digital initiatives when well-supported and appropriately implemented, offer SMEs a competitive edge in today's technology-driven market. More than just tools, digital technologies represent strategic pathways to growth, customer retention and adaptability. The evidence positions DT as a long-term investment that SMEs in Nigeria cannot afford to overlook.

Based on the findings, the following recommendations are proposed for SME owners, managers, policy makers, and support institutions:

- a) Stakeholders should prioritize the provision and affordability of digital infrastructure, such as broadband internet, cloud services, and enterprise software. Public-private partnerships can help bridge the access gap in less urban areas.
- b) Government agencies, SME development bodies, and private training institutions should implement structured capacity-building programmes focused on digital literacy and technical skills.
- c) SME leaders should go beyond isolated technology adoption and strive for full operational integration. This includes aligning digital tools with workflows across finance, inventory, sales, and human resources. Integrated systems reduce manual errors, increase speed, and create a unified operational ecosystem that enhances performance.

Suggestions for Further Studies

Future studies could extend the analysis of DT and SME performance to other sectors like retailing, healthcare, education and professional services to provide new insights into how DT vary across industries. It is also suggested that future studies explore the influence of DT on specific performance outcomes such as customer satisfaction, operational efficiency, etc. of SMEs. In addition, a comparative research would help identify sector-specific drivers and barriers to SME performance in the digital economy. Furthermore, longitudinal studies are also suggested to explore how DT influence SME performance over time. Since digital maturity evolves, future research could examine how sustained investments in technology and skills contribute to organizational resilience, innovation, and scalability.

Reference

- Abakpa, A., & Dvoutely, O. (2024, September 5th-6th). *Digital transformation and SME performance in Nigeria: Methodological considerations*. Presented at the 18th International Days of Statistics and Economics, Prague, Czech Republic.
- Adeosun, O. T., & Shittu, A. I. (2022). Small-medium enterprise formation and Nigerian economic growth. *Review of Economics and Political Science*, 7(4), 286–301. <https://doi.org/10.1108/REPS-07-2020-0089>
- African Union. (2020). *The digital strategy for Africa 2020–2030*. Addis Ababa, Ethiopia.
- Akinfolarin, B. H. (2025). Competitive aggressiveness and performance of SMEs in Yewa South Local Government, Ogun State, Nigeria. *International Journal of Humanities Social Science and Management*, 5(2), 9-15.
- Akoma, L. O., Adeoye, S. O., Akinlabi, H. B., & Ayeni, D. (2023). Innovation and performance of SMEs in Nigeria manufacturing firm. *International Journal of Managerial Studies and Research*, 11(6), 36-51. <https://doi.org/10.20431/2349-0349.1106005>

- Ateke, B. W., & Oluigbo-Moses, C. (2023). Customer-Bonding capability: A revolutionary management skill for improved performance of SMEs in agribusiness in Rivers State, Nigeria. *European Journal of Business and Management*, 15(13), 1-11. <https://www.doi.org/10.7176/EJBM/15-13-01>
- Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120. <https://doi.org/10.1177/014920639101700108>
- Beckmann, M., Garkisch, M., & Zeyen, A. (2023). Together, we are strong: A systematic literature review on how SMEs use relation-based collaboration to operate in rural areas. *Journal of Small Business & Entrepreneurship*, 35(4), 515-549. <https://doi.org/10.1080/08276331.2021.1874605>
- Eggers, F., Hatak, I., Kraus, S., & Niemand, T. (2017). Technologies that support marketing and market development in SMEs - Evidence from social networks. *Journal of Small Business Management*, 55(2), 270-302. <https://doi.org/10.1111/jsbm.12313>
- Ehimuan, B., Anyanwu, A., Olorunsogo, T., Akindote, O., Abrahams, T., & Reis, O. (2024). Digital inclusion initiatives: Bridging the connectivity gap in Africa and the USA: A review. *International Journal of Science and Research Archive*, 2024(01), 488-501.
- Hussain, A., Shahzad, A., & Hassan, R. (2020). Organizational and environmental factors with the mediating role of e-commerce and SME performance. *Journal of Open Innovation: Technology, Market, and Complexity*, 6(4). <https://doi.org/10.3390/joitmc6040196>
- Kiyabo, K., & Isaga, N. (2020). Entrepreneurial orientation, competitive advantage, and SMEs' performance: Application of firm growth and personal wealth measures. *Journal of Innovation and Entrepreneurship*, 9(12). <https://doi.org/10.1186/s13731-020-00123-7>
- Liu, Y., Ni, Z., Karlsson, M., & Gong, S. (2021). Methodology for digital transformation with Internet of Things and cloud computing: A practical guideline for innovation in small- and medium-sized enterprises. *Sensors*, 21(16). <https://doi.org/10.3390/s21165355>
- Omowole, B. M., Olufemi-Phillips, A. Q., Ofodile, O. C., Eyo-Udo, N. L., & Ewim, S. E. (2024). Barriers and drivers of digital transformation in SMEs: A conceptual analysis. *International Journal of Scholarly Research in Science and Technology*, 5(2), 19-36.
- Radicic, D., & Petković, S. (2023). Impact of digitalization on technological innovations in small and medium-sized enterprises (SMEs). *Technological Forecasting and Social Change*, 191. <https://doi.org/10.1016/j.techfore.2023.122474>
- Rupeika-Apoga, R., Petrovska, K., & Bule, L. (2022). The effect of digital orientation and digital capability on digital transformation of SMEs during the COVID-19 pandemic. *Journal of Theoretical and Applied Electronic Commerce Research*, 17(2), 669-685. <https://doi.org/10.3390/jtaer17020035>
- Sharabati, A.-A. A., Ali, A., Allahham, M. I., Hussein, A. A., Alheet, A. F., & Mohammad, A. S. (2024). The impact of digital marketing on the performance of SMEs: An analytical study in light of modern digital transformations. *Sustainability*, 16(19). <https://doi.org/10.3390/su16198667>
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509-533.
- Usoroh, E. (2021). Effect of autonomy and competitive aggressiveness on the growth of small and medium enterprises (SMEs) in North Central Nigeria. *International Journal of Advanced Research in Accounting, Economics and Business Perspectives*, 5(1), 83-98.
- Vrontis, D., Chaudhuri, R., & Chatterjee, S. (2022). Adoption of digital technologies by SMEs for sustainability and value creation: Moderating role of entrepreneurial orientation. *Sustainability*, 14(13). <https://doi.org/10.3390/su14137949>
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5(2), 171-180. <https://doi.org/10.1002/smj.4250050207>

Wessel, L., Baiyere, A., Ologeanu-Taddei, R., Cha, J., & Blegind Jensen, T. (2021). Unpacking the difference between digital transformation and IT-enabled organizational transformation. *Journal of the Association for Information Systems*, 22(1), 102–129. <https://doi.org/10.17705/1jais.00655>

World Bank Group. (2019). *Nigeria digital economy diagnostic report*. Report No. 32743. <https://doi.org/10.1596/32743>