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THE INFLUENCE OF INFRASTRUCTURE DEVELOPMENT ON THE GROWTH OF SMALL-SCALE ENTERPRISES IN URBAN AREAS OF NIGERIA

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Abstract: *This study investigated the influence of infrastructure development on the growth of 1000 Small-Scale Enterprises (SSE) in urban areas of Nigeria. Employing a survey research approach, data was collected from a sample of 236 SSEs using a structured questionnaire. The findings revealed a significant positive correlation between improved infrastructure, including transportation and telecommunication networks, and key SSE growth indicators, such as productivity. Key findings highlighted that affordable transportation and robust telecommunication networks significantly enhanced SSE productivity and market access. The study emphasizes the critical role of government intervention in prioritizing infrastructure development, fostering public-private partnerships, and implementing policies that support SSE growth. These findings have significant implications for policymakers and practitioners. Prioritizing infrastructure development, particularly in transportation, energy, water, and telecommunications, is crucial for fostering a conducive business environment for SSEs in Nigeria. Suggestions for further studies include conducting studies to analyse the long-term impact of infrastructure on different types of SSEs across various sectors and exploring the role of digital technologies and e-commerce in leveraging infrastructure development for SSE growth. Furthermore, investigating the impact of infrastructure development on poverty reduction and job creation in urban areas and conducting regional analyses to understand the varying effects of infrastructure development across different regions of Nigeria are also crucial areas for future research. This study provides valuable insights into the critical role of infrastructure in fostering SME growth in Nigeria, paving the way for evidence-based policy interventions that can unlock the full potential of the SSE sector.*
Keywords: *Digital Infrastructure, Economic Development, Infrastructure Development, Public-Private Partnerships, Urbanization.*

Introduction

SSEs face challenges such as poor tax compliance, complex filing procedures, and multiple taxations, which hinder their growth (Onyedikachi et al., 2022). Recommendations include improving infrastructure, reducing the importation of goods that can be locally produced, and

enhancing entrepreneurial education (Ekerikevwe & Isodje, 2022; Olaniyi & Adekanmbi, 2022). The growth of small-scale enterprises (SSEs) in urban areas of Nigeria is a multifaceted phenomenon influenced by various factors, including financial access, technology, managerial competence, government policies, and socio-economic conditions (Abeh, 2017). These enterprises play a crucial role in economic development, employment generation, and poverty alleviation. However, challenges such as inadequate financing, high lending rates, and poor infrastructure often hinder their growth.

Access to finance is a significant determinant of SSE growth. Studies indicate that commercial bank loans have a weak negative effect on economic growth, while total credit to the private sector positively impacts growth (Ibitomi et al., 2024). Government expenditure directly and significantly impacts the growth of SSEs, suggesting that public financial support is crucial for their development (Edijala et al., 2024). Adopting technology and managerial competence are critical for the growth of SSEs. In Ado-Ekiti, these factors have been shown to positively impact SSE growth, although not as significantly as expected (Ojo & Shittu, 2023). Embracing modern technology and improving managerial skills can enhance productivity and growth potential for SSEs (Ojo & Shittu, 2023). Effective government policies are vital for SSE development. Policies that promote SSE advancement, expansion, and promotion significantly impact economic growth (Cletus et al., 2023). Government initiatives, such as reducing interest rates and providing financial resources, are recommended to support SSEs (Phil Chibuikem, 2022).

Productivity is a crucial measure of growth for small-scale enterprises (SSEs), as it directly influences their ability to contribute to economic development and sustainability (De & Nagaraj, 2014). The productivity of SSEs is often linked to their efficiency, competitiveness, and capacity to innovate, which are essential for their growth and survival in competitive markets. Productivity is a key indicator of sustainable growth in enterprises, including SSEs, as it reflects their ability to utilize resources to generate output efficiently (Santillan-Valdelamar et al., 2024). In Nigeria, the output of SMEs, although not statistically significant, positively impacts economic growth, suggesting that productivity improvements could enhance their contribution to the economy (Edijala et al., 2024). In India, labour productivity is a significant determinant of output, highlighting the importance of human capital in driving productivity and growth in SMEs (Takyi et al., 2022).

The infrastructure development of small-scale enterprises (SMEs) in urban areas of Nigeria is a critical factor influencing their growth and contribution to the economy (Akinyele et al., 2016). Despite the recognized potential of SMEs to drive economic development, several infrastructural challenges hinder their optimal performance. These challenges include inadequate access to essential services such as electricity, water, and transportation, crucial for efficient business operations. Infrastructure development is thus pivotal for enhancing the productivity and sustainability of SMEs in Nigeria's urban areas. SMEs often face unreliable electricity and water supply, compelling them to invest in alternative sources, which increases operational costs and reduces competitiveness (Phil Chibuikem, 2022). Poor road networks and transportation infrastructure limit market access and increase logistics costs for SMEs, affecting their ability to scale and compete effectively (Musa & Moses, 2022).

Infrastructure facilities have positively affected the service quality and market growth potential of SMEs in Abuja, Nigeria. Improved infrastructure enhances service delivery and market expansion opportunities for SMEs (Ngalo, 2021). Infrastructure development is linked to

economic growth, with SMEs playing a pivotal role. Adequate infrastructure supports the productivity and profitability of SMEs, contributing to broader economic development (Ibitomi et al., 2024; Phil Chibuikem, 2022). A long-run equilibrium relationship exists between infrastructure and SME output, indicating that infrastructure improvements can lead to sustained growth in SME productivity (Linda et al., 2024).

Transportation and telecommunication networks often act as complements, enhancing each other's effectiveness. Efficient planning and coordination are necessary to optimize their integration and ensure sustainable development (Prignano et al., 2023). Transportation infrastructure is vital for economic growth, reducing trade costs, and enhancing productivity. It supports the specialization of goods and services and promotes consumption (Qin et al., 2023). Telecommunication networks are key to socio-economic development, influencing the spatial configuration of economic activities and the long-term use of infrastructure (Prignano et al., 2023).

Obi (2024) investigated small and medium-scale enterprises as the fulcrum of economic growth in Nigeria; Oduwole et al. (2024) examined the factors affecting entrepreneurial development and small-scale enterprises in Biu, LGA Borno State, Nigeria; Omwenga and David (2024) evaluated the effect of innovation processes on the financial growth of small scale businesses in custom market, Juba-South Sudan; Thomas et al., (2024) assessed the imperatives of small-scale businesses and employment generation in Uyo Local Government Area, Akwa Ibom state; Olaore et al., (2021) x-rayed the gains and pains of small and medium-scale enterprises (SMEs): the way forward for entrepreneurship development in Nigeria. While infrastructure development is essential for the growth of SMEs in Nigeria, the current state of infrastructure presents significant challenges. Addressing these challenges requires coordinated efforts from both government and private sectors to ensure that SMEs can thrive and contribute to economic development. Additionally, policies focusing on improving infrastructure, particularly telecommunication and transportation, are crucial for enhancing SME performance and growth.

Aim and Objectives of the Study

The study aims to examine the influence of infrastructure development on the growth of Small-Scale Enterprises in Urban Areas of Nigeria. Thus, the following specific objectives are stated:

- To investigate the relationship between transportation networks and the productivity of Small-Scale Enterprises in Urban Areas of Nigeria.
- To evaluate the relationship between telecommunication networks and the productivity of Small-Scale Enterprises in Urban Areas of Nigeria.

Research Hypotheses

H_{01}: There is no significant relationship between transportation network and productivity of Small-Scale Enterprises in Urban Areas of Nigeria.

H_{02}: There is no significant relationship between telecommunication networks and the productivity of Small-Scale Enterprises in Urban Areas of Nigeria.

Infrastructure Development

Infrastructure development has historically been a catalyst for economic transformation, as seen in Latin America between 1870 and 1930, where modern transportation investments spurred

economic growth by reducing marketing and transaction costs (Summerhill, 2005). Empirical studies show that infrastructure assets positively affect GDP growth, and infrastructure quality and quantity improvements can significantly reduce income inequality (Qin et al., 2023; Hidayat & Prasetyo, 2023).

The government plays a pivotal role in ensuring the provision and expansion of infrastructure, often requiring large-scale investments and coordination with local communities and private entities (Lan & Zhu, 2023). In transition economies, the public and private sectors must collaborate to overcome challenges in providing reliable infrastructure services, as seen in the Europe and Central Asia region (Stroustrup, 2011).

Infrastructure development has its challenges, including social and environmental impacts. In some cases, infrastructure projects can lead to community disputes and require careful consideration of justice and responsibility in implementation (Warlters et al., 2005). Aligning infrastructure projects with low-carbon goals is essential for sustainable development, as highlighted in India's efforts to integrate environmental sustainability into infrastructure planning (Servén & Calderón, 2004).

In South Africa, infrastructure projects like the Gautrain and Gauteng Freeway Improvement Programme are evaluated for their economic impact and employment opportunities, highlighting the importance of financial feasibility in infrastructure planning (Servén & Calderón, 2004). The Philippines' experience underscores the need for a clear regulatory framework to encourage private sector participation and ensure fair competition and consumer welfare (Venter, 2010).

Transportation Network

Transportation networks are a critical dimension of infrastructure development, serving as the backbone for economic growth, urban expansion, and sustainable development (Nipa & Kermanshachi, 2021). These networks facilitate the movement of people and goods, thereby influencing regions' socio-economic and spatial dynamics.

Resilience in transportation networks is crucial for withstanding disruptions and ensuring rapid recovery. Key dimensions include the physical characteristics of roadway networks and management strategies, such as investment types and information dissemination (Nipa et al., 2023). Sustainable development of transportation infrastructure involves increasing the capacities of urban networks, as seen in Chabahar's case study, which recommends a multimodal transportation system to support intercontinental corridors (Cao & Shahraki, 2023).

The evolution of transportation infrastructure from ancient times to modern innovations like the hyperloop highlights its foundational role in shaping human civilization (Li et al., 2023). Transportation networks can disrupt geomorphic connectivity, affecting floodplain dynamics and channel morphology, as evidenced by studies in West Bengal, India (Roy, 2023). Transportation infrastructure significantly impacts urban development, with investments in road networks and other infrastructures driving city expansion and economic growth. Integrating transportation networks with energy and information systems creates a new socio-ecological paradigm, emphasizing connectivity and interdependence (Yannis & Chaziris, 2022).

Effective transportation infrastructure management requires strategic platforms incorporating data-driven decision-making models, as demonstrated in Russian transport networks (Zhang, 2021). Urban transport policies are shifting towards supporting public transport and active travel

modes, highlighting the need for a well-designed network hierarchy and infrastructure to enhance city sustainability (Nasruddin et al., 2024).

Telecommunication Network

As seen in China, telecommunication infrastructure significantly boosts innovation by increasing R&D investment and knowledge output. The iterative development of telecommunication technologies, such as mobile and fixed networks, has varying impacts on regional innovation, with eastern regions benefiting more from mobile communication advancements (Yang & Li, 2024). In Asian developing nations, improved telecommunication infrastructure attracts foreign direct investment (FDI), indicating its importance in economic development. Enhanced telecom infrastructure, particularly mobile subscriptions, is a strong determinant of FDI inflows (Daraojimba et al., 2023).

The pandemic has accelerated investment in telecommunication infrastructure, focusing on broadband expansion, 5G rollout, and cloud services. These investments have improved connectivity, job creation, and technology democratization, especially in underserved areas (Abramov et al., 2022). However, this rapid expansion also poses environmental challenges, such as increased energy consumption and electronic waste, necessitating sustainable practices in the telecom industry (Savin et al., 2020).

The development of national research and educational networks (NREN) in Russia highlights the role of telecommunication infrastructure in supporting scientific research and education. These networks facilitate high-performance computing and international collaboration, which is essential for modern scientific endeavors (Zhang, 2021; Shah & Khan, 2019).

Telecommunication networks are integral to urban development, influencing city size and expansion. Investment in telecom infrastructure is linked to improved urban growth and sustainability (Ranatunga et al., 2011). Community telecommunication projects, like the Kutztown network, underscore the importance of societal input and political economy factors in network design and sustainability (Giannopoulos & Moschovou, 2023).

Growth

Economic growth is often viewed through neoclassical growth theory, which posits that technology can substitute for natural resources, thus sustaining growth despite environmental challenges. However, this view is criticized for its unrealistic assumptions about resource availability and adaptation, particularly in agriculture, which is foundational to economic growth (Guenther, 2024). The trajectory of modern civilization is marked by competing imperatives of material growth and biospheric limits, highlighting the uncertainty in balancing economic expansion with environmental sustainability (Tazudeen, 2017).

Historical analysis of social and political organizations reveals that growth often increases scale, wealth, and complexity. However, this growth can also result in collapse, as seen in the limits reached by agrarian societies between 1000 BCE and 1350 CE (Ferrario, 2023). The growth of empires and civilizations is not linear, encompassing periods of expansion and decline, influenced by various socio-political factors (Tazudeen, 2017).

Educational philosophies such as "education as growth" emphasize the importance of nurturing students' subjective initiative and promoting healthy growth through comprehensive educational

practices (Chen, 2023). Growth in education is seen as a process of learning and development, focusing on the holistic growth of students in various dimensions (Chen, 2023).
Growth in biological terms involves quantitative changes at cellular and individual levels, influenced by factors such as nutrition and socio-economic conditions. Studies on child development highlight the importance of monitoring and supporting growth through community and healthcare collaboration. Human growth is also metaphorically represented through artistic expressions, reflecting emotional and experiential development (Smil, 2019).

Productivity

The productivity of small-scale enterprises (SSEs) is a multifaceted issue influenced by various factors, including employee participation, technological adoption, and environmental conditions. Active involvement of employees in decision-making processes significantly boosts productivity. This engagement leads to improved market share and profitability as employees contribute valuable insights and feel more invested in the enterprise's success (Santillan-Valdelamar et al., 2024).
The integration of Fourth Industrial Revolution technologies, such as the Internet of Things and digital automation, has enhanced productivity in small enterprises. These technologies streamline operations and reduce inefficiencies (Takyi et al., 2022). Implementing lean approaches, such as Value Stream Mapping and layout optimization, can significantly reduce lead times and improve line efficiency. These techniques help eliminate non-value-added activities, enhancing productivity (Sanusi & Dries, 2024; Backhaus & Nadarajah, 2022). A conducive physical work environment, including ergonomic considerations and social interaction, positively correlates with productivity. Adjustments in workplace design can lead to significant improvements in worker output (Ihedigbo et al., 2023).
Many SSEs operate informally, hindering productivity due to limited access to credit, infrastructure, and formal support systems. Addressing these barriers through policy interventions can create a more enabling environment for productivity growth (Das & Das, 2023). SSEs face challenges maintaining OSH standards due to resource constraints and limited managerial focus. Improving OSH can enhance employee well-being and productivity, although it requires tailored approaches considering each enterprise's unique characteristics (Pathberiya et al., 2017).

Theoretical framework

New Institutional Economics (NIE)

New Institutional Economics (NIE) is an interdisciplinary approach that extends traditional economic theories by incorporating the role of institutions in shaping economic behaviour and outcomes (Richter, 2005). It emerged as a response to the limitations of neoclassical economics, particularly its assumptions of perfect information and rationality. NIE emphasizes the importance of transaction costs, property rights, and the institutional environment in economic analysis. This approach has become integral to mainstream economics, influencing law, economic history, and development studies.
NIE focuses on the costs associated with economic transactions, which arise due to limited information and uncertainty. Institutions help reduce these costs by providing a stable framework for economic interactions (Egbert et al., 2024). Institutions, both formal (laws, regulations) and

informal (culture, traditions), are seen as the "rules of the game" that shape economic behaviour and outcomes. They influence how economic agents interact and make decisions (Egbert et al., 2024; Siems & Yap, 2024). NIE integrates insights from economics, sociology, and law to understand economic phenomena comprehensively. It is instrumental in comparative law, offering a framework to analyze legal divergences and convergences across countries (Dorfman & Harel, 2023).

NIE has been used to study economic development and growth, particularly in ancient economies. It provides a framework for understanding the structure and performance of economies over time (De Wit-De Visser et al., 2023). NIE has also been used to analyze the determinants of FDI, emphasizing the role of governance and institutional variables in attracting investments (Adedoyin et al., 2022). In these sectors, NIE examines how transaction costs and institutional frameworks affect economic activities and decision-making processes (Egbert et al., 2024).

While NIE has enriched economic analysis by incorporating institutional factors, it faces critiques regarding its assumptions and methods. Critics argue that its focus on growth as a desirable outcome may not universally apply, and its predictive capabilities are sometimes questioned (De Wit-De Visser et al., 2023). Additionally, integrating NIE with other economic theories remains challenging, as seen in debates with New Economic Sociology, which emphasizes social embeddedness over institutional analysis (von Schuckmann et al., 2024). In summary, New Institutional Economics offers a robust framework for understanding the role of institutions in economic activities. However, its application and assumptions remain subject to debate, highlighting the need for ongoing research and integration with other theoretical perspectives.

Methodology

A survey research design was employed to investigate the influence of infrastructure development on the growth of 1,000 Small-Scale Enterprises (SSEs) in urban Nigeria. A quantitative component involved administering a structured questionnaire to a random sample of 278 SSE owners/managers in selected urban areas, derived using the Krejcie and Morgan (1970) sample size determination table. This questionnaire gathered data on transportation networks, telecommunication networks, and growth indicators such as productivity.

Data analysis involves quantitative techniques. Quantitative data was analyzed using descriptive statistics and the Spearman Rank Order Correlation Coefficient to measure the strength and direction of the relationship between infrastructure development and SSE growth. SPSS version 27.0 was used to conduct these analyses.

Ethical considerations were strictly followed throughout the research process, including obtaining informed consent from participants and ensuring data confidentiality. This survey approach provided a comprehensive understanding of the complex relationship between infrastructure development and the growth of small-scale enterprises in urban Nigeria, contributing to evidence-based policymaking and sustainable economic development.

Result and Discussions

Using descriptive statistical analysis facilitates the extraction of demographic variables about the respondents inside the sample. Among the 278 copies distributed, only 236 copies (85%) of the distributed and retrieved questionnaire copies were found acceptable and used for the analysis.

Again, 42 copies (15%) were characterized by invalid and missing responses and thus were removed.

Demographic Analysis

Table 1: Descriptive statistical analysis (N = 236)

Characteristics	Option	Frequency	Percentage
Gender	Male	157	66.53%
	Female	79	33.47%
Age	21-25 years old	38	16.10%
	26-30 years old	108	45.76%
	31-40 years old	73	30.93%
	41-50 years old	17	7.20%
Education	SSCE/WAEC	82	35.08%
	B.Sc.	147	62.29%
	Masters or above	7	2.97%
Marital Status	Single	93	39.41%
	Married	143	60.59%

Table 1 presents the gender distribution of respondents in a study on the influence of infrastructure development on the growth of small-scale enterprises in urban areas of Nigeria, with males representing 157 respondents (66.53%) and females representing 79 respondents (33.47%). This data indicates that the majority of respondents in this study were male, with females comprising a smaller proportion of the sample. This suggests that male-owned small-scale enterprises might be more prevalent or more likely to participate in infrastructure development studies in Nigeria's urban areas than female-owned enterprises. This could have implications for understanding women entrepreneurs' specific challenges and opportunities in this context.

Table 1 also presents the age distribution of respondents and portends that the largest group of respondents (45.76%) falls within the 26-30 years age range, followed by 30.93% in the 31-40 age range. This indicates that a significant majority of the respondents are relatively young entrepreneurs. Only 7.20% of respondents are aged 41-50. This suggests an under-representation of older entrepreneurs in the study. The age distribution might reflect the demographics of

entrepreneurs in urban Nigeria, where a younger generation might be more actively involved in establishing and growing small-scale enterprises.

The educational background of respondents was examined in Table 1, with 62.29% having a B.Sc. degree; this indicates a high level of education among those surveyed. This suggests that many small-scale enterprise owners in this study have undergone university-level education. 35.08% of respondents have completed their Secondary School Certificate Examination (SSCE) or West African Examination Council (WAEC) exams. This suggests that many entrepreneurs may have yet to pursue a university education but still possess secondary-level qualifications. Only 2.97% of respondents hold a Master's degree or higher qualification. This indicates a very low representation of highly educated individuals in the study. The high number of B.Sc. holders might suggest that university education is increasingly valued by entrepreneurs in Nigeria, potentially equipping them with business management skills and knowledge.

Table 1 evaluates the marital status of respondents and shows that 60.59% are married, indicating that a significant portion of small-scale enterprise owners in this study are married. 39.41% of respondents are single, suggesting that many entrepreneurs are unmarried. Married entrepreneurs may face additional responsibilities, such as childcare, that could impact their business operations and decision-making.

TESTING OF RESEARCH HYPOTHESES

H_{01}: There is no significant relationship between transportation networks and productivity

Table 2: Analysis of the effect of *transportation network (TNK)* on *productivity (PDY)*

Correlations

			TNK	PDY
Spearman's rho	TNK	Correlation Coefficient	1.000	.829
		Sig. (2-tailed)	.	.000
		N	236	236
	PDY	Correlation Coefficient	.829	1.000
		Sig. (2-tailed)	.000	.
		N	236	236

Source: SPSS 27.0 output on research data

A Spearman correlation coefficient of 0.829 and a p-value of 0.000 in the relationship between transportation networks and the productivity of Small-Scale Enterprises in Urban Areas of Nigeria indicates a strong positive correlation between these two variables. A correlation coefficient 0.829 suggests a robust relationship between transportation networks and productivity. This means that as the quality and accessibility of the transportation network improve, the productivity of small-scale enterprises tends to increase significantly. The p-value of 0.000 is highly statistically significant (typically, a p-value below 0.05 is considered statistically significant). This means that the observed correlation is unlikely to have occurred by chance and that there is strong evidence to support the relationship between the transportation network and the productivity of small-scale enterprises in the study context.

Hypothesis Two

H_{02}: There is no significant relationship between telecommunication networks and productivity

Table 3: Analysis of the effect of *telecommunication network (TCK)* on *productivity (PDY)*

Correlations

			TCK	PDY
Spearman's rho	TCK	Correlation Coefficient	1.000	.805
		Sig. (2-tailed)	.	.001
		N	236	236
	PDY	Correlation Coefficient	.805	1.000
		Sig. (2-tailed)	.001	.
		N	236	236

Source: SPSS 27.0 output on research data

A Spearman Correlation Coefficient of 0.805 and a p-value of 0.001 in the relationship between telecommunication networks and the productivity of Small-Scale Enterprises in Urban Areas of Nigeria indicates a strong positive correlation between these two variables.

A correlation coefficient 0.805 suggests a robust relationship between telecommunication networks and productivity. This means that as the quality and accessibility of the telecommunication network improve, the productivity of small-scale enterprises tends to increase significantly. The p-value of 0.001 is statistically significant (typically, a p-value below 0.05 is considered statistically significant). This means that the observed correlation is unlikely to have occurred by chance and that there is strong evidence to support the relationship between telecommunication networks and the productivity of small-scale enterprises in the study context.

Discussions of Findings

The statistical analysis used Spearman's Rank and Partial Correlation Coefficient in the social sciences software version 27.0. The results indicate a substantial association between transportation networks and productivity, supporting hypothesis 1. Transportation networks are essential for the socio-economic transformation of regions, facilitating the movement of goods and services, which is crucial for SMEs' productivity (Aworemi & Ajayi, 2013).

Efficient transportation systems reduce operational costs and improve market access, enhancing SMEs' competitiveness (Zakaree, 2022). The positive correlation suggests that better transportation infrastructure directly contributes to increased productivity of SMEs by reducing delays and improving supply chain efficiency (Obasan et al., 2016). Inadequate transportation infrastructure has been identified as a constraint on SMEs' output, limiting their growth potential and economic contributions (Uma et al., 2014).

In South-Western Nigeria, the slow responsiveness of government policies towards integrated transport systems has been shown to affect SMEs' productivity inversely, highlighting the need for improved infrastructure (Obasan et al., 2016). The transportation sector's impact on economic development is significant, with road transport contributing to Nigeria's GDP (Sola, 2013). Nigeria's lack of performance measures and efficient transport services underscores the

need for strategic investments and policy reforms to enhance transportation networks (Aworemi & Ajayi, 2013).

Hypothesis 2 demonstrates a statistically significant correlation between telecommunication networks and productivity. Telecommunication networks facilitate better communication within and outside the organization, enabling faster decision-making and improved customer service, which are crucial for productivity (Odiwo et al., 2023). Improved telecommunication networks provide SSEs with access to vital market information and trends, which can enhance strategic planning and operational efficiency (Olatunji, 2015). Telecommunication networks enable SSEs to engage in networking, which has been shown to significantly impact business performance by providing access to resources, knowledge, and markets (Aladejebi, 2020; Isiaka et al., 2022).

The integration of Information and Communication Technology (ICT) in business processes, facilitated by robust telecommunication networks, has been linked to increased efficiency and productivity in SMEs (Igboeli, U. H., & Bisallah, H. I. (2020; John & Okafor, 2017). Telecommunication networks support social media and e-commerce platforms, which have been shown to enhance customer engagement and expand market reach, thereby boosting productivity (Yunusa & Paul, 2018).

The telecommunication sector provides employment opportunities and indirectly supports the productivity of SSEs by increasing economic activity in urban areas (Odiwo et al., 2023). Strong telecommunication networks often correlate with better infrastructure, which is essential for the smooth operation of SSEs (Ojotu et al., 2019).

Conclusion

This study examined the critical influence of infrastructure development on the growth of Small-Scale Enterprises (SSEs) within urban areas of Nigeria. The research findings strongly suggest a positive correlation between the availability and quality of infrastructure and the success of these vital economic drivers. Improved road networks significantly reduced transportation costs for SSEs, facilitating the timely delivery of goods and services. This enhanced market access and expanded customer reach. Furthermore, advancements in telecommunications infrastructure, particularly internet access, empowered SSEs to leverage e-commerce, online marketing, and access to information, thereby enhancing their competitiveness.

The study underscores the critical role of government intervention in investing in and maintaining high-quality infrastructure. Policy interventions to improve road networks, expand electricity access, enhance water supply and sanitation systems, and expand telecommunications infrastructure are crucial for fostering a conducive business environment for SSEs in Nigeria.

Recommendations

In light of the preceding discussions and findings, this study recommends the following on the influence of infrastructure development on the expansion of small-scale firms in urban Nigeria.

i. The government must prioritise road infrastructure construction, as it is essential. This encompasses investing in the building and upkeep superior roads, extending road networks to link metropolitan centers with rural regions, enhancing market

accessibility, and instituting efficient traffic management systems to mitigate congestion and journey duration.

ii. It is essential to prioritise developing and extending dependable and cost-effective telecommunication networks in Nigeria's urban regions. This encompasses expanding broadband internet access, enhancing telecommunications infrastructure to facilitate increased bandwidth and accelerated speeds, providing training and support programs to equip SME proprietors and personnel with essential digital competencies, and ensuring equitable access to telecommunication services throughout all segments of the SME sector, particularly in underserved and marginalised communities.

iii. Creating a conducive climate is essential for the growth of SMEs. This entails streamlining business registration and licensing processes, enhancing access to financing through diverse methods, and investing in initiatives providing SME owners and managers with the requisite skills and expertise to leverage contemporary infrastructure and technology effectively.

iv. Encouraging public-private partnerships is essential to utilizing private sector expertise and infrastructure development and maintenance resources. It is also essential to assess and appraise infrastructure development and its effects on SME expansion on an ongoing basis. This entails systematic evaluations to guide and enhance policy determinations.

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