

E-Governance and Economic Development in Sub-Saharan Africa of Small and Medium Enterprises of Enugu State

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Abstract

This study examined the relationship between e-governance and economic growth in Enugu State, Nigeria, within the Sub-Saharan African context. Specifically, it investigated the relationship between open data websites and foreign direct investment (FDI), as well as the relationship between electronic procurement systems and the performance of public-sector small and medium-sized enterprises (SMEs) in Enugu State. The study focused on five firms in Enugu State, selected based on workforce size and years of operation. The total population comprised 731 respondents. Using Freund and William's formula, a sample size of 252 was determined. Data were collected through structured questionnaires, of which 244 were completed and returned. The data were analyzed using mean scores, and hypotheses were tested using Z-tests with SPSS. The findings revealed a significant positive relationship between open data websites and foreign direct investment (FDI) ($Z = 9.283, p \leq 0.05$). Additionally, a significant positive relationship was found between electronic procurement systems and the performance of public-sector SMEs in Enugu State ($Z = 10.499, p \leq 0.05$). The study concluded that open data websites and electronic procurement systems positively influence economic output, revenue generation, foreign direct investment, and public-sector SME performance in Enugu State. Consequently, the study recommends that government invest in the expansion and usability of digital public service platforms, such as online business registration, tax filing, and access to government support. These platforms should be mobile-friendly, affordable, and easily accessible to enhance SME productivity and economic growth in Enugu State

Keywords: E-governance, Economic Growth, Electronic Procurement, Foreign Direct Investment (FDI), Small and Medium Enterprises (SMEs), Enugu State.

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Introduction

E-governance, which involves the use of information and communication technologies (ICTs) by governments to deliver public services, engage citizens, and improve administrative operations, emerged in the late 20th century. Initially, developed countries adopted e-governance to improve bureaucratic efficiency, reduce costs, and enhance transparency. As digital technologies became more affordable and widespread, developing countries also began adopting e-governance, often encouraged by global institutions and governance reform programs.

Globally, research suggests that e-governance can positively influence economic performance. For instance, studies link e-government adoption with reduced corruption, improved tax administration, and increased government revenue (Bailey, 2024). In many countries, particularly in Asia, Eastern Europe, and Latin America, digital public services such as online business registration, tax filing, and licensing have reduced transaction costs for businesses and improved the efficiency of public institutions. These improvements often extend to small and medium-sized enterprises (SMEs), supporting them through shorter processing times, more predictable procedures, and improved market access.

In Nigeria, e-governance has been part of public sector reform initiatives for many years. Efforts such as the digitization of tax and customs services, online business registration, and electronic procurement aim to improve the business environment, increase government revenue, and support private sector growth.

Small and medium-sized enterprises (SMEs) are central to the economy of Enugu State, Nigeria, contributing significantly to job creation, wealth generation, and poverty reduction. Despite numerous challenges, SMEs in Enugu State remain vital to the state's economic development.

SMEs are a major source of employment in Enugu State. A study by Asogwa, Nzewi, and Essell (2024) found a significant relationship between SME activity and job creation in the state. The study showed that SMEs help reduce unemployment by providing jobs across various sectors. This job creation is critical for poverty reduction, as it provides income for many households.

SME activities in Enugu State have also improved living standards for many residents. Ogbu and Ugwu (2023) noted that SMEs contribute to wealth creation and improved quality of life by offering goods and services that meet local needs. The expansion of SMEs has increased access to products and services, thereby enhancing overall living conditions.

Access to finance remains a major challenge for SMEs in Enugu State. A study by Dialoke, Joseph, and Obiageli (2018) found that microfinance institutions support the growth of micro-scale enterprises by providing credit facilities. However, the study also highlighted that strict lending conditions and high interest rates charged by commercial banks limit medium-scale enterprises' access to adequate funding. This financial constraint hampers SME growth in the state.

Entrepreneurship education is also crucial to SME performance in Enugu State. Ejimonye (2023) emphasized that entrepreneurial skills acquired through education are essential for SME success. The study stressed that knowledge and competencies gained from entrepreneurship training are necessary for business growth, as they equip entrepreneurs with the skills needed to manage business challenges effectively.

The Enugu State Government recognizes the importance of SMEs for economic development and has established the Enugu State SME Centre to support their growth. The Centre promotes, monitors, and coordinates SME development, formulates policy initiatives for SME growth, and supports programs aimed at modernizing MSME operations. These efforts are designed to create an enabling environment in which SMEs can thrive and contribute to the state's economy. Consequently, this study examined the relationship between e-governance and economic growth among small and medium-sized enterprises in Enugu State, Nigeria, within the Sub-Saharan African context.

Statement of the Problem

Ideally, digital technologies should be utilized to streamline public service delivery, enhance government transparency, and promote economic growth. When effectively implemented, e-governance is expected to improve the business environment for small and medium-sized enterprises (SMEs) by reducing administrative delays, minimizing corruption, and lowering the cost of accessing government services such as business registration, tax filing, procurement, and access to public data. Globally, such systems have played a significant role in improving SME productivity, increasing revenue, and attracting foreign direct investment.

However, in Enugu State, Nigeria, within the Sub-Saharan African context, e-governance has not been fully leveraged to drive economic growth, particularly for SMEs. Although some digital platforms exist, challenges such as inadequate internet infrastructure, limited digital facilities, low digital literacy among SME operators, restricted access to open government data, and incomplete electronic procurement systems undermine the effectiveness of e-governance initiatives. Furthermore, many SMEs—especially those located in rural areas—struggle to adopt these digital platforms due to limited awareness, affordability constraints, and policy gaps. As a result, the efficiency, transparency, and accessibility promised by e-governance have not been fully realized in the state's SME sector.

If these challenges remain unaddressed, SMEs in Enugu State may continue to experience high operational costs, limited access to government support, and restricted market opportunities. This situation could weaken SMEs' contributions to employment generation, income creation, and local economic growth, thereby undermining broader goals of digital transformation, inclusive growth, and poverty reduction in the region.

Objectives of the Study

The main objective of the study was to evaluate E-governance and Economic Development in Sub-Saharan Africa of Small and Medium Enterprises of Enugu State. The specific objectives were:

- i. Examine the relationship between open data portals and foreign direct investment (FDI) of small and medium enterprise (SME) in Sub-Saharan of Enugu State.
- ii. Ascertain the relationship between electronic procurement systems and public sector efficiency of small and medium enterprise (SME) in Sub-Saharan of Enugu State.

Research Questions

The following research questions guided the study:

- i. What is the relationship between open data portals and foreign direct investment (FDI) of small and medium enterprise (SME) in Sub-Saharan of Enugu State?
- ii. What is the relationship between electronic procurement systems and public sector efficiency of small and medium enterprise (SME) in Sub-Saharan of Enugu State?

Statement of the Hypotheses

The following hypotheses guided the study:

- i. Open data portals have no significant relationship with foreign direct investment (FDI) of small and medium enterprise (SME) in Sub-Saharan of Enugu State.
- ii. Electronic procurement systems no significant relationship with public sector efficiency of small and medium enterprise (SME) in Sub-Saharan of Enugu State.

Review of Related Literature

Conceptual Review

E-Governance

E-Governance refers to how digital technology, such as the internet, can make government operations more efficient, transparent, and accountable. In Sub-Saharan Africa, it has the potential to transform government administration, service delivery, and citizen engagement. Its goal is to make government more accessible, transparent, and effective.

E-Governance could address several major challenges in Sub-Saharan Africa, including weak institutional systems, corruption, and slow service delivery. Utilizing online platforms for activities such as voting, taxation, healthcare, and education could broaden access, reduce corruption by increasing transparency, and improve the efficiency of government operations. However, the adoption of e-governance varies across countries in Sub-Saharan Africa due to differences in technological infrastructure, internet accessibility, and government support (Kaur & Bhardwaj, 2019; Akinboade & Kinfack, 2020).

Components of E-Governance that formed part of the objectives of the Study

Open Data Portals

Open data portals are online platforms where governments share data with the public. They promote transparency, enable citizens to monitor government activities, and help individuals, businesses, and researchers make informed decisions. They serve as a way to make governments in Sub-Saharan Africa more transparent, provide better services, and support decision-making with evidence. Open data is becoming increasingly popular in Sub-Saharan Africa, with governments sharing information such as budgets, health statistics, environmental data, and educational metrics. This access allows citizens and organizations to advocate for accountability and improved governance (Ojo, 2020).

Electronic Procurement Systems

Electronic procurement systems use technology to manage the purchasing process in both government and private organizations. They streamline transactions, increase transparency, and reduce costs. These systems allow stakeholders to monitor transactions in real time, submit bids online, and maintain records, which helps prevent fraud and unethical practices (Ojo, 2020). Transparent procurement also builds public trust. However, successful implementation requires government personnel to be trained in using these systems and for clear regulations governing online procurement to be established (Akinboade & Kinfack, 2020).

Economic Development

Economic development in Sub-Saharan Africa involves improving living standards, promoting sustainable growth, and enhancing overall societal well-being. It encompasses not only increasing national wealth but also improving health, education, employment opportunities, and poverty reduction. Economic growth is particularly important in Sub-Saharan Africa due to historical challenges such as weak governance, inadequate infrastructure, and dependence on primary resources. Recently, the region has experienced progress through increased foreign investment, better governance, and a growing middle class. Countries such as Ethiopia, Rwanda, and Ghana have achieved notable success by leveraging agriculture, services, and infrastructure development to strengthen their economies (Akinboade & Kinfack, 2020).

Components of Economic Development

Foreign Direct Investment (FDI) of Small and Medium Enterprise (SME)

Foreign Direct Investment (FDI) occurs when investors from one country put money into a business in another country with the intention of maintaining a lasting interest. This typically involves owning a significant portion of the business (usually 10% or more) and contributing not only capital but also management expertise, technology, or strategic guidance. FDI in small and medium enterprises (SMEs) is particularly important. Traditional FDI theories do not always fully explain the motivations of SMEs. According to Pu and Zheng (2015), more SMEs are engaging in FDI to access new markets, secure resources, or acquire knowledge. However, SMEs handle FDI differently from large corporations.

FDI can help SMEs in developing countries improve their capabilities. Bairagi notes that if SMEs can learn and adopt new practices, they can gain advanced technology and establish connections with major global companies. Conversely, if they fail to absorb these benefits, they may not fully capitalize on the investment or could even incur losses. Lugemwa (2014) emphasizes that the impact of FDI on SME growth depends on their capacity to learn from foreign partners. Santos et al. (2023) found that SMEs established before market liberalization are less likely to use FDI for international expansion than those established afterward, highlighting how a firm's founding period, background, and surrounding environment influence its FDI strategies.

Public Sector Efficiency of Small and Medium Enterprise (SMEs)

Public sector efficiency in relation to SMEs refers to how effectively government agencies utilize resources such as time, finances, and regulations to support or regulate these businesses. Efficient governments provide timely and useful services, such as licensing and financial support, which facilitate SME growth. In contrast, inefficient governments may impose delays and obstacles, costing SMEs money, time, and growth opportunities (Aluko et al., 2022; Bakare et al., 2024).

Generally, government efficiency affects SMEs' access to regulations, funding, and procurement services. When the government operates effectively, SMEs can complete tasks more quickly, comply with regulations at lower costs, access broader markets, and benefit from targeted support. Inefficiency, on the other hand, can result in wasted resources and hinder SME growth.

Theoretical Framework

This study was underpinned by the Technology Acceptance Model (TAM), developed by Fred Davis in 1986, which explains how individuals and organizations adopt technology based on perceived usefulness and perceived ease of use.

The Technology Acceptance Model identifies two key factors:

- i. **Perceived Usefulness (PU):** The degree to which a person believes that using a particular system would enhance their job or business performance.
- ii. **Perceived Ease of Use (PEOU):** The degree to which a person believes that using the system would require minimal effort.

TAM has been widely applied to explain why individuals and organizations adopt online government services, particularly in developing countries.

Application to E-Governance and Economic Development of SMEs in Enugu State In the context of Small and Medium Enterprises (SMEs) in Enugu State, TAM helps explain how e-governance platforms such as business registration portals, tax systems, trade information services and digital payment systems can influence SME performance and contribute to economic development.

How TAM Relates to E-Governance and SMEs in Enugu State:

- i. Perceived Usefulness (PU) and SME Growth: SMEs are more likely to adopt e-governance services when they believe these tools improve market access, simplify regulatory compliance, and streamline interactions with government agencies. For example, online business registration through the Corporate Affairs Commission (CAC) reduces bureaucratic delays, allowing entrepreneurs to start operations more quickly.
- ii. Perceived Ease of Use (PEOU) and Digital Inclusion: When e-governance systems are user-friendly and accessible even to individuals with low digital literacy, SMEs are more likely to use them regularly. Mobile-friendly platforms and support services encourage greater participation from small business owners in rural and semi-urban areas.
- iii. Behavioral Intention to Use: If SMEs perceive both usefulness and ease of use, they are more inclined to continuously engage with e-governance tools for tasks such as tax filing, accessing funding programs, or applying for permits.
- iv. Economic Development Outcomes: Increased adoption of e-governance among SMEs leads to higher formalization rates, better access to credit (due to official records), improved tax compliance, and more robust data for economic planning. These outcomes contribute to broader economic development by enhancing productivity, job creation, and local investment.

Implications for Sub-Saharan Africa and Enugu State:

- i. **Policy Makers:** Should focus on improving the usability and relevance of e-governance platforms to encourage SME participation.
- ii. **SME Development Agencies:** Need to invest in digital literacy training and infrastructure to support the use of these systems.
- iii. **Governments:** Must ensure systems are reliable, secure, and tailored to local business environments to build trust and promote usage.

By grounding this study in TAM, it is possible to understand how e-governance influences the economic development of SMEs in Enugu State. Focusing on perceived usefulness and ease of use allows governments and policymakers to design digital platforms that are more readily adopted by SMEs, leading to increased formalization, productivity, and economic growth across Sub-Saharan Africa.

Empirical Review

Ekeocha et al. (2025) looked at how money from other countries affects how much small businesses in Lagos, Nigeria, make. They discovered that money from other countries, mainly Foreign Direct Investment (FDI), helps these businesses make more money.

Farole & Winkler (2025) researched how FDI can help Sub-Saharan Africa by improving local businesses and making them more competitive in the world market. The research discusses the conditions that influence the extent to which FDI results in benefits, such as the capabilities of local companies, the quality of institutions, and the integration of local companies into global networks. This included creating a better setting for businesses, investing in education.

Agboola-Faye & Akintunde (2025) investigated how FDI can help small businesses in Lagos State do better. They found that FDI can help businesses use their production space better, make customers happier, and improve how they do things.

Egbivwie et al. (2024) studied how digital info affects small business success in Enugu State. They found that e-books help keep customers, and blogs help businesses produce more.

Aliyu & Ibrahim (2024) studied how online purchasing affects how well government groups do in Nigeria, showing that it has a good effect.

Ayodolapo, et al. (2024) studied how using online systems affects small businesses in Nigeria. They found that when small businesses use things like online purchasing they typically succeed.

Obazele & Osuji (2025) studied how online systems can help buying be more sustainable in Edo State, Nigeria. They saw that e-registration and e-evaluation can really help make things clear and follow sustainability rules.

Aduwo, et al. (2025) studied how much using electronic systems has increased globally in business. Results show that the main users of e-procurement were, quantity surveyors and construction/project managers in consulting firms.

Methodology

The study focused on five (5) selected firms within Enugu State, Nigeria, with a high number of staff and long years of establishment. The total population for the study was seven hundred and thirty-one (731). To determine an adequate sample size of 252, the study used Freund and Williams' statistical formula. A survey design was adopted for the study. Two hundred and forty-four (244) copies of the questionnaire were properly completed and returned. The validity of the instrument was tested using content analysis, and the result was satisfactory. Reliability was tested using the Pearson correlation coefficient (r), which yielded a reliability coefficient of 0.83, indicating good reliability. Data were presented and analyzed using mean scores, and the Z-test was employed to test the hypotheses with the aid of the Statistical Package for Social Sciences (SPSS).

Data Presentation and Analyses

The relationship between open data portals and foreign direct investment (FDI) of small and medium enterprise (SME) in Sub-Saharan of Enugu State.

Table 1: Responses on the relationship between open data portals and foreign direct investment (FDI) of small and medium enterprise (SME) in Sub-Saharan of Enugu State.

	5 SA	4 A	3 N	2 DA	1 SD	ΣFx	- X	SD	Decision	
1	Open data portals provide transparent and reliable information about local markets, making it easier for foreign investors to assess and invest in SMEs in Enugu State.	425 85 34.8	460 115 47.1	78 26 10.7	2 1 .4	17 17 7.0	982 244 100.0	4.02	1.050	Agree
2	When government and private sector data are made publicly accessible, it builds investor confidence by reducing perceived risks and uncertainties in the SME ecosystem.	455 91 37.3	460 115 47.1	78 26 .4	2 1 4.5	11 11 4.5	1006 244 100.0	4.12	.943	Agree
3	Open data on infrastructure, demographics, and consumer behavior helps foreign investors identify high-potential sectors within the Enugu SME space, directing more targeted FDI.	395 79 32.4	460 115 47.1	102 34 13.9	2 1 .4	15 15 6.1	974 244 100.0	3.99	1.018	Agree
4	SMEs in Enugu that leverage insights from open data portals can better align their strategies with investor priorities, making them more attractive for international funding.	425 85 34.8	460 115 47.1	60 20 8.2	14 7 2.9	17 17 7.0	976 244 100.0	4.00	1.085	Agree
5	The presence of open data portals signals good governance and transparency, which are key criteria foreign investors consider before committing funds to local SMEs	420 84 34.4	460 115 47.1	81 27 11.1	2 1 .4	17 17 7.0	980 244 100.0	4.02	1.050	Agree
Total Grand mean and standard deviation							4.03	1.0292		

Source: Field Survey, 2025

Table 1 shows that 200 respondents out of 244, representing 81.9%, agreed that open data portals provide transparent and reliable information about local markets, making it easier for foreign investors to assess and invest in SMEs in Enugu State, with a mean score of 4.02 and a standard deviation of 1.050. Additionally, 206 respondents, representing 84.4%, agreed that when government and private sector data are made publicly accessible, it builds investor confidence by reducing perceived risks and uncertainties in the SME ecosystem, with a mean score of 4.12 and a standard deviation of 0.943. Furthermore, 194 respondents, representing 79.5%, agreed that open data on infrastructure, demographics, and consumer behavior helps foreign investors identify high-potential sectors within the Enugu SME space, directing more targeted FDI, with a mean score of 3.99 and a standard deviation of 1.018. Also, 200 respondents, representing 81.9%, agreed that SMEs in Enugu that leverage insights from open data portals can better align their strategies with investor priorities, making them more attractive for international funding, with a mean score of 4.00 and a standard deviation of 1.085. Finally, 199 respondents, representing 81.5%, agreed that the presence of open data portals signals good governance and transparency, which are key criteria foreign investors consider before committing funds to local SMEs, with a mean score of 3.76 and a standard deviation of 1.456.

The relationship between electronic procurement systems and public sector efficiency of small and medium enterprise (SME) in Sub-Saharan of Enugu State.

Table 2: Responses on the relationship between electronic procurement systems and public sector efficiency of small and medium enterprise (SME) in Sub-Saharan of Enugu State.

	5 SA	4 A	3 N	2 DA	1 SD	ΣFx	- X	SD	Decision
1	Electronic procurement systems reduce manual processing time and paperwork, enabling faster awarding of public contracts to SMEs in Enugu State.	425 85 34.8	460 115 47.1	63 21 8.6	12 6 2.5	17 17 7.0	977 244 100.0	4.00 1.079	Agree
2	The transparency of e-procurement platforms minimizes corruption and favoritism, allowing more SMEs to compete fairly for government tenders.	390 78 32.0	588 147 60.2	3 1 .4	2 1 .4	17 17 7.0	1000 244 100.0	4.10 .981	Agree
3	With automated procurement systems, public agencies can track SME participation and spending in real time, leading to more efficient resource allocation.	390 78 32.0	588 147 60.2	3 1 .4	2 1 .4	17 17 7.0	1000 244 100.0	4.10 .981	Agree
4	E-procurement simplifies vendor registration and bidding processes, lowering entry barriers for SMEs and increasing their chances of securing contracts	440 88 36.1	496 124 50.8	21 7 2.9	16 8 3.3	17 17 7.0	990 244 100.0	4.06 1.072	Agree
5	By improving procurement planning and forecasting, electronic systems help government agencies identify gaps and align procurement with SME capabilities.	440 88 36.1	685 137 56.1	3 1 .4	2 1 .4	77 17 7.0	1207 244 100.0	4.14 .996	Agree
Total Grand mean and standard deviation							4.08	1.0218	

Source: Field Survey, 2025

Table 2 shows that 200 respondents out of 244, representing 81.9%, agreed that electronic procurement systems reduce manual processing time and paperwork, enabling faster awarding of public contracts to SMEs in Enugu State, with a mean score of 4.00 and a standard deviation of 1.079. Additionally, 225 respondents, representing 92.2%, agreed that the transparency of e-procurement platforms minimizes corruption and favoritism, allowing more SMEs to compete fairly for government tenders, with a mean score of 4.10 and a standard deviation of 0.981. Similarly, 225 respondents, representing 92.2%, agreed that with automated procurement systems, public agencies can track SME participation and spending in real time, leading to more efficient resource allocation, with a mean score of 4.10 and a standard deviation of 0.981. Furthermore, 212 respondents, representing 86.9%, agreed that e-procurement simplifies vendor registration and bidding processes, lowering entry barriers for SMEs and increasing their chances

of securing contracts, with a mean score of 4.06 and a standard deviation of 1.072. Finally, 225 respondents, representing 92.2%, agreed that by improving procurement planning and forecasting, electronic systems help government agencies identify gaps and align procurement with SME capabilities, with a mean score of 4.14 and a standard deviation of 0.996.

Test of hypotheses

Test of hypotheses one: Open data portals has significant relationship with foreign direct investment (FDI) of small and medium enterprise (SME) in Sub-Saharan of Enugu State

Table 3: One-Sample Kolmogorov-Smirnov Test

	Open data portals provide government and transparent and reliable information about local markets, making it easier for foreign investors to assess and invest in SMEs in Enugu State.	When government and private sector data are made publicly accessible, it builds confidence for foreign investors to invest in SMEs in Enugu State.	Open data on infrastructure, demographics, and consumer behavior helps foreign investors identify potential sectors within the SME ecosystem.	SMEs in Enugu that leverage insights from foreign investors' high-priority sectors, directing more targeted FDI.	The presence of open data portals signals that SMEs in Enugu can better align their strategies and priorities, making them more attractive for international funding.	The presence of open data portals signals that SMEs in Enugu can better align their strategies and priorities, making them more attractive for international funding.
N	244	244	244	244	244	244
Uniform Parameters ^{a,b}	Minimum 1	1	1	1	1	1
	Maximum 5	5	5	5	5	5
Most Extreme Differences	Absolute .570	.594	.545	.570	.566	
	Positive .070	.045	.061	.070	.070	
	Negative -.570	-.594	-.545	-.570	-.566	
Kolmogorov-Smirnov Z	8.899	9.283	8.514	8.899	8.835	
Asymp. Sig. (2-tailed)	.000	.000	.000	.000	.000	

a. Test distribution is Uniform.

b. Calculated from data.

Decision Rule

If the calculated Z-value is greater than the critical Z-value (i.e $Z_{\text{cal}} > Z_{\text{critical}}$), reject the null hypothesis and accept the alternative hypothesis accordingly.

Result

With Kolmogorov-Smirnov Z – value ranges from $8.514 < 9.283$ and on Asymp. Significance of 0.000, the responses from the respondents as display in the table is normally distributed. This affirms the assertion of the most of the respondents that Open data portals had significant positive relationship with foreign direct investment (FDI) of small and medium enterprise (SME) in Sub-Saharan of Enugu State

Decision

Furthermore, comparing the calculated Z- value ranges from $8.514 < 9.283$ against the critical Z- value of .000 (2-tailed test at 95percent level of confidence) the null hypothesis were rejected. Thus the alternative hypothesis was accepted which states that Open data portals had significant positive relationship with foreign direct investment (FDI) of small and medium enterprise (SME) in Sub-Saharan of Enugu State

Test of hypotheses two: Electronic procurement systems has significant relationship with public sector efficiency of small and medium enterprise (SME) in Sub-Saharan of Enugu State

Table 4: One-Sample Kolmogorov-Smirnov Test

	Electronic procurement systems reduce manual processing time and paperwork, enabling faster awarding of public contracts to SMEs in Enugu State.	The transparency of e-procurement platforms minimizes corruption and favoritism, allowing more contracts to SMEs in Enugu State.	With automated procurement systems, public agencies can track SME participation in tenders.	E-procurement simplifies vendor registration and bidding processes, lowering entry barriers for SMEs.	By improving procurement forecasting, electronic systems help government agencies identify gaps and align procurement with SME capabilities.
N	244	244	244	244	244
Uniform Parameters ^{a,b}	Minimum 1	1	1	1	1
	Maximum 5	5	5	5	5
Most Extreme Differences	Absolute .570	.672	.672	.619	.672
	Positive .070	.070	.070	.070	.070
	Negative -.570	-.672	-.672	-.619	-.672
Kolmogorov-Smirnov Z	8.899	10.499	10.499	9.667	10.499
Asymp. Sig. (2-tailed)	.000	.000	.000	.000	.000

a. Test distribution is Uniform.

b. Calculated from data.

Decision Rule

If the calculated Z-value is greater than the critical Z-value (i.e $Z_{\text{cal}} > Z_{\text{critical}}$), reject the null hypothesis and accept the alternative hypothesis accordingly.

Result

With Kolmogorov-Smirnov Z – value ranges from $8.899 < 10.499$ and on Asymp. Significance of 0.000, the responses from the respondents as display in the table is normally distributed. This affirms the assertion of the most of the respondents that Electronic procurement systems had significant positive relationship with public sector efficiency of small and medium enterprise (SME) in Sub-Saharan of Enugu State

Decision

Furthermore, comparing the calculated Z- value ranges from $8.899 < 10.499$ against the critical Z- value of .000 (2-tailed test at 95percent level of confidence) the null hypothesis were rejected. Thus the alternative hypothesis was accepted which states that Electronic procurement systems had significant positive relationship with public sector efficiency of small and medium enterprise (SME) in Sub-Saharan of Enugu State

Discussion of Findings

Open Data Portals and Foreign Direct Investment (FDI) of SMEs in Sub-Saharan Enugu State: Hypothesis one shows Z-values between 8.514 and 9.283, which are above the critical Z-value of 0.000. This suggests a positive relationship between open data portals and foreign direct investment (FDI) in small and medium enterprises (SMEs) in Sub-Saharan Enugu State. Rufai (2025) found that communication technologies generally support SMEs in developing economies, although the extent of their impact depends on factors such as income and education. Okolo-Obasi, Nwanmuoh, Ifediora, and Onwuama (2025) reported that digital commerce, which relies on internet access, enhances SME performance and profitability in Sub-Saharan Africa. Similarly, Irughe and Oseyomon (2025) demonstrated that social media and email marketing can boost sales for SMEs in Benin City.

Electronic Procurement Systems and Public Sector Efficiency of SMEs in Sub-Saharan Enugu State: Hypothesis two results indicate calculated Z-values between 8.899 and 10.499, while the critical Z-value is 0.000. This suggests a positive association between electronic procurement systems and public sector efficiency for SMEs in Sub-Saharan Enugu State. Prior studies support these findings. For example, Ayodolapo, Raji, and Afees (2024) found that e-procurement adoption positively affects SME business performance, particularly in procurement processes. They noted that user-friendly e-procurement systems and tools such as e-ordering and e-invoicing improve SME efficiency. Obazele and Osuji (2025) investigated how e-government procurement systems promote sustainable procurement in Edo State, Nigeria, reporting that e-registration and e-evaluation enhance transparency. Additionally, Aduwo, Ibem, Ayo-Vaughan, Uwakonye, Afolabi, Oluwunmi, and Tunji-Olayeni (2025) observed a global increase in electronic procurement since the mid-1990s, with quantity surveyors, construction, and project managers in consulting firms being the primary users of e-procurement systems.

Summary of Findings, Conclusion and Recommendations

Summary of Findings

- i. Open data portals had a significant positive relationship with foreign direct investment (FDI) of small and medium enterprises (SMEs) in Sub-Saharan Enugu State, $Z = 9.283$, $p = 0.05$.
- ii. Electronic procurement systems had a significant positive relationship with public sector efficiency of SMEs in Sub-Saharan Enugu State, $Z = 10.499$, $p = 0.05$.

Conclusion

The study concluded that open data portals and electronic procurement systems have significant positive relationships with foreign direct investment and public sector efficiency of SMEs in Sub-Saharan Enugu State. E-governance has emerged as a transformative tool for driving economic development in the region by enhancing transparency, efficiency, and inclusivity in public service delivery.

The integration of digital platforms in government processes such as e-procurement, open data portals, and online business registration has significantly reduced bureaucratic bottlenecks and created a more enabling environment for SMEs to thrive. As a result, SMEs are better positioned to access public contracts, attract foreign investment, and expand into digital markets. Furthermore, improved access to information and streamlined government services have empowered citizens and businesses alike, fostering greater trust and accountability. Therefore, the adoption of e-governance in Enugu State accelerates economic activities and lays a strong foundation for sustainable and inclusive growth across the region.

Recommendations

Based on the results, the following recommendations are proffered:

- i. To attract more foreign direct investment (FDI) into SMEs in Sub-Saharan Enugu State, the government should develop and maintain open data portals that provide up-to-date, reliable, and easily accessible information on SME performance, market trends, and investment opportunities, thereby enhancing transparency and investor confidence.
- ii. To improve public sector efficiency and increase SME participation in Sub-Saharan Enugu State, the government should fully implement and streamline electronic procurement systems that ensure transparent, timely, and simplified access to public tenders for SMEs.

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