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Effect of Infrastructure Facilities on Small Scale Enterprise Performances in Zamfara State

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ABSTRACT
This research work aimed to investigate theeffect of infrastructure on small scale enterprise performances in Zamfara state. Specifically, the study examined the effect of transportation infrastructure, electricity infrastructure and technological infrastructure on SMEs performances in Zamfara state. The study employed quantitative research approach. In particular survey research design. Data was collected from 280 respondents that are small business owners in Zamfara state Nigeria, using structured questionnaire. Structural equation modelling both the measurement and structural models were used to validate and confirmed the hypothesized relationships. The study finding revealed that transportation infrastructure recorded a minimal impact and therefore it has no statistical significant impact on SMEs performance while both electricity infrastructure and technological infrastructure recorded a significant impact on SMEs performances in Zamfara state. the state should minimized its commitment on transportation and invest more on electricity infrastructure and technological infrastructure and encourage collaboration between the government and private sector to invest in infrastructure projects. Public-private partnerships can leverage additional resources and expertise to accelerate infrastructure development in Zamfara state.

Keywords; Infrastructure, SMEs, transportation, electricity and technological

I. INTRODUCTION

Globally, small and medium-sized businesses (SMEs) are a phenomenon and important forces behind economic development and expansion (Oyewobi, Adedayo, Olorunyomi, & Jimoh, 2023). Never before have SMEs been more significant than they are now: they boost employment opportunities, lower rates of poverty and crime, encourage innovation and creativity in entrepreneurs, raise people's standards of living, support research and development (R&D), increase a nation's GDP, provide raw materials for industry, support international economic integration, and foster the growth of entrepreneurial skills, including the use of local technology. (Surya, Menne, Sabhan, Suriani, Abubakar, & Idris, 2021).

SMEs in Zamfarastate are growing at a higher rate on daily basis, but most of them fail in the first few years of operation due to the rapid acceleration of their establishment. The prevailing issues in Zamfara state hinder the ability of small and medium-sized businesses to thrive and, consequently, to effectively contribute to the state's economic development. Among other issues, inadequate infrastructure continues to be a barrier to small and medium-sized businesses' ability to thrive, expand, and operate well (Ojimaojo, Murtadho, & Bhaumik, (2020).

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Infrastructure is a crucial concept for evaluating a region or nation's progress around the growth circle. It can be defined as a collection of interrelated parts that offer a foundation for the entire structure for development (Mugo et al. 2019). Infrastructure is defined as the physical components of interconnected systems that provide goods and services necessary to support and enable current societal situations. The term also refers to technical structures that support society, such as water supplies, electricity grids, bridges, roads, telecommunications, and sewers (Mugo et al. 2019).

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Infrastructures support the vital social economic services while facilitating the production of goods and services and the delivery of completed goods to markets.The survival of SMEs is primarily hampered by the poor performance of infrastructure facilities, which is characterized by expensive transportation systems, frequent interruptions in the electrical power supply, and inconsistent communication systems (Ayensuwa (2021). A major threat to the expansion of SMEs in Nigeria is inadequate infrastructure. In terms of output volume, revenue, profits, and productivity, a firm's performance is greatly impacted by fluctuations in the quality of the infrastructure utilized in the production processes. However, most developing countries still lack adequate infrastructure, despite the fact that both the quantity and quality of infrastructure have a direct impact on economic development. Underdeveloped nations' incapacity to fairly compete in the global market has been impacted by their lack of adequate infrastructure (Mhlanga, (2021).Given this back drop, the study sought to investigate the impact of infrastructure deficit and Small Scale Enterprise Performances in Zamfarastate. However, infrastructure in this study is proxies by three variables vis-à-vis transportation, energy supply and communication, serves as an independent variables.

II. STATEMENT OF PROBLEMS

Small and medium-sized businesses (SMEs), are vital component of any economy. They are typically regarded as essential for fostering job opportunities and economic growth within an economy (Varga, 2021). In most economies, a greater proportion of the population is engaged in some sort of Small and Medium Enterprise (SMEs), which can range from micro manufacturing units producing a variety of household products and services to farmers and artisans. About 87% of the economy is made up of small and medium-sized businesses, according to the National Bureau of Statistics (NBS) (Nnenna, & Ogochukwu, 2023). About half of the country's GDP is made up of SMEs (Taiwo, Hakan & Savaş, (2022).Averagely, SMEs represent above 90% of the enterprises and make up 50 to 60% of employment in the country. Nigeria SMEs make available around 50% of all the jobs and enable nation natural resources be utilized due to their high innovativeness. However the surviving life span of SMEs in Zamfara state is at declining stage and the socio economic problem addressed by these SMEs is at abating stage, with a consequences of higher rate of unemployment, higher cost of living standard, higher rate of poverty and inconsistencies in security of life and business property in the state.Fungo & Maziku (2022)affirm that declining stage of SMEs is attributed to high cost of transportation, inconsistencyin electricity power supply and poortechnological facilities are predominantly issues embedding the SMEs.Zamfara state is ranked outside the top ten of state with infrastructure for ease of doing business in Nigeria (Shehu, 2023). Due to lack of good infrastructures in the state, most businesses find it difficult to perform to expectation, it's on this affirmation that the researcher is out to measure the Impact of infrastructure deficit on Small Scale Enterprise Performances in Zamfara State.

III. RESEARCH QUESTIONS

The following research questions were drawn to guide the study. The research questions are to extent does;

1. What are the influence of transportation on Small Scale Enterprise Performances in Zamfara State?
2. Do electricity power have significant impact on SMEs performance in Zamfara State?
3. What are the effect of technology on Small Scale Enterprise Performances in Zamfara State?

IV. RESEARCH OBJECTIVE

The main objective is to examine the effect of Infrastructure deficit on Small Scale Enterprise Performances in Zamfara State. The specific objectives are whether:

1. To determine the effect of higher transportation cost on Small Scale Enterprise Performances in Zamfara State
2. To explore the effect of electricity power outagessupply on Small Scale Enterprise Performances in Zamfara State
3. To determine the effect of poor technology on Small Scale Enterprise Performances in Zamfara State

V. LITERATURE REVIEW

5.1 Theoretical foundation

The underpinningtheoryof this study is the endogenous growth or the new growth theory. This theory holds that a major component of growth is the attainment of the highest level of technological and innovation that is exogenously transmitted (Sondarjee, 2020). Pansera & Fressoli, (2021) stated that there is link between technological change and increase in knowledge. This is based on

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the believe that economic growth is realized when there is increased positive outcomes from application of knowledge. This theory emphasizes the need for improved investment in creation of knowledge as it will help sustain growth. Infrastructure development that is anchored on the new growth theory ensures that growth is achieved when there are consistent investment in not just the human capital but in the provision of basic knowledge that allows for transfer from one generation to another. In addition, the theory holds that government policies are critical to economic growth and development. It recommends intervention to influence growth in the economy in long run. The model supports government and public policies in human capital formation. The model also support financial institution and encourages the need for private investments in the economy (Park & Kim, 2020).

5.2 Concept of Infrastructure

The concept of infrastructure has evolved to encompass various elements crucial for economic development and societal well-being. It is viewed as a key factor in economic growth, welfare, quality of life, and labor mobility (Baskakova & Malafeev, 2017). Infrastructure is defined as the capital stock providing public goods and services, impacting production activities and household quality of life (Nugraha, Prayitno, Situmorang & Nasution, 2020). The conceptual infrastructure of mathematics, distinct from its foundation, involves the daily tools and notations used by mathematicians (Kaput, Hegedus & Lesh, 2020). Various approaches to understanding infrastructure include institutional, resource, sectorial, systemic, and functional perspectives (Coenen, Visscher & Volker, 2023). The concept has been examined through different lenses, such as overhead costs, institutional theory, economic growth, marketing, distribution, and logistics. Improving infrastructure supply, quality, and affordability is essential for stimulating growth and reducing poverty. Sugiyono (2021) defined infrastructure as those services that, in the absence of primary, secondary, and tertiary production, cannot function and will, when their supply is restricted, have a detrimental effect on the performance of SMEs.

Isa (2020) posited that Infrastructure is the totality of fundamental physical facilities upon which all other ranging from economic, social and political activities significantly depend on.In a study carried out by Udoibeh, & Ofem (2023) opined that infrastructure in general, is a set of facilities through which products and services are produced to the citizens and the infrastructure installation does not produce goods and services directly but provides inputs for all other economic, social and political activities. Kissi, Aigbavboa, & Babon-Ayeng, (2023).opined that it is a universal belief that infrastructural facilities aidthe development of the mind, body and assist productivity in any environmentand at the same time increase SMEs performance effectively and efficiently.

At the microeconomic level, the effect of infrastructure is seen specifically through reduced costs ofproduction, infrastructure thereby affects profitability, level of output, income and employment, particularly for small and medium scale enterprises. It also has an impact on the costs and service quality in international trade (trade logistic), which determines competitiveness in export/import markets. Infrastructure contributes to the diversification of the economy in rural areas, for example, by facilitating the growth of alternative employment and consumption possibilities.Ayensuwa Ekuba (2021)classified some major infrastructural key needed for SME survival, such as transportation, energy power supply and technological infrastructures.

5.3 Transportation infrastructure

Transportation infrastructure includes roads, railways, airports, ports and waterways; these contribute to the gross domestic product (Onokala & Olajide, 2020). It consists of the fixed installations necessary for transportation, in the form of roads, railways, airways, waterways, canals and pipelines, and terminals such as airports, railway stations, bus stations, warehouses, trucking terminals, refueling depots (including fuelling docks and fuel stations) and seaports. Terminals may be used both for interchange of passengers and cargo and for maintenance. It also refers to the major structure of component parts of the transportation system offering the bedrock or the provision of transport services and operations e.g. rail tracks, roads, air and seaports (Oladele, (2024). Transportation infrastructure (roads, rail, airports and seaports) are the arteries for the free flow of people, goods and information; three things necessary in a manufacturing and export economy. If heart is important to the human soul, then the airports and seaports are the heart of international business that sustain the economy of a nation (Fabrykowska, 2023). The transportation function is integral to SMEs' operational efficiency, cost management, market reach, customer satisfaction,

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and overall competitiveness. By optimizing transportation strategies, SMEs can enhance their performance and achieve sustainable growth (Aloui, Hamani, & Delahoche, 2021).

Lin, & Cui, (2021) contend that there is hardly any human society or human settlement system that can function efficiently and effectively without adequate, reliable, safe and affordable transport systems. The most fundamental reason for this being the catalytic effect of transport development on socio-economic growth and development. Transportation is an indispensable infrastructure that facilitates the growth and sustenance of MSMEs all over the world. Economic activities cannot be possible without transportation. Many centuries back, camels and horses were used as means of transportation to facilitate economic activities (Shrestha, & Baral, 2024). Transport infrastructure is a basic infrastructure that propels economic activities; it is needed for the operation of a nation and effective functioning of economy. It facilitates trade by improving and enhancing the movement of goods, people, ideas, technology and services. These assertion's lead to the formulation of the following hypothesis;

$H_0$1; Transport infrastructure does not have statistical significant effect on Small Scale Enterprise Performances in Zamfara State.

5.4 ElectricityPower SupplyInfrastructure

Power supply or energy is a fundamental factor influencing the performance and sustainability of Small and Medium-sized Enterprises (SMEs). Power supply is a critical enabler of SME performance, affecting operational continuity, cost management, productivity, quality, growth, and sustainability (Kaur, Kumar, & Luthra, 2022). Heat production and work capability are the definitions of energy. Generally, heat is obtained through the absorption of solar radiation, combustion of fuel, subterranean rock formation, or other processes. Working capacity, also referred to as potential, can be expressed as the capacity to convert work into motive power, and also referred to as kinetic energy. Distribution, Transmission, and Generation are the three phases of the supply of electricity. The retail aspects of trading electricity to a broad spectrum of users are also covered in the commercial. The generation of electricity is mostly done in large scale from a broad range of natural resources such as hydro, gas and coal at conventional power station or from a renewable energy farm.

Small and medium-sized businesses depend on the provision of electricity for their basic manufacturing needs. According to Doe and Asamoah (2014), one of the key factors influencing the profitability and expansion of SMEs is their access to a sufficient and reasonably priced supply of electricity. On the other hand, Duru and Yusuf (2017) found in their research that modernizing rural SMEs is facilitated by having access to electricity. The writers go on to say that new business development is ensured by a steady supply of electricity. Therefore, uninterrupted power is essential to the operational efficiency and long-term viability of SMEs. According to Doe and Asamoah (2014), small and medium-sized business owners heavily depend on electricity because it is essential to their effective productivity and ability to satisfy customers. According to Doe and Asamoah (2014), a country's ability to grow and develop economically depends on having consistent and simple access to an electricity supply. This suggests that a key predictor of the expansion of SMEs is electricity consumption.

Nuredeen et al. (2018) contend that power outages may have impeded the growth of SMEs and resulted in their premature liquidation. Power disruptions may have a negative effect on SMEs' profitability (Scott et al. 2014). According to Abotsi (2016), most developing countries' production efficiency is reduced by power outages. Power outages have impeded numerous business operations in various parts of Nigeria over time (Adewuyi and Emmanuel, 2018). Undoubtedly, power outages have hindered the growth of small and medium-sized enterprises and turned off numerous foreign and local investors. According to Olatunji (2019), numerous business organizations in Nigeria have migrated abroad as a result of electricity blackouts. This study is guided with this hypothesis:

$H_0$2; Electricity power outages supply does not have significantly effect on Small
Scale Enterprise Performances in Zamfara State

5.5 Technology infrastructure

Technology infrastructure is crucial for SMEs to enhance their operational efficiency, reduce costs, stay competitive, engage customers, innovate, and manage risks (Mishrif & Khan, 2023). A robust technology infrastructure not only supports current business operations but also positions SMEs for future growth and adaptability in a rapidly changing market landscape. The literature uses various definitions to describe technological infrastructure, these include

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technological capability and technological factors. Cirillo, Fanti, Mina, and Ricci (2022) defines technological capability as the process of gaining, integrating, and enhancing knowledge and skills in order to give businesses the ability to innovate sustainably and achieve business objectives. According to Aderemi, Sobanke & Ilori, (2023).), technological capability is the capacity to create and design new goods and procedures as well as to continuously update knowledge about the physical world. This capacity is then translated into designs and instructions that enable the production of desired results. Skare and Soriano (2021) posit that the concept of technological capability could be understood as encompassing both technological knowledge and the ability to develop new products or processes while leveraging manufacturing expertise to achieve higher levels of efficiency. Technological capability makes businesses unique and differentiated (Usai, Fiano, Petruzzelli, Paoloni, Briamonte, and Orlando, 2021). This influences innovation, which can be a source of competitive advantage.

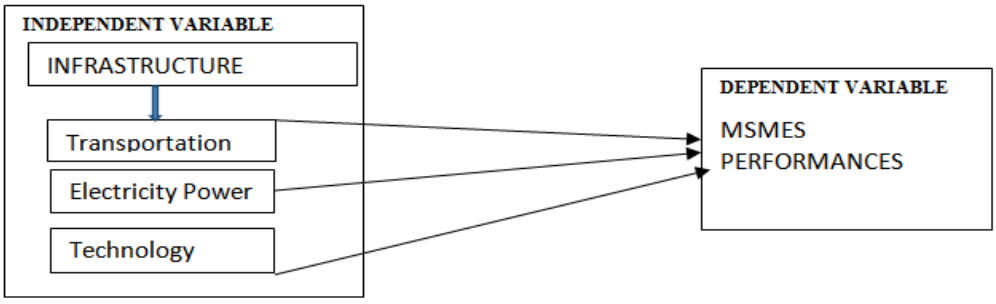
The second technological developments and innovations that can affect an organizations or business's operations and competitiveness is referred to as technological factors. According to Söderholm, (2020) technological environment refers to the impact of new technologies on the economy, society, and business. According to Purchase & Volery (2020), technological factors influence the marketing mix, which encompasses product design, pricing, promotion, and distribution. These factors include developments in digital marketing, e-commerce, and customer relationship management software, along with shifts in consumer behavior prompted by technology. Vrontis, Christofi, Pereira, Tarba, Makrides, & Trichina, (2023), technological factors may involve the implementation of new technologies like automation, artificial intelligence, and robotics. These advancements can enhance efficiency, productivity, and quality in manufacturing. Technological factors refer to the influence of technology on various aspects of business and society, such as strategic management, marketing, operations, and international trade. Understanding these factors enables businesses and organizations to identify opportunities for innovation and competitiveness, as well as potential threats to their operations (Duan, Cao & Edwards, 2020). Based on the various literature, the study is to be guided by this hypothesis;

$H_0$3; Technological infrastructure does not have statististical significant effect on Small Scale Enterprise Performances in Zamfara State

5.6 Small Scale Enterprise Performances

Performance is essentially the capacity and commitment to dedicate oneself to specific goals and objectives, actively and sincerely pursue them, and follow through to their completion. It can be defined as the successful execution of tasks, utilizing one's skills and knowledge.From an organizational perspective, performances are contextually assessed, measured in various ways, and continuously monitored. The performance of SMEs serves as a crucial indicator of the level of industrialization, modernization, urbanization, employment generation, income per capita, equitable income distribution, and the standard of living for citizens (Ugwu, 2021).According to Exposito & Sanchis-Llopis, (2018). SMEs performance can be assessed from a multi-dimensional perspective, which includes financial, operational, and strategic dimensions. The performance of small and medium-sized enterprises (SMEs) is characterized by their capacity to accomplish their stated aims and objectives. Numerous financial and non-financial indicators can be used to quantify this.

Conceptual Model



Source; author survey, 2024

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5.7 Empirical review

The following preceding studies were presented for empirical review.

Diwa (2014) studied the effects of infrastructure deficiency on the performance of manufacturing small and medium-sized enterprises in Nigeria. Low budgetary allocation by the Nigerian government toward investment and rehabilitation of infrastructure in favor of attempts to conform to the tenets of trade liberalization has created a situation where basic infrastructure provision is a huge challenge in the creation of SME's. A longitudinal approach was followed, where a survey was conducted amongst 500 SME's in Nigeria. To complement this, semi-structured interviews were conducted in 2007 and 2011 respectively. The deficiency in infrastructure negatively impacts the profitability and performance of SMEs, due to the high cost incurred by SMEs in the self-provision of infrastructure and distribution of finished goods.

In the study of Akinyele, Akinyele, and Ajagunna (2016) titled infrastructural development as a predictor to SMEs performance in Ogun state was a survey design and engaging 239 small and medium scale enterprises. Using ANOVA for the analysis and it was found that there is a significant positive correlation between infrastructure and SME's performance. The study therefore recommended that government should put in place enough infrastructures for SME's, because SMEs cannot by themselves provide the resource they need. SME's should also do more to attract the government's interest and attention.

Muhammad, Abdulraheem & Yusuf, (2017). Conduct a study on the effect of electricity service efficiency on the performance of manufacturing SMEs in Nigeria. Using survey method and engaging 201 survey questionnaires on participants. Using SPSSand basic regression analysis. The result shows that more than 50 per cent of the difference in the financial and non-financial output of manufacturing SMEs in Nigeria appears to account for consistency. To remove bias linked to time, it was proposed that future studies should collect paneldata/longitudinal data.

Akinlemi (2018) examined the effect of infrastructural facilities on SME's growth in Nigeria. Primary data was employed, Chi-square was employed for hypothesis testing, result obtained showed that many SME's in Nigeria provide basic infrastructure themselves and the cost of providing this basic infrastructure is huge which cost many SME's operators to run out of business. It was recommended that government should provide a basic infrastructural facility to grow SMEs which in turn increases the country's GDP.

Tahir and Inuwa (2019) used primary data analysis to investigate the factors affecting SME's performance in Maiduguri, Borno State, Nigeria. In order to analyze the data obtained, descriptive & inferential statistics, correlation & multiple regression analysis revealed that poverty and insufficient infrastructure facilities are the most critical factors influencing the success of SMEs in Borno-State. It has been proposed that valuable facilities & security should be implemented to enhance the efficiency of SMEs.

The study of Murat & Michael (2020) examined the effect of infrastructure on the performance of Small and Medium Scale Enterprises (SMEs) in the federal capital territory (FCT), Abuja, Nigeria. The study adopted a survey research design. The population is 5690 SMEs in Abuja and the sample size is 374 SMEs in Abuja using sample random sampling method to select owners or owner-managers. The study used a questionnaire that was administered to the respondents. The statistical tool adopted was a regression. The findings revealed that there is a negative and significant effectof infrastructure on the performance of small and medium scale enterprises in Abuja, Nigeria.

VI. METHODOLOGY

The study utilized a quantitative survey design method, employing questionnaires as the primary instrument for data collection. The population comprised 1,202 SMEs registered with the SMEDAN office in Gusau, Zamfara State. Using the Taro Yamane formula, a sample size of 300 was determined. A simple random sampling technique was used to select the sample, resulting in the recovery of 280 questionnaires. Seven local government areas were purposely chosen based on the number of registered SMEs. To ensure an equal chance of selection, the list was arranged in ascending order, and 30 SMEs were selected from each of the seven local government areas. Simple random sampling provided an equal opportunity for every individual in the population to be selected (Acharya et al., 2013).

6.1Methods of Data Analysis

Data was analyzed using a structural equation model. Specifically, Smart-PLS was used to explore and assess the relationships, as well as their strengths, between the dependent and independent variables. The structural equation model included both a structural model and a

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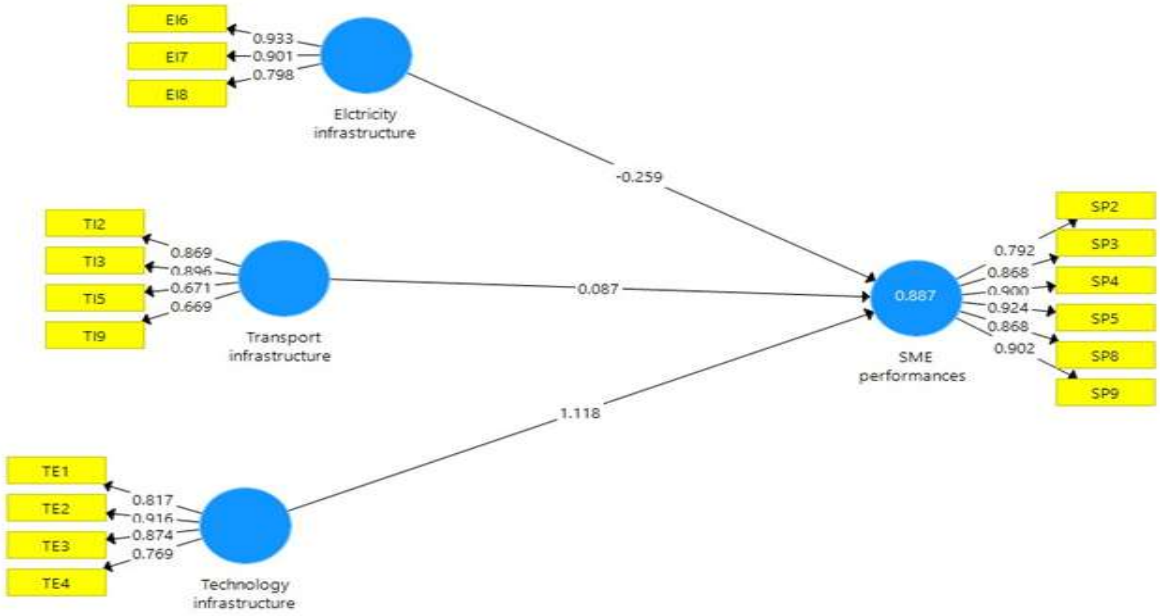
measurement model. The measurement model evaluated reliability and validity of the research instruments, while the structural model assessed the hypothesized relationships.

6.2 Model specification

SP=
(TI+EI+TE……
……..μ

$SP=\beta 0+\beta_1 TI+\beta_2 ET+ \beta_3 TE$…… μ

Where
SP= SMEs performance
TI =Transportation
EI =Electricity
TE =Technology



Measurement Model

Table 1
Construct Validity and Reliability

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Elctricity infrastructure	**0.851**	**0.869**	**0.910**	**0.773**
SME performances	**0.939**	**0.943**	**0.952**	**0.768**
Technology infrastructure	**0.928**	**0.935**	**0.942**	**0.669**
Transport infrastructure	**0.802**	**0.877**	**0.862**	**0.614**

Source; PLS Algorithm output 2024

To measure reliability and validity as expressed in table 1 above, the Cronbach's alpha coefficient, rho_A, Composite Reliability and Average Variance Extracted (AVE) was employed. The Cronbach's alpha coefficient was utilized by the researcher to assess the study, reliability values above 0.7 are generally considered acceptable. The instrument's acceptance and reliability were demonstrated by the reliability coefficients of 0.851, 0.939, 0.928 and 0.802 for SMEs performance, Electricity infrastructure, Technology infrastructure and Transport infrastructure respectively. rho_A similar to Cronbach's Alpha, but considered to be more accurate in certain situations, with a threshold of reliability values above 0.7 are generally considered acceptable. The instrument acceptability demonstrated by reliability coefficients of 0.869, 0.943, 0.935 and 0.877 for

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SMEs performance, Electricity infrastructure, Technology infrastructure and Transport infrastructure respectively. Composite Reliability provide an indication of the overall consistency of the items, with a threshold values above 0.7 are considered desirable. The instrument demonstrated higher level of acceptability with a reliability of 0.952, 0.910, 0.942 and 0.862 for SMEs performance, Electricity infrastructure, Technology infrastructure and Transport infrastructure respectively. Average Variance Extracted (AVE) evaluates the amount of variance captured by a construct in relation to the amount of variance due to measurement error, with a threshold values above 0.5 indicate that a construct explains more than half of the variance of its indicators, suggesting good convergent validity. The instrument demonstrated a very high level of variance in the construct with a value of 0.768, 0.773, 0.669 and 0.802 showing good convergent validity on SMEs performance, Electricity infrastructure, Technology infrastructure and Transport infrastructure respectively.

However, all constructs show good to excellent internal consistency and reliability, as well as acceptable to high convergent validity. This indicates that the measurement instruments used in the study are reliable and valid for assessing the constructs of electricity infrastructure, SME performance, technology infrastructure, and transport infrastructure.

Table 2

R Square

	R Square	R Square Adjusted
SME performances	0.876	0.872

Source; PLS Algorithm output 2024

R Square (R^2) as indicated in table II above, stated that the proportion of variance in the dependent variable that is explained by the independent variables in the model. An R Square (R^2)is measured with a threshold value of 0.17 (weak), 0.33 (moderate) and 0.67(good). The presented result indicated a positive coefficient of independent variables of 0.876, means that 87.6% of the variance in SME performances is explained by the model. This suggests that the independent variables of Electricity infrastructure, Technology infrastructure and Transport infrastructure in the model have appositive and strong coefficient explanatory power regarding the variation in SME performances.

R Square Adjusted (R^2Adjusted) Adjusted is a modified version of R^2 that adjusts for the number of predictors in the model. It accounts for the potential over fitting that can occur with the inclusion of additional variables. The R^2Adjusted value of 0.872 means that, after adjusting for the number of predictors, the model still explains 87.2% of the variance in SME performances. This value is slightly lower than the R^2, indicating a minor adjustment for the complexity of the model.

However, the high values of $R^2$and R^2Adjusted indicate that the values are very high means that the model provides a very good fit to the data and that the independent variables collectively explain a significant portion of the variance in SME performances. The small difference between R^2 (0.876) and R^2Adjusted (0.872) suggests that the model is robust, with little evidence of over fitting despite the number of predictors used. The result demonstrating the strength and adequacy of the model in capturing the key factors influencing SME performance.

Table 3

Path Coefficient

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Elctricity infrastructure -> SME performances	0.259	0.269	0.116	2.231	**0.026**
Technology infrastructure -> SME performances	0.647	0.643	0.151	4.294	**0.000**

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Transport infrastructure -> SME performances	0.051	0.047	0.070	0.733	**0.464**

Source;PLS – Bootstrapping output 2024.

Table 3 presents path coefficient analysis that revealed significant relationships between independent variables of Transportation Electricity Power and Technology and dependent variable of SME performances.

The first hypothesis (H_0I) that transport infrastructure does not have statistical significant effect on Small and Medium Scale Enterprise Performances in Zamfara State, was supported withOriginal Sample (O) of 0.051 suggests a very weak positive relationship between transport infrastructure and SME performances, therefore, the effect size is minimal. T-Statistics of 0.733 is much lower than the critical value (typically 1.96 for a 95% confidence level), indicating that the coefficient is not significantly different from zero.Leading to the acceptance of the null hypothesis ($H_0$1) at a p-value of 0.464 is much greater than the common threshold of 0.05, indicating that the relationship is not statistically significant.

Since the p-value is 0.464 (which is greater than 0.05), the relationship between transport infrastructure and SME performances is not statistically significant. This means that the evidence does not support the idea that changes in transport infrastructure have a meaningful impact on SME performances. Therefore, the result aligns with and supports the null hypothesis that transport infrastructure does not have statistical significant effect on Small and Medium Scale Enterprise performances in Zamfara State.

The second hypothesis (H_0I) that electricity power supply does not have statistical significant effect on Small and medium Scale Enterprise Performances in Zamfara State. the result proved that the path coefficient of 0.259 suggests a positive relationship between electricity infrastructure and SME performances. This means that improvements in electricity infrastructure are associated with better SME performance. T statistic of 2.231 indicates that the coefficient is significantly different from zero. A T-statistic greater than 1.96 typically signifies statistical significance at the 5% level. While the p-value of 0.026 is less than 0.05, indicating that the relationship between electricity infrastructure and SME performances is statistically significant at the 5% level.Therefore, the results do not support the hypothesis that electricity power supply does not have a statistically significant effect on Small and Medium Scale Enterprise (SME) performances in Zamfara State. Instead, the results indicate a significant positive relationship between electricity infrastructure and SME performances.

The positive and statistically significant path coefficient (0.259) and the p-value (0.026) indicate that electricity infrastructure has a significant effect on SME performances. Since the p-value is less than the common threshold of 0.05, we reject the hypothesis that electricity power supply does not have a statistically significant effect on SME performances. Improvements in electricity infrastructure are significantly associated with better SME performances in Zamfara State, which contradicts the hypothesis that electricity power supply does not have a significant effect.

The third hypothesis (H_0III) that technological infrastructure does not have a statistically significant effect on Small and Medium Scale Enterprise (SME) performances in Zamfara State. The output result proved that path coefficient of 0.647 suggests a strong positive relationship between technological infrastructure and Small and Medium Scale Enterprise performances. This means that improvements in technological infrastructure are associated with a significant increase in SME performances. Also the T-statistic of 4.294 is well above the critical value of 1.96, indicating that the coefficient is significantly different from zero. While, the p-value of 0.000 is much less than the common threshold of 0.05, indicating that the relationship between technological infrastructure and Small and Medium Scale Enterprise SME performances is highly statistically significant. The results do not support the hypothesis that technological infrastructure does not have a statistically significant effect on Small and Medium Scale Enterprise (SME) performances in Zamfara State. Instead, the results indicate a strong and statistically significant positive relationship between technology infrastructure and SME performances.

The strong positive path coefficient (0.647) and the very low p-value (0.000) indicate that technological infrastructure has a significant effect on SME performances. Since the p-value is far below 0.05, we reject the null hypothesis that technological infrastructure does not have a statistically significant effect on SME

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performances. Therefore, the result indicate that improvements in technology infrastructure are significantly associated with better SME performances in Zamfara State, which contradicts the hypothesis that technological infrastructure does not have a significant effect.

VII. DISCUSSION OF FINDINGS

In Zamfara State, the study of the relationship between transport infrastructure and small and medium scale enterprises show weak positive relationship between transport infrastructure and SME performances, therefore, the effect size is minimal. T-Statistics of 0.733 is much lower than the critical value (typically 1.96 for a 95% confidence level), indicating that the coefficient is not significantly different from zero. Leading to the acceptance of the null hypothesis (H01) as p-value of 0.464 is much greater than the common threshold of 0.05, indicating that the relationship is not statistically significant. The finding is consistent with previous studies of e.g Shahidi 2021; Chen, Gu, Gao & Lan 2021; Asrat 2022; Yan, Tsinopoulos, & Xiong 2021 which reported that transport infrastructure does not have statistical significant effect on Small and Medium Scale Enterprise performances.

The positive and significant relationship between electricity infrastructure and SME performance in Zamfara State highlights the critical role of reliable power supply in fostering business growth. These findings provide strong support for targeted infrastructure investments as part of broader economic development strategies aimed at supporting SMEs. By improving electricity infrastructure, policymakers can create a more conducive environment for SMEs to thrive, ultimately contributing to sustainable economic growth and development. The positive relationship between electricity infrastructure and SME performance aligns with studies by authors such as Ajibola, Sodeinde, Aderemi & Yusuf (2021), Akyuz, Zackariah & Opusunju (2020) and Bassey & Imoh (2021) who reported positive and significant relationship between electricity infrastructure and SME performance. This indicates that improvements in electricity supply directly enhance the operational efficiency and productivity of SMEs in Zamfara State.

The strong positive relationship between technological infrastructure and SME performance in Zamfara State highlights the critical role of technology in fostering business growth and economic development. These findings provide compelling evidence for the need to invest in and enhance technological infrastructure as part of broader strategies to support SMEs. The positive relationship between technological infrastructure and SME performance aligns with findings of Rehman, Razaq, Farooq, Zohaib, & Nazri, (2020), Cassia, Costa, da Silva & de Oliveira (2020)and Davcik, Cardinali, Sharma& Cedrola, (2021) who reported positive relationship between technological infrastructure and SME performance. By improving technological infrastructure, policymakers can create a more conducive environment for SMEs to thrive, ultimately contributing to sustainable economic growth and development.

VIII. CONCLUSION

The study conducted in Zamfara state offers insightful analysis on the relationship performance of transport infrastructure, electricity infrastructure and technological infrastructure on SME performance in Zamfara State. The results illustrate that transport infrastructure has a minimal impact on SME performance in Zamfara State, while a higher level of significant improvements is recorded in electricity and technological infrastructure. The findings shows how these two variables are crucial for enhancing SME performance in Zamfara State. Resources should be concentrated on sustaining infrastructure such as electricity and technology, which have more direct impacts on SME performance, rather than focusing solely on transport infrastructure. Policymakers are encouraged to prioritize investments in these areas to create a conducive environment for SMEs, thereby fostering economic growth and development. This holistic approach will ensure that SMEs have the necessary infrastructure to thrive and contribute to the region's economic prosperity.

IX. RECOMMENDATIONS

Based on the findings of the study, the following actionable recommendations are proposed to enhance SME performance in Zamfara State:

1. Less concentration on transportation infrastructural development; state should give little attention to transportation, since internal channel of distribution network provide alternative solution transportation, resources should better be directed to a more needed area where the impact will be felt meaningfully
2. Prioritize Electricity Infrastructure Development: state should invest in upgrading the electricity grid to ensure a stable and reliable power supply for SMEs. This could

involve improving transmission lines, reducing outages, and enhancing the capacity of power generation facilities. However, develop alternative idea by encouraging the adoption of renewable energy sources such as solar and wind power to provide a sustainable and reliable electricity supply for SMEs, particularly in remote areas. Encourage collaboration between the government and private sector to invest in infrastructure projects. Public-private partnerships can leverage additional resources and expertise to accelerate infrastructure development.

3. Enhance Technological Infrastructure: stake holders should develop and expand high-speed internet infrastructure across Zamfara State to ensure that SMEs have access to reliable and fast internet connections. This can be achieved through public-private partnerships and incentives for telecom companies. Provide a support for SMEs to adopt digital tools and technologies. This can include offering grants or subsidies for purchasing hardware and software, and training programs to improve digital literacy.

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