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## **AN EVALUATION OF THE ROLE OF INFRASTRUCTURE IN THE PROMOTION OF ENTREPRENEURSHIP FOR SUSTAINABLE DEVELOPMENT IN DELTA STATE, NIGERIA**

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**ABSTRACT:** Entrepreneurship is fundamental for the attainment of economic growth and sustainable development as it plays a significant role in addressing the unemployment challenges in the nation. It provides avenue for creativity, innovation, skill acquisition and self-reliance for the society while at the same time encouraging business activities considered vital for the development of the nation's economy. A conducive environment is important for entrepreneurs to thrive as it has been established that for business set-ups and survival, basic structures and systems must be provided for efficient performance and greater productivity. This study therefore sought to evaluate the role of infrastructure in promoting entrepreneurship for sustainable development in Delta State, Nigeria. Specific areas include the contribution of infrastructure to job and wealth creation, increased human productivity and survival of businesses as well as the enhancement of human entrepreneurship innovation. The descriptive survey research design was adopted for this paper with data generated from both primary and secondary sources while utilizing the chi-square statistical method for testing hypotheses. The study embraced the Social Overhead Capital (SOC) theory and key findings revealed that infrastructure provision enhances job and wealth creation, promotes human productivity and innovation. Deficiencies such as poor transport networks, epileptic power supply and insecurity were identified as key factors that hinder entrepreneurship activities. The paper concluded by recommending adequate budgetary provision, efficient utilization of resources and thorough understudy of the infrastructure development models adopted by developed countries for the promotion of human entrepreneurship in Delta State, Nigeria.

**KEYWORDS:** Entrepreneurship, Infrastructure, Sustainable Development

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### **1. INTRODUCTION**

Infrastructure plays a significant role in the attainment of economic growth and serves the purpose of creating a conducive environment for socio-economic activities to thrive. Businesses perform optimally when basic structures, systems and facilities capable of enhancing performance and improving the quality of life of a people are put in place. Nations of the world and Africa as a continent are currently focusing on the provision of infrastructural facilities such as telecommunications, water and sanitary services, banking etc. (Ajide, 2020). The 2017 McKinsey Global Institute Analysis also reported that Nigeria, Botswana, Angola and other African countries are putting concerted efforts towards the diversification of their economies for the purpose of promoting a creative and high technology driven society. Achieving this goal of broadening the economic and revenue base of a nation no doubt is highly dependent on the level of infrastructural availability which involves the provision of good transport networks (road, rail, sea and air), communication facilities, adequate water supply, health, education, energy and suitable power supply. Provision of infrastructure tends to be capital intensive and expensive hence the government is usually held responsible for majority of its supply which is mainly through revenue generated from taxes. There are however, cases where infrastructure is provided by the private sector and also through public-private partnerships.

Governments adopt policies for improvement of living standards of citizens which includes tackling the scourge of unemployment and providing means of livelihood for the people. In Nigeria, the percentage rate of youths not in employment, education or training as at the time of this research was 13.8% (National Bureau of Statistics, 2024) revealing the need for urgent measures to be introduced most especially at the time when white collar jobs are not sufficient for the teeming youths in the country.

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Entrepreneurship involves taking risks for the purpose of establishing, organizing, financing and managing business ventures with the aim of making profits. This art of entrepreneurship is key in the nation's development process for the purpose of job creation, promotion of research and development, improved standard of living for citizens and enhanced innovation and technological inventions. Entrepreneurial activities are key factors of production that involves the process of setting up a business and translating it from an idea to a realized state as well as serving as a driving force for economic growth and development in countries. Investopedia (2024), highlighted the importance of infrastructure to businesses in the area of creating opportunities, movement of goods and services and providing supply chain connections. Entrepreneurship is perceived as an alternative to poverty and unemployment which contributes significantly towards achieving sustainable development. It is therefore, a panacea to environmental degradation and social inequality and while contributing to economic growth and social equality, these enterprises solve pressing social and environmental problems by adopting business approaches that mitigate the impact of health. Herein lies the critical role of infrastructure in promoting business and entrepreneurial activities as no business venture can thrive in an unconducive environment without basic facilities and structures.

### Statement of the Problem

Physical infrastructure is key for increased productivity and reduction of operating costs of doing business. These basic systems and structures when available save the capital of entrepreneurs making their goods and services more available and translating to enhanced economic activities and growth of nations. Entrepreneurship in the manufacturing, agricultural and industrial sectors leads to rapid industrialization, increased investments, agricultural boom and creation of more employment opportunities. In Nigeria, entrepreneurs unfortunately face a variety of problems ranging from financial limitations, meeting up with government regulations and poor business environment due to inadequate infrastructure supply. Absence of good transport facilities, epileptic power supply, poor functioning communication facilities, inadequate health and educational facilities amongst others are myriad of problems facing entrepreneurial activities in Nigeria. In 2019, the United States of America (USA), was considered as the best country in the world for entrepreneurs with other developed nations such as Switzerland, Canada, Denmark, United Kingdom and Australia following the stride. Nigeria, was ranked 92 (20.08%) out of 137 countries with assessment based on factors such as innovation, competitiveness, infrastructure, labour skills, access to capital and openness to business (Global Entrepreneurship Index, 2019). This low ranking depicts the need to encourage more entrepreneurial activities through provision of facilities and structures to boost economic and business activities for sustainable development. This paper therefore seeks to explore the importance of infrastructure in promoting entrepreneurial activities as well as identify the effect of infrastructural deficiencies on entrepreneurship with special focus on Delta State, Nigeria.

### Objective of the Study

The specific objectives of this study are as stated below:

1. To ascertain the role of infrastructure in job and business creation in Delta State, Nigeria;
2. To examine the contribution of infrastructure to entrepreneurship performance and survival in Delta State, Nigeria;
3. To evaluate the role of infrastructure in promoting entrepreneurship innovation in Delta State, Nigeria.
4. To identify infrastructural deficiencies that militate against entrepreneurship in Delta State, Nigeria.

### Research Questions

In order to assess the role of infrastructure in promoting entrepreneurship in Delta State, Nigeria, the researcher sought answers to the following questions:

1. To what extent has infrastructure enhanced job and business creation in Delta State, Nigeria?
2. What is the contribution of infrastructure to entrepreneurship productivity and survival in Delta State, Nigeria?
3. What is the role of infrastructure in promoting entrepreneurship innovation in Delta State, Nigeria?
4. What are the infrastructural deficiencies that militate against entrepreneurship in Delta State, Nigeria

### Hypotheses

The hypotheses formulated are based on the core of the problem and may be spelt out thus:

1. Ho: Infrastructure provision does not enhance job and business creation in Delta State, Nigeria.  
H1: Infrastructure provision enhances job and business creation in Delta State, Nigeria.
2. Ho: Infrastructure provision does not contribute to entrepreneurship productivity and survival in Delta State, Nigeria.  
H1: Infrastructure provision contributes to entrepreneurship productivity and survival in Delta State, Nigeria.
3. Ho: Infrastructure provision does not promote entrepreneurship innovation in Delta State, Nigeria.  
H1: Infrastructure provision promotes entrepreneurship innovation in Delta State, Nigeria.

## 2. CONCEPTUAL FRAMEWORK

### Infrastructure

The term infrastructure was derived from a French word “infra”- below and “structure” which means building foundation for a nation’s economy. In understanding the basics of infrastructure, Runde (2017) stated that quality infrastructure entails utilization of best technology and conformity with country strategies for economic advancement through employment creation, flow of services and development of local capacity. It is therefore composed of varieties of systems and structures capable of improving the quality of life of a people comprising basic facilities and amenities serving a nation or community. Such facilities and amenities includes good transport network, housing, communication services, energy, electricity supply, health and educational facilities among others.

Large scale infrastructure is usually funded by the government through monies generated from tax and in some cases, private sector organisations invest in infrastructure projects for their expansion. Public-Private-Partnership (PPP) arrangement between private companies and the government can also be used in financing infrastructural projects as this encourages joint funding, sharing risks among partners, provision of job opportunities and increased standard of living.

Investments in infrastructure is a condition for ensuring a conducive environment is created for businesses to grow and attract Foreign Direct Investment (FDI). Brauch (2017), in analyzing the benefits of sustainable infrastructure categorized such benefits as economic benefits (employment creation, optimum value for money, promotion of research development, capital and labour productivity); Social benefits (income generation, building skills, poverty reduction, accessibility to basic amenities, gender inequality, enhanced education and public health) and Environmental benefits (eradication of environmental pollution, efficient utilization of natural resources and protection against natural disasters). Das and Dutta (2023) in their research on the relationship between economic growth and public infrastructure conducted in Assam, arrived at a conclusion that there is a significant relationship between economic growth and infrastructure there by emphasizing on the need for a robust government intervention in infrastructure for higher growth and even development. Infrastructure therefore, are key components in a country’s development process for improving productivity, production efficiency, communication systems and transport services (Arias & Gonzalez, 2015). Every nation striving for improved employment opportunities, citizen empowerment, innovative workforce, high productivity and efficient performance of industries and businesses require a strong and functioning infrastructural base. Entrepreneurs require conducive environments and necessary support for better and optimum performance illuminating the need for adequate provision of systems and structures that are capable of fostering smooth running of economic activities.

### Entrepreneurship

An entrepreneur is an individual who is willing and able to start off a business venture and bear the risks involved for the purpose of making profits. These entrepreneurs are usually associated with innovation and generation of new ideas. Entrepreneurs have as their foremost responsibility to conceive, invent and create methods for the translation of ideas to realities (Diyoke, 2014). The ability to develop, coordinate and manage a business enterprise as well as endure risks and uncertainties in the course of doing business with the aim of profit-making is known as entrepreneurship. It is the practice of establishing new products and services and can also be defined as the process of promoting entrepreneurial activities which is connected to economic growth making its performance measurable (Olowu et al., 2020). Joseph Alois Schumpeter (1883-1950) who is regarded as the father of entrepreneurship, clearly defined the term as “creative destruction” which implies innovation for new better ideas and destruction of old technology and industries. Schumpeter (1947), went further in his discourse to emphasize on the innovative dimension of the concept of entrepreneurship by comprehending it as the design of new economic opportunities and the institution of new ideas in the market. Key features of entrepreneurship include ability to take risks, innovation, possession of good leadership qualities, flexibility and ability to adapt to changes which are inevitable in a changing world.

Entrepreneurship advancement as described by Osemeke (2012), entails the improvement of skills, knowledge, attitudes and behaviors of people towards becoming entrepreneurs. Entrepreneurship has been identified as a major solution to poverty and unemployment which are biggest problems currently encountered in the African continent (Ajide, 2020). Societies where entrepreneurship are encouraged and developed have better opportunities for job creation, enhanced innovation, improved standard of living and formation of a balanced economy.

### Sustainable Development

The Brundtland Report published by the World Commission on Environment and Development (WCED) in 1987 introduced the concept of sustainable development and defined the term as development that meets the needs of the present, without compromising the ability of future generations to meet their own needs. The International Institute for Sustainable Development (IISD) went further to state the objective of sustainable development by stating that sustainable development

meets the needs of the present without compromising the ability of future generations to meet their own needs thereby ensuring an improved quality of life for the people now and also for generations in future. Sustainable development targets balancing the needs of the economy towards attainment of economic development, environmental protection and social well-being. It provides access to employment opportunities, quality health and educational facilities and proper utilization of natural resources that avoids pollution and environmental degradation. Apostu and Gigauri (2023) asserts that the attainment of human well-being without having a damaged environment is the objective of sustainable development. Consequently, sustainability in entrepreneurship refers to executing entrepreneurial activities without damaging the environment.

Sustainable development is categorized into three dimensions which are the environment, economy and the society. Environmental stability is concerned with the safeguard and management of natural resources responsible for dropping pollution and waste, preserving biodiversity and addressing the problems of climate change. Economic sustainability ensures economic growth and development is all inclusive, the absence of income inequality and maintenance of economic stability all required for progress and advancement of societies. Social sustainability is for the purpose of promoting social equity, just and an egalitarian society with members of the community having access to basic amenities such as food, water, shelter, health and educational facilities amongst others.

### **Infrastructure, Entrepreneurship and Sustainable Development**

Infrastructure is identified as a vital support for the entire dynamics of the entire entrepreneurial ecosystem as it strengthens economic activities translating to economic growth (Azmi & Azmi, 2023). Ubom and Ubom (2014) also asserted that the stock, quality and spread of infrastructure such as electricity, transport, information and communication technology equipment, to a large extent influences entrepreneurial activity. Adequate supply of basic infrastructure provides the needed support and conducive environment for entrepreneurs to start, operate and survive in their respective business ventures. Abdullaevich and Abdulazizovich (2022) in emphasizing the importance of the business environment in promoting entrepreneurship, highlighted that the key condition for the development of small businesses and private undertakings in the country is the availability of infrastructure which in turn expands the business environment. The authors concluded that the greater the number of infrastructure entities, the better the business environment in which entrepreneurship develops optimally. The World Bank Report (1994) in corroborating the importance of infrastructure, revealed that a 1% increase in the stock of infrastructure is associated with a 1% increase in the GDP across all countries. Advanced countries such as Korea and Japan possess highly developed economic infrastructures which has followed a rational, well-coordinated and harmonized path leading to an increase in growth and development (Familoni, 1990). Researchers, policy makers and economists while ranking countries in terms of competitiveness, treat "infrastructure" as one of the main pillars which boosts growth by reducing bottlenecks, connecting time gaps and making opportunities that stimulate entrepreneurial activities (Anyieni, 2013). Key role of infrastructure in promoting entrepreneurship for sustainable development are presented thus:

#### **Physical Infrastructure:**

Transportation facilities such as roads, railways, ports and airports are essential for the movement of goods and services and provides opportunity for entrepreneurs to partner with suppliers of raw materials, target market and consumers. Suitable transport networks reduce logistical costs and enhances market access for entrepreneurs.

Power and electricity is vital for the day to day operations of business ventures as epileptic power supply disrupts production of goods and services leading to low performance. The International Finance Corporation (IFC) asserts that when there is accessibility to reliable and affordable energy, entrepreneurs are able to perform optimally leading to sustainable economic and growth and development.

Sanitation and water amenities foster a healthy workforce which is vital for actualizing business objectives and harnessing all other resources involved in production. Familoni (1999) in analyzing the Human Development Index (HDI) ratio of Nigeria according to the 1996 World Development Report, established that out of the 174 member countries, Nigeria ranked 137 on the HDI scale with an HDI rate of 0.4. This depicts that the life expectancy of the people is low with only one-third of the population enjoying health services, two-third not having access to safe water and sanitation, while 47.5% of the population being educational illiterates. This greatly affects entrepreneurial activities due to poor health of the work force which transcends to low productivity and slow pace of national development.

Telecommunication and digital infrastructure enable entrepreneurs connect with their business partners, customers and suppliers in a modern economy which is now highly digitalized. Internet facilities and broadband promotes modern entrepreneurship as it encourages e-commerce, e-marketing, international communications, and wider coverage of activities. This no doubt plays a predominant role in business innovation and expansion.

### **Financial Infrastructure:**

Financial infrastructure includes provision of financial structures that facilitate access to capital, credit facilities and financial services. Funding is crucial for the promotion of entrepreneurial activities and availability of finance through loans and credit facilities is necessary to facilitate the performance and actualization of business objectives through investments, savings and capital generation. The Global Entrepreneurship Monitor (GEM, 2019), reported that one of the major financial challenges of entrepreneurship in developing countries is poor access to funds which retards sustainable development because of reduced entrepreneurial activities and high unemployment rate. In addition to funding, safe and efficient payment systems translate to ease of doing business and smooth business transactions amongst stakeholders involved in entrepreneurship.

### **Social Infrastructure:**

Social infrastructure includes health and educational facilities that lead to a well-trained and healthy population which is a necessary condition for achieving enhanced labour productivity and efficiency. A healthy population is more productive as health is a key economic benefit to societies and this was buttressed by the United Nations Development Programme (UNDP, 2019) which asserted that social infrastructure is a sine-qua-non for economic advancement and sustainable development. The government is not necessarily mandated to operate or manage social infrastructure but can provide adequate regulations and guidelines to monitor their operations.

Aigbokan, (1999), therefore summarizes the benefits of public infrastructure in the following ways

- (a) Provision of services that are part of the consumption bundle of residents;
- (b) Large-scale expenditures for public works lead to increase comprehensive demands and provide short-run stimulus to the economy
- (c) It serves as input into private sector production thus boosting output and productivity.

Good infrastructure reduces cost of doing business, creates a conducive environment for business activities, enhances innovation and fosters sustainable economic growth and development. In corroboration, Apostu and Gigauri (2023) affirms that entrepreneurship is crucial for sustainable development as it provides youths with requisite entrepreneurial skills required for promoting self-reliance so as to combat the current unemployment problems facing countries. Governments therefore, are expected to promote entrepreneurial development by providing good and conducive economic environment.

### **Theoretical Framework**

In an attempt to explain the role of infrastructure in promoting entrepreneurship for sustainable development, this study adopted the Social Overhead Capital (SOC) Theory. The SOC refers to basic infrastructure and services required for the proper functioning of primary, secondary and tertiary productive activities. These services include expenditure on roads and transport networks, communication, irrigation facilities, power and energy etc. and this theory emphasizes on the “basic” nature of these facilities which must be present for industrial activities to take place. This theory suggests that Social Overhead Capital which are infrastructures, provide essential foundation for economic activities through cost reduction and effective resource allocation. Cootner (1963), noted three key essential elements in his description of the SOC theory which he perceived as firstly a group of industry involved in social produce services which are “essential to, and pre-requisite for, initiation of an industrial expansion. The services provided are strictly immovable and the ability for their production must be their manufacture within the country to be developed. Lastly, the social overhead capital are investments characterized by large economies of scale, extended gestation phases and remarkable durability. Social Overhead capital are usually provided by the government or bodies regulated by the government due to the huge capital involvement (Kuriharak, 1970). In summary, for an asset to be classified as a social overhead capital, the service must facilitate a wide range of economic activities, must be subject to public control and such services cannot be imported.

In relating this theory to our study, provision of these investments (SOC) leads to reduced cost of doing business thereby creating opportunities for new entrepreneurs and expansion of existing businesses. When basic infrastructure such as electricity, communication, irrigation and transport facilities are provided, it leads to growth of small-scale industries, stimulates agricultural activities and induces private investment. Entrepreneurship activities are promoted through wider customer base, ability of entrepreneurs to access their markets and resources for production which brings about sustainable economic growth in the country.

### **3. METHODOLOGY**

This study adopted the descriptive typology of survey design which was carried out by determining samples from the population. Data was sourced from both primary and secondary sources with questionnaires distributed for data collection and interviews conducted with respondents. Secondary data were obtained from journals, library sources, newspapers and internet materials. Delta State is located in the South-South part of Nigeria and is known for its substantial oil and natural gas reserves.

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The area of study covered three major towns selected from the three senatorial districts of Delta State. Asaba, the state capital was selected from the Delta North senatorial district, Ughelli having the largest population in the Delta Central senatorial district was selected and Warri, the commercial nerve center of the state was selected from the Delta South senatorial district. The study population according to the 2006 population census figure was 150,032, 320,687 and 311,970 for Asaba, Ughelli and Warri respectively. Using the Taro yamani (1964) formular, a sample size of 300 respondents was drawn and a total of 100 samples was allocated to each senatorial zone consisting of small business entrepreneurs. However, two hundred and seventy-five thousand (275) questionnaires were properly filled and returned. The responses to the research questions were analyzed and interpreted using a simple percentage while hypotheses were tested using the chi-square method.

### **Data Presentation and Analysis**

**Question 1: Availability of Infrastructure would enhance job and business creation in Delta State, Nigeria?**

**Table 1: Infrastructure and Job Creation**

RESPONSE	RESPONDENTS			TOTAL
	Asaba	Ughelli	Warri	
Yes	85	92	80	257 (93%)
No	5	3	10	18 (7%)
Total	90	95	90	275

Source: Field Survey (2025)

Table 1 shows that 257 (93%) of respondents agree that improved infrastructure would enhance job and business creation in their localities while 18 (7%) were of the opinion that infrastructure would not improve job creation. Most respondents identified the crucial role of good transport, communication and electricity facilities in the establishment of new jobs and businesses as it will reduce the cost of doing businesses which is extremely high in the country presently. This is in agreement with the assertion of the International Labour Organization (2011), which states that infrastructure investments are significant job creators, especially in developing countries.

**Question 2: Infrastructure provision contributes to entrepreneurship productivity and survival in Delta State, Nigeria?**

**Table 2: Infrastructure and Entrepreneurship productivity and survival**

RESPONSE	RESPONDENTS			TOTAL
	Asaba	Ughelli	Warri	
Yes	83	87	75	245 (89%)
No	7	8	15	30 (11%)
Total	90	95	90	275

Source: Field Survey (2025)

Table 1 shows that 257(93%) of respondents agree that availability of infrastructure contributes to the productivity and survival of business undertakings managed by entrepreneurs while 18 (7%) were of the opinion that infrastructure does not contribute to entrepreneur productivity and survival. Infrastructure enhances business performance, fosters wider markets and consumers for products, enhances e-commerce and reduces overhead costs incurred by entrepreneurs. This no doubt improves performance and output which is essential for survival of businesses in Nigeria. The World Bank (2018) states that a 10% increase in infrastructure can lead to a 1% increase in Gross Domestic Product (GDP). This is corroborated by the claims of the American Society of Civil Engineers (ASCE, 2021) which estimates that for every dollar invested in infrastructure, the economy gains 3.70 dollars which is an evidence of increased productivity.

**Question 3: Infrastructure plays a key role in the promotion of entrepreneurial innovation in Delta State, Nigeria?**

**Table 3: Infrastructure and Entrepreneurship Innovation**

RESPONSE	RESPONDENTS			TOTAL
	Asaba	Ughelli	Warri	
Yes	86	83	80	249 (91%)
No	4	12	10	26 (9%)
Total	90	95	90	275

Source: Field Survey (2025)

Table 5 reveals that 249 (91%) of respondents agree that improved infrastructure would promote entrepreneurial innovation while 26 (9%) stated that infrastructure would not enhance innovation. Availability of modern infrastructure enhances mobility and communication which makes transfer of knowledge and exchange of technology more efficient leading to growth of new industries. Educational infrastructure boosts information and idea generation for better production processes.

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**Question 4: What are the infrastructural deficiencies affecting entrepreneurship in Delta State, Nigeria?**

**Table 4: Infrastructural Deficiencies**

Options	Number of Respondents N = 275	Percentage Response	Rating
Poor Road Network	260	95%	2nd
Inadequate communication facilities	140	51%	6th
Inadequate environmental protection and sanitation facilities	200	73%	4th
Epileptic electricity supply	265	96%	1 <sup>st</sup>
Inefficient security apparatus	215	78%	3 <sup>rd</sup>
Inadequate financial support services	198	72%	5th

Field Survey (2025)

Table7 above reveals that epileptic power supply is a major infrastructural challenge facing entrepreneurship in Delta State as 96% of the respondents attested to this thereby placing the option 1<sup>st</sup> among others. Poor road network especially in the rural communities ranked 2<sup>nd</sup> in the ranking as 95% of the respondents specified this. Followed in the infrastructural deficiencies affecting entrepreneurship in Nigeria is the issue of poor security particularly the incessant kidnappings witnessed in the communities which has affected agricultural entrepreneurs and business activities as indicated by 78% of the respondents which is 3<sup>rd</sup> in the rank. The 4<sup>th</sup> main infrastructural deficiency in Delta State is inadequate environmental protection and poor sanitary conditions especially in the Niger Delta region characterized by oil spillage and flooding as depicted by 73% of the respondents. The 5<sup>th</sup> major deficiency in infrastructure as confirmed by 72% of respondents, is inadequate financial support services which has hindered the setting up of new businesses and the survival of existing ones. Finally, 51% of the respondents identified inadequate communication facilities as the 6<sup>th</sup> major infrastructural deficit to entrepreneurship in Nigeria.

## Test of Hypothesis

Decision Rule: Reject null hypothesis if the calculated value exceeds the critical value, if not, null hypothesis is accepted. The null hypothesis will be rejected or accepted at 0.05 level of significance and degree of freedom (r-1) (c-1) where r = Number of rows and c = Number of columns.

## Hypothesis 1:

Ho: Infrastructure provision does not enhance job and business creation in Delta State, Nigeria

H1: Infrastructure provision enhances job and business creation in Delta State, Nigeria

**Table 5: Computation of Chi-Square (X<sup>2</sup>)**

Cell	F <sub>o</sub>	F <sub>e</sub>	F <sub>o</sub> -F <sub>e</sub>	(F <sub>o</sub> -F <sub>e</sub> ) <sup>2</sup>	(F <sub>o</sub> -F <sub>e</sub> ) <sup>2</sup> /F <sub>e</sub>
A	85	84.1	0.9	0.81	0.01
B	92	88.78	3.22	10.37	0.12
C	80	84.11	-4.11	16.90	0.20
D	5	5.89	0.89	0.80	0.14
E	3	6.22	-3.22	10.40	1.67
F	10	5.89	4.11	16.90	2.87
				X <sup>2</sup>	5.01

Source: Field Survey (2025)

Decision: The calculated value (5.01) is greater than the critical value (3.841), consequently, we reject the null hypothesis and therefore accept the alternate hypothesis that infrastructure provision enhances job and business creation in Delta State, Nigeria.

## Hypothesis 2:

Ho: Infrastructure provision does not contribute to entrepreneurship productivity and survival in Delta State, Nigeria.

H1: Infrastructure provision contributes to entrepreneurship productivity and survival in Delta State, Nigeria.

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**Table 6: Computation of Chi-Square ( $X^2$ )**

Cell	F <sub>o</sub>	F <sub>e</sub>	F <sub>o</sub> -F <sub>e</sub>	(F <sub>o</sub> -F <sub>e</sub> ) <sup>2</sup>	(F <sub>o</sub> -F <sub>e</sub> ) <sup>2</sup> /F <sub>e</sub>
A	83	80.18	2.82	7.95	0.10
B	87	84.64	2.36	5.57	0.10
C	75	80.18	-5.18	26.83	0.33
D	7	9.82	-2.82	7.95	0.81
E	8	10.40	-2.4	5.76	0.55
F	15	9.82	5.18	26.83	2.73
				<b>X<sup>2</sup></b>	<b>4.62</b>

Source: Field Survey (2025)

**Decision:** The calculated value (4.62) is greater than the critical value (3.841), consequently, we reject the null hypothesis and therefore accept the alternate hypothesis that infrastructure provision contributes to entrepreneurship productivity and survival in Delta State, Nigeria.

### Hypothesis 3:

H<sub>0</sub>: Infrastructure provision does not promote entrepreneurship innovation in Delta State, Nigeria.

H<sub>1</sub>: Infrastructure provision promotes entrepreneurship innovation in Delta State, Nigeria.

**Table 7: Computation of Chi-Square ( $X^2$ )**

Cell	F <sub>o</sub>	F <sub>e</sub>	F <sub>o</sub> -F <sub>e</sub>	(F <sub>o</sub> -F <sub>e</sub> ) <sup>2</sup>	(F <sub>o</sub> -F <sub>e</sub> ) <sup>2</sup> /F <sub>e</sub>
A	86	81.50	4.5	20.25	0.25
B	83	86.02	-3.02	9.12	0.11
C	80	81.50	-1.50	2.25	0.03
D	4	8.51	-4.51	20.34	2.40
E	12	9.00	3.00	9.00	1.00
F	10	8.51	1.49	2.22	0.3
				<b>X<sup>2</sup></b>	<b>4.09</b>

Source: Field Survey (2025)

**Decision:** The calculated value (4.09) is greater than the critical value (3.841), consequently, we reject the null hypothesis and therefore accept the alternate hypothesis that infrastructure provision promotes entrepreneurship innovation in Delta State, Nigeria.

### Discussion of Results

The result of the analysis above reveals the crucial role of infrastructure in promoting entrepreneurship activities for sustainable development in Delta State, Nigeria. Findings from the test of the first hypothesis shows that infrastructure provision enhances job and wealth creation. This is emphasized by the findings of Lagorda and Sotelsek (2019), where infrastructural development was identified to be an avenue for increased employment opportunities and productivity. Hassen (2000), supported this assertion when he noted the importance of infrastructure in job creation and having the potential for creating sustainable assets and markets. A conducive environment no doubt attracts both domestic and foreign investments as entrepreneurs would rather invest in areas with functional infrastructure.

The findings from the test of the second hypothesis revealed that infrastructure provision contributes to entrepreneurial productivity and survival. Adequate infrastructure gives ability to entrepreneurs to reach broader markets, have access to raw materials and facilitate e-business. Adequate social facilities improve the quality of life of the people through the availability of recreation, housing, health and educational facilities resulting to a competent work force. Basic infrastructure is essential for increased efficiency and continuous business operations. Ajide (2020), emphasized on the importance of closing infrastructural gaps for the purpose of fostering entrepreneurship which he considered key for boosting productivity to achieve inclusive development especially in less developed countries.

The test of the third hypothesis depicts that infrastructure promotes entrepreneurship innovation. Internet and telecommunication networks provide access to information and improved transport facilities fosters collaboration and exchange of ideas among the business community at global levels. These are vital conditions for improving the creativity and innovative abilities of entrepreneurs which is key for the development of new business ideas. Audretsch and Heger (2015), noted the importance of infrastructure in facilitating innovation through the mobility of knowledge which aids the connectivity of people. The objective of this is that increased connectivity spurs knowledge diffusions through more interactions.

Infrastructural challenges faced by entrepreneurs are enormous ranging from poor road network, epileptic power supply, insecurity and poor sanitary conditions. The poor condition of roads and epileptic power supply in Warri, Ughelli and Asaba have resulted in high crime rate and reduced business activities. Poor electricity supply has reduced economic activities and stalled business operations making survival of entrepreneurship difficult. It was also revealed that the coastal areas suffered major setbacks in the area of infrastructural decay due to lack of portable water, access roads, poor housing and sanitation facilities (Dienne, 2021).

### **CONCLUSION**

This study has examined the role of infrastructure in promoting entrepreneurship towards the attainment of sustainable development. Provision of basic systems, structures and amenities is key towards addressing the unemployment challenges of the country through job and wealth creation promotion. Economic activities would experience a major boost and businesses would thrive in areas where there is a conducive environment. The ability for creativity and generation of ideas for enhanced performance and technological innovations can be achieved through provision of basic communication, financial and social services.

### **Recommendation**

Arising from the findings above, the following recommendations are hereby proffered:

- (a) The government should ensure adequate budgetary provisions and efficient utilization of resources towards infrastructural provision in all areas including rural and coastal areas of Delta State so as to promote rural entrepreneurship;
- (b) Attempts should be made by the Nigerian government to carry out a thorough understudy of the infrastructure development models adopted by developed countries as a means to finding solution to the infrastructural dearth in the Nigerian economy.
- (c) There should be proper planning and projections in preparation for the future considering the rising population to avoid overstretching of existing infrastructure and to meet up with the ever-increasing demands for basic infrastructure and more amenities.

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