



# Africa’s Infrastructure and Economic Competitiveness: the Case for Nigeria

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ABSTRACT	The aim of this paper is to conduct an empirical study on how infrastructure through its numerous dimensions affects Nigeria’s economic growth and competitiveness. The study is modeled on Fred Riggs (1964:3) Participatory Approach to Development. Thus, the study sought among others to examine the challenges Nigeria is facing in addressing her huge infrastructural gap for improved economic growth and competitiveness, and also to find out the relationship between infrastructural development and economic competitiveness in Nigeria. Questionnaire instrument was used to collect data from the respondents in the various ministries, relevant public and manufacturers in the six geo-political zones of Nigeria. The instrument was administered to 397 respondents that formed the sample size. The data collected were analyzed using Z-test at 0.05 level of significance. Two hypotheses guided the study. The results showed that the level of infrastructural development in Nigeria affects her economic competitiveness level with the outside world, and that corruption in Nigeria’s political and administrative institutions constitutes serious challenge to addressing the nation’s infrastructural gap. Thus the study recommends among others that institutional environment should be enhanced to support a competitive economy through improving concerns about property rights, ethics, corruption, undue influence and government inefficiencies.
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KEYWORDS	Infrastructure, Economy, Competitiveness, Corruption
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INTRODUCTION

Infrastructure is the basic physical and organizational structures needed for the operation of a society, for example; transport system, power, energy, telecommunication (ICT), etc. According to Sullivan and Sherif (2003:43), infrastructure is necessary for an economy to function because it provides a framework supporting an entire structure of development.

Africa is a continent blessed with vast human and material resources. It comprised of 53 nations. A binding constraint on African development is the continent’s crippling infrastructure deficit. For effective growth and development in Africa, infrastructure is a crucial stimulant. It is a parameter for judging a country, region or states development status. The significant deficit in Africa’s infrastructure is resulting in increased production and transaction costs, reduced competitiveness of business, negative impact on foreign direct investment flow to the continent, therefore affecting the rate of economic and social development on the continent.

Nigeria as a country in Africa share in this crippling infrastructure deficit. Nigeria’s infrastructure services are twice as expensive as elsewhere in the sub-Saharan Africa, reflecting both diseconomies of scale of production and high profit margin caused by lack of competition. Investment and trade cannot occur without adequate water and power resources, good transport system (road, water ways, air transport, rail system) Nigeria’s market have continued to function as small fragmented and uncoordinated one. Nigeria’s economic size is an indication that government has difficulty in funding the infrastructure (Global Competitiveness Report 2008:2). Infrastructural development plays a crucial role in our nation building. It therefore follows that without sound infrastructural development there cannot be balanced national economic development in the areas of industrialization, and easy evacuation of goods and services. A well maintained and functioning infrastructure is essential to Nigeria’s economic per-

formance. A comprehensive and sustained economic growth requires infrastructural development. This could be the reason why Oyedele (2009:3), stated that the linkages between infrastructure and economic growth are multiple and complex.

The state of Nigeria’s infrastructure today is very appalling, and did not in anyway point towards national development.

The challenges posed by poor infrastructural development are numerous and beg for attention to enhance competitiveness with other countries of the world.

1. Statement of the Problem

The import of addressing infrastructural development challenges in Nigeria cannot be over emphasized. The nation is sadly at the other side of economic development because of the sorry state of her infrastructure. Income per head is dismally low, economic and manufacturing base are weak all due to inadequate and dilapidated infrastructure which include; poor road network, near non existence of good rail system, poor power supply, poor server systems for telecommunication (ICT) etc.

Because of the aforementioned problems, most small and medium size enterprises (SMES) have closed down and gone out of business leading to unemployment, militancy, religious crises etc. those of them that are lucky to still be in business produce low quality goods and services, pay low wages, short their eyes to innovation which culminated to unstable economy and lack of competitiveness.

It is against this back drop that the study sought to find out how infrastructure development through its numerous dimensions affects the competitiveness of Nigeria’s economies.

2. Objectives of the study;

- a. To analyze the challenges Nigeria is facing in addressing

- her huge infrastructural gap.
- Establish relationship between infrastructural development and competitiveness in Nigeria's economy.
  - Propose recommendations for infrastructural development and measures that would support increased productivity and competitiveness.

### Research Questions;

The following questions guided the study.

- what are the challenges that face Nigeria in addressing her infrastructural gap?
- How does infrastructural development affect Nigeria's economic competitiveness?

### Hypotheses;

- Infrastructural development has no significant relationship with the level of Nigeria's economic competitiveness.
- Corruption is not a major challenge in addressing Nigeria's infrastructural gap?

### Theoretical Framework

The theoretical framework on which this study hinges is the participatory approach to development propounded by Fred Riggs (1964:127). This approach entails adding useful elements by stressing dialogue and negotiation between "developers" and the "developed; as well as the fact that through participation people become actors in their own development rather than just passive beneficiaries. Participatory approach according to Guimares (2009:7), is a process of equitable and active involvement of all stakeholders in the formulation of development policies and strategies, and in the analysis, planning implementation, monitoring and evaluation of development activities. This can be interpreted as;

- Allowing the people to define their own wants rather than what is stated by experts and professional bodies.
- Comprehensive consultation with the critical stakeholders in the process of infrastructural development initiation, execution and evaluation.
- Liberty of the people to express themselves through personal and group participation in planning and implementing infrastructural development projects.

### 3.1 Methodology

This study is limited to a sample of manufacturers, ministries and the public in the six geo-political zones of Nigeria. The research design used for this study was the descriptive survey which involves questionnaire administration. Data for the study was sourced from the selected manufacturers, ministries and the public. Also some information and data are derived from official country data bases, Banks infrastructure data bases, etc. Questionnaires were administered to 397 (three hundred and ninety seven) respondents using a simple random sampling technique. Data obtained were analyzed using a summation technique and a Z-test at 0.05 level of significance.

### 3.2 Data Analysis

The first objective was to examine the challenges Nigeria is facing in addressing her huge infrastructural gap. The study addressed this through questionnaire items that bothered on the link between infrastructural gap and economic competitiveness.

Hypothesis 1: Infrastructural development has no significant relationship with the level of Nigeria's economic competitiveness.

**Table 1: Infrastructural development and Economic Competitiveness**

Options	X	f	fx	x-x	(x-x) <sup>2</sup>	f(x-x) <sup>2</sup>
Strongly Agree	5	182	910	1.12	1.2544	228.3008
Agree	4	107	428	0.12	0.0144	1.5408
Undecided	3	23	69	-0.88	0.7744	17.8112
Disagree	2	48	94	-1.88	3.5344	166.1168
Strongly disagree	1	38	38	-2.88	8.2944	315.1872
	15	397	1539	-4.4	13.872	728.9568

Source: field survey 2012

$$\text{Mean } (\bar{x}) = \frac{\sum fx}{\sum f} = \frac{1539}{397} = 3.88$$

$$\begin{aligned} \text{Standard deviation} &= \frac{\sum f(x-x)^2}{\sum f} \\ &= \frac{728.9568}{397} = 1.8362 \\ \therefore \sqrt{1.8362} \\ &= 1.3551 \end{aligned}$$

$$\text{Therefore App} = 1.36$$

$$\text{Population mean I u I} = \bar{x} \pm 1.96\sqrt{n}$$

Standard error

$$= \frac{6}{\sqrt{n}} = \frac{1.36}{\sqrt{397}} = \frac{1.36}{19.9} = 0.07$$

$$\text{Population mean} = (\bar{u}) = \bar{x} \pm 1.96 \sqrt{n}$$

$$3.88 + 1.96 \times 0.07 = 4.017 \approx 4.02$$

$$3.88 - 1.96 \times 0.07 = 3.742 \approx 3.74$$

Referring to table 1 and using the  $\approx$  test

to test the hypothesis

$$\approx \bar{x} - \bar{u}_1 / \frac{6}{\sqrt{n}} = \frac{3.88 - 4.02}{0.07} = -2.00 \text{ OR}$$

$$\frac{3.88 - 3.74}{0.07} = 2.00$$

is rejected and  $H_1$  is accepted because the calculated  $\approx$  (2.00) is greater than the table value  $\approx$  (1.96). This shows that infrastructural development has significant relationship with the level of Nigeria's economic competitiveness.

**Table II: corruption not a major challenge to addressing infrastructural gap**

Options	X	f	fx	x-x	(x-x) <sup>2</sup>	f(x-x) <sup>2</sup>
Strongly Agree	5	156	780	1.2	1.44	224.64
Agree	4	131	520	0.2	0.04	5.24
Undecided	3	20	60	-0.8	0.64	12.8
Disagree	2	54	108	-1.8	3.24	174.96
Strongly disagree	1	36	36	-2.8	7.84	282.24
		397	1508			699.88

Source: field survey 2012

$$\text{Mean } (\bar{x}) = \frac{\sum fx}{\sum f} = \frac{1508}{397}$$

$$\text{Mean} = 3.80$$

$$\begin{aligned} \text{Standard deviation} &= \frac{\sum f(x-x)^2}{\sum f} = \frac{699.88}{397} \\ &= 1.3277 \approx 1.33 \end{aligned}$$

$$\text{Population mean I u I} = \bar{x} \pm 1.96\sqrt{n}$$

Standard error

$$= \frac{6}{\sqrt{n}} = \frac{1.33}{\sqrt{397}} = \frac{1.33}{19.9} = 0.07$$

$$\text{Population mean} = (\bar{u}) = \bar{x} \pm 1.96 \sqrt{n}$$

$$3.80 + 1.96 \times 0.07 = 5.83$$

$$3.88 - 1.96 \times 0.07 = 3.66$$

## Referring to table 2 using the $\approx$ test

### to test the hypothesis

$$3.80 - 583 = 0.07 = -29$$

$$3.80 - 3.66 = 0.07 = 2$$

$H_0$  is rejected and  $H_A$  is accepted because the calculated  $\approx$  (2.00) is greater than the table value  $\approx$  (1.96). This reveals that corruption is a major challenge in addressing Nigeria's infrastructural gap.

## Findings and Discussions

The findings of the test of the first hypothesis shows that there is link between infrastructural gap and the level of Nigeria's economic competitiveness. The finding also shows that the poor state of infrastructure in Nigeria greatly affects its economic growth and ability to compete effectively with other economies. This falls in line with the position of world Economic forum (WEF), that Nigeria dropped five places in ranking in a survey on global competitiveness, placed 13<sup>th</sup> position in Africa out of the 31 nations surveyed on the continent. Inadequate infrastructural development and the decay of the already existing ones have affected productivity, and have raised production and transaction costs. As a result Nigeria is among the least competitive economies in Africa in particular and the world in general. Manufacturers, investors, and industrialists have highlighted the poor state of nations infrastructure as a recurring concern.

The second hypothesis revealed that corruption including other factors constitute major challenges in addressing Nigeria's infrastructural gap. The implication is that for Nigeria to fully develop her infrastructure the problems of government instability, corruption, uneducated workforce, poor financing, inflation, poor work ethics, restrictive labour regulations, crime and theft must be adequately addressed. This finding agrees with Keeper (2012:2) who opined that corruption has caused Nigeria severe losses economically, politically and socially and that this fact is responsible for decayed infrastructure, downturn in economy, fragile political institution and steady decline in all indicators of social and economic development.

Scholars could not agree on a single definition of infrastructure due to its complex nature. World Bank defines infrastructure as social overhead capital which includes services from public activities such as power, telecommunication, water supply, sanitation, sewage, piped gas and transport facilities.

American Heritage Dictionary (2009), sees infrastructure as the basic facilities, services and installations needed for the functioning of a community or society such as transportation, and communication systems, water and power lines, public institutions including schools, post offices and prisons.

According to the Online Etymology Dictionary (2012), infrastructure refers to the installations that form the basics for any operation or system.

Wikipedia (2011), says that infrastructure is basic physical and organizational structures needed for the operation of a society or enterprise, or the services and facilities necessary for an economy to function.

On the other hand, Sherif et al (2003:5), define infrastructure as the set of interconnected structural elements that provide framework supporting an entire structure of development. It is an important term for judging a country's or region's development.

Research has shown that infrastructural development is at its ebb in Nigeria due to ineffective and inefficient utilization of project funds and inadequate planning effort. Some studies (Agbola, 1988:17, Hanlekoko, 2001, Nubi, 2000, Oyedele

2006:5, PIDA, 2012:2), agree that infrastructural investment is not well developed in Nigeria to promote the country's socio-economic development and integration into the global economy. Agreeing with this, the Human Rights Watch (2007:40), said that Nigeria has some of the worst economic indicators in the world and that the overall picture has not improved since the end of the military rule. Integrated water resource management remains a challenge, chronic power problems seems to be institutionalized and all are taking heavy toll on economic growth and productivity (ICA, Annual Report, 2012:2). The report further stated that the country has inadequate power generation capacity, limited electrification, low power consumption, unreliable services and high costs of providing these services. A study by AICD has found out that poor and inadequate transport network is holding Nigeria back from competing effectively on the regional and global market, and that effective transport networks are a key component of the investment climate in that they enable people and goods access to markets and reduce the costs of doing business. African infrastructure Country Diagnostic (AICD), further stated that poor linkages among transport modes cause long delays and raise costs in the movement of goods and services.

The state of infrastructure in Nigeria currently does not meet the requirement for economic growth. The total road network in Nigeria stands at 194,800km (World Bank Report, 2012). Of this, the federal government is responsible for 22 percent, while the state and local governments are responsible for 27 percent and 51 percent respectively. However the government has commenced rehabilitation of the existing gauge railway. According to the apex bank (CBN), the current electricity generation capacity is at about 6,000 megawatt, which is far below total demand of 10,000 mw. Recent statistics shows that the quality of life in Nigeria appears to not have been improved or only improved marginally. The present state of infrastructure in Nigeria has made most small and medium business owners go out of business and this has turned their workforce back to the labour market, hence people live below poverty line with no food, security, shelter, medicare and educational facilities therefore lending credence to prostitution, unemployment, militancy, drug trafficking, human trafficking, child labour, religious crises etc.

As a result, Nigeria is among the least competitive economies in the world today. Infrastructural development according to Calderon (2008:48) is estimated to be impacting on the national Economy by reducing economic growth by 2 percent. Through investments infrastructure, Nigerian firms could achieve productivity gains.

Infrastructure is therefore critical to promoting sustainable and inclusive growth (IG), as good Infrastructure creates an enabling environment for economic activity that promotes productivity and growth for enhanced competitiveness.

Rural infrastructure development in particular has a wide range of impacts on individuals, households communities, and business both in terms of income and other quality of indicators (PIDA, 2012:2, Antonio, P. 2011, World Bank, 2012, ICA, 2012). In confirmation with the statement, Sanusi (2011:2), said that the provision of infrastructure encourages investment in less developed areas, allows movement of goods and people, facilities, information flows and helps commercialize and diversify economy. It creates environment for productive activities to take place, encourage investment, helps commercialize and diversify economy, in recognition that the development and maintenance of essential public infrastructure is a critical ingredient for sustained economic growth and poverty reduction. Iwuanyanwu (2011) and CBN 2012 have it that in order to meet the challenges of closing, infrastructural gap, Nigeria has adopted various initiatives like privatization, concession and public private partnership (PPP) but that more is needed to be done.

Sanusi, Lamido, Sanusi, noted that manufacturers, investors,

