

INFRASTRUCTURE AND HUMAN DEVELOPMENT IN NIGERIA

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ABSTRACT

Development policies and strategies are increasingly becoming human centred and provision of infrastructure is also being enhanced to facilitate the achievement of this goal. The federal government of Nigeria has over the years enacted policies and strategies aimed at enhancing human and infrastructural development. In spite of the efforts, Nigerians are still experiencing epileptic power supply, dearth of educational and health infrastructure and portable water supply among others. The objective of the study is to determine the significance of the relationship between the level of provision of infrastructure and the rate of human development in Nigerian for the period 2000-2011. The source of data was secondary, mainly from the MO Ibrahim Foundation. These were presented in tables and analysed using averages and percentages. The Spearman's Rank Correlation Coefficient was used in testing the hypothesis. The study revealed a poor state of infrastructure and human development in Nigeria. It also established a very significant relationship (.968) between the state of infrastructure and the level of human development in Nigeria for the period 2000-2011. The study recommended for a more result oriented reform and development of infrastructure in order to enhance human development in Nigeria.

Key words: Infrastructure, health, education, welfare.

1.0 INTRODUCTION

The first decade of the twenty first century has more than any other period experienced tremendous efforts by global and national governments to accelerate the pace of development. The focus and tenor of most of the development policies and strategies are increasingly becoming

human centred. The strategies are also concerned with creating an enabling environment for sustainable human development. For instance, Five of the Eight Millennium Development Goals (MDGs) centred on human development (Federal Republic Of Nigeria (FRN) 2008, 297). The National Economic Empowerment and Development Strategy (NEEDs) also

concerned itself with the issue of human development as part of Governments social charter (National Planning Commission (NPC), 2004, 94). The 1999 Constitution of the Federal Republic of Nigeria, in chapter II, relating to the Fundamental Objectives And Directive Principles of State Policy expresses government's commitment to creating enabling environment and promoting human development (FRN, 1999).

The creation and sustenance of an enabling environment through the provision of infrastructure in order to facilitate human development has also been stressed by the NEEDS and Seven Point Agenda (NPC, 2008, 87-160; NPC, 2004, 68-74; Oluleye & Obi, 2010, 16). Reforms were also undertaken in social welfare, health, education, telecommunication, transport and power sectors, among others, with a view to promoting and sustaining infrastructure and human development in Nigeria (Adeyemo, 2007, 66-82; Kpakol, 2007, 445-470; Lambo, 2007, 109-121; Lawal, 2007-91-108, Ogunsanya, 2007, 285-298 & Okebukola, 2007, 83-90).

In spite of these efforts, there seems to be infrastructure deficit in Nigeria. For instance, in a survey conducted by the World Economic Forum in 2012, Nigeria ranked 127, out of 133, 135 out of 139, 135 out of 142 and 130 out of 144 in 2009/2010, 2010 /2011 2011/2012 and 2012/2013 respectively in terms of infrastructural development (Usman, 2013, 5). Akinwale (2010, 216) citing Nnaji (2008) observes that per capital power capacity (Watts/ person) in Nigeria between 2001-2002 was 29.133 as compared with 85.12 and 106.31 for Ghana and India respectively. Only 19% of

roads in Nigeria were paved main roads as at 2003 (Central Bank of Nigeria (CBN), 2003 as cited by Akinwale, 2010, 217).

The state of human development in Nigeria has not been less worrisome either. The United Nations Development Programmes (UNDP) Human Development Index (HDI) report for 2010 indicates that Life Expectancy at Birth (LEB) in Nigeria was as low as 48.4. The Mean Years of Schooling (MES) was 5.0 while the Gross National Income (GNI) per capital was 2,156. While LEB rose to 51.9, MES remained at 5.0 as the GNI fell to 2,069 in 2011. Nigeria's UNDP HDI figures have been low over the years. It was 0.429, 0.449, 0.454 and 0.459 in 2005, 2009, 2010 and 2011 respectively (UNDP, 2011, 133). Why is Nigeria experiencing infrastructural deficit and low human development in spite of the efforts made by successive administrations in the country? Is there any significant relationship between the level of infrastructure and human development in Nigeria?

The objective of this study is to examine the relationship between the rate of infrastructural development and the level of human development in Nigeria for the period 2000-2011. The hypothesis (Ho) for the study states that, there is no significant relationship between the state of infrastructure development and level of human development in Nigeria. The study spans for the period 2000-2011. This has been determined by the availability of reliable, complete and current secondary data from the MO Ibrahim Foundation. The first decade of the twenty first century was also a turning point in the history of the country as it experienced a sustainable democratic regime after many years of

military dictatorships. Democratic regimes are expected to be more development oriented than military dictatorships. The study has a national rather than a single state or regional coverage for maximum utility. The components of infrastructure in this study consist of access to electricity, road and rail networks and air transport infrastructure. Others are the extent of telephone networks, information technology (IT), mobile phone subscribers, household computer and internet subscribers. The components of human development are provision of health, education and welfare services (MO Ibrahim Foundation, 2012, 27).

The UNDP is globally acknowledged as the most reputable organization in the area of human development. The MO Ibrahim Foundation identifies the provision of both infrastructure and human development as components of good governance. None of the organizations engaged in an empirical study on the relationship between the two variables. Foster and Pushak (2011,1-49) surveyed Nigeria's infrastructure from a continental perspective while Akinwale (2010, 207-228) laments over the menace of inadequate infrastructure in Nigeria. Akinyosoye (2010,2-8) undertook an empirical study on infrastructural development in Nigeria as a road map to sustainable development. Empirical study on the relationship between infrastructure and human development is therefore scanty. This study attempts to cover this knowledge-gap. Although, the UNDP is globally the most reputable organization concerned with human development, data on this dependent variable will be obtained from the Ibrahim Index of African Governance. This organization is more

afro-centric and provides complete data for all the years covered by the study. This limitation is therefore, not enough to invalidate the findings of the study.

2.0 LITERATURE REVIEW

The term infrastructure has often been defined operationally rather than conceptually. For instance, according to Frischman (2005, 923), infrastructure generally refers to the notion of physical resource systems made by humans for public consumption. Typical examples which he describes as traditional infrastructure include: transportation systems, governance systems, such as courts, communication systems and basic public services and facilities such as school, sewers, and water systems. The non-traditional infrastructure according to Frischman (2005, 927-928) includes environmental resources such as lakes, atmosphere and ecosystem, information resources and internet resources. These were further classified into commercial, public and social infrastructure. Frischman (2005,928) reiterates the view of Rose (2005) who drew an explicit casual connectivity between open access to infrastructure and positive externalities and the greater social value it generates.

Akinwale (2010,209-210) summing up the views of Abosedra, Dah, and Gosh 2009; Mandel, 2008; Frischman, 2007; Central Bank of Nigeria (CBN) 2003; and Pendse, 1980 operationally defined infrastructure to comprise of gas and petroleum pipelines energy/ power, transportation, water, communication, health and education infrastructure. He observed that

a research conducted by the prominent scholars indicates that infrastructure is essential for socio-economic development. While the definitions of both Frischman (2005) and Akinwale (2010) identified similar components of infrastructure for public use, none of them mentioned the provider of infrastructure, either, public, private or through public private partnership. In view of this lacuna, infrastructure can be defined as public physical facilities such as electricity, water, roads, rails roads, ports etc and social amenities such as health and education provided by the government or through public/private partnership for public use.

The concept of sustainable development is relatively new in development literature. In spite of this, it has become a political and academic buzzword since the United Nations report "our common future" 1987 (Fuentes- Nieva and Pereira, 2010). Sustainable development as a concept, as a goal and as a movement spread rapidly and is now central to the mission of countless international organizations, national governments and corporate enterprises (Kates, Parris, and Leiserowitz, 2005, 8-21). Three major components of sustainable development can be discerned in development literature. These are: sustainable economic development, sustainable human development and environmental sustainability (Jhingan, 2007, 22). This paper concerned itself with sustainable human development.

The United Nations Development Programme (UNDP) which is globally acknowledged as the most reputable organization in human development has

defined human development with changing emphases from 1990-2009. These vary from enlarging people's choices, creating environment in which all people can expand their capabilities, expanding people's choices to lead live they value and expanding people's choices, freedom and dignity (Alkire 2010,7) in all the definitions advanced by the UNDP from 1990-2009, the issue of long healthy life, knowledge and resources for decent standard of life appeared dominant. This forms the nucleus of human development.

Development Scholars Jhingan (2007, 22) Martinussen (nd), Neumayer (2010, 3-7) and Todaro and Smith (2009, 49-56) define the concept of human development using the view of the UNDP (1990) as a process of enlarging people's choices. Operationally, human development is determined by the extent of the level of literacy, life expectancy and income of the citizens. These are measured using an index (Human Development Index) which varies from 0-1 and it is calculated as; $HDI = 1/3 (\text{Income Index} + \text{Longevity Index} + \text{Education Index})$ (Neumayer, 2010 2-7) These indicators of human development according to MO Ibrahim Foundation are health care delivery, education and welfare service. These are similar to those of the UNDP. The scholars; Jhingan, 2007, 22 and Martinussen (nd) and the UNDP contrasted economic growth with human development. They asserts that, while economic growth focuses on the expansion of one choice (income), human development embraces the enlargement of all human choices whether economic, social, cultural or political.

Studies by Akinyosoye (2010, 1), Foster and Pushak (2011, 3) and Usman (2013, 4) stressed the significance of infrastructure to economic growth and development and quality of life of the people. Akinyosoye (2010, 1) asserts that infrastructure contributes to economic development by increasing productivity and providing amenities which improve the quality of life. He adds that infrastructure such as roads, rails, ports, electricity and water are also intermediate inputs to production. Raising Nigeria's infrastructure level to that of megacities would boost annual per capital growth rates by four percent (4.0%) and about half of this potential impact is associated with the power sector (Foster and Peushsc, 2011, 3). Usman citing in Habitbats (2011) observes that infrastructure development promotes economic growth, ensures equity and reduces poverty. These studies thus points that infrastructure development can enhance education, health care service delivery, economic growth and development and welfare of the people.

The theoretical framework of the study is the "Economic Theory of infrastructure and commons management". The major proponent of the theory is Frischman (2005, 974) and was used by Akinwale (2011, 207) in his study; "The menace of inadequate infrastructure in Nigeria" Frischman (2005, 974) developed an economic theory of infrastructure that provides a better understanding of societal demand for infrastructural facilities. Frischman (2005, 974) asserts that infrastructure resources generate value when used as input into a wide range of productive processes. He also argued that the outputs from these

processes are often public goods and non-market goods that generate positive externalities benefiting society as a whole.

In relation to this study, infrastructure such as electricity, Water, roads and rail networks, port facilities, information technology and digital connectivity can serve as input and general value in the provision of education, health care service delivery and provision of welfare services. In addition, the provision of education, health and welfare services is largely public goods which generate positive externalities that benefits society as a whole.

3.0 METHODOLOGY

The research design for this study is content analysis of secondary data as published by the MO Ibrahim Foundation for the period 2000-2011. The foundation is the leading afro-centric, non-governmental organization constituted to provide data on the quality of governance in Africa as well as promoting and rewarding good governance in the continent. The MO Ibrahim foundation uses the Ibrahim Index of African Governance (IIAG) in scoring and ranking the quality of governance in terms of percentages(%) using four major categories and eighty -eighty component indicators sourcing data from twenty-three organizations (MO Ibrahim Foundation, 2011 and 212, 2).

The independent variable (infrastructural development) is one of the sub-components of sustainable economic opportunity categories while Human Development category encompasses provision of health, education and welfare services to the people. Data on these variables will be presented in tables and analyzed using percentages and averages. The spearman's Rank Correlation

Coefficient will be used to test the hypothesis.

4.0 DISCUSSION OF FINDINGS

As stated earlier, the independent and dependent variables as contained in the

hypothesis postulated are infrastructure and human development respectively. Data on these variables as obtained from the MO Ibrahim Foundation are presented and analyzed in this section.

4.1 The Rate of Infrastructural Development

The data on the rate of infrastructural development is presented in Table 1.

Table1. The rate of infrastructural development in Nigeria.(2000-2011)

Year	Score (%)	African Average (%)	Ranking
2000	7.6	27.0	46
2001	7.6	27.1	46
2002	7.7	27.3	46
2003	8.0	27.6	46
2004	8.3	27.9	46
2005	8.7	28.3	46
2006	9.1	28.8	45
2007	9.4	29.3	47
2008	10.2	30.0	47
2009	10.6	30.0	47
2010	11.0	31.8	47
2011	11.4	32.4	48

Source: Adapted from MO Ibrahim Foundation; 2012 Ibrahim Index of African Governance Data Report 2012, pp/ 30-37.

Nigeria's scores in infrastructural development for the period 2000-2011 were generally very poor. These range from the lowest of 7.6% in 2000 and 2001 to the highest of 11.4% in 2011 which is far less than the African average of 32.4% for the same year. Nigeria's average score in infrastructural development for the dozen years was 9.1% which is far less than the continental average of 28.9%. The increases in the provision of infrastructural facilities have been very

negligible over the years. Nigerian's best ranking was 45th in 2006 out of 52 countries covered by the index. The country persistently ranked among the last eight countries in Africa in the development of infrastructure. In relation to the theoretical framework, Nigeria has not been able to adequately develop the country's infrastructure that will generate positive externalities benefiting the society as whole.

4.2 *The Level of Human Development in Nigeria.*

The level of human development in Nigeria is represented by extent of provision of education, health care and welfare services. The country's scores are presented in Table 2.

Table 2: *the level of human development in Nigeria*

Year	Score (%)	African Average (%)	Ranking
2000	37.5	46.3	38
2001	40.4	51.1	40
2002	40.4	61.7	41
2003	39.6	51.4	41
2004	40.8	52.1	41
2005	42.1	52.2	38
2006	43.7	52.7	35
2007	44.1	53.9	37
2008	44.8	54.3	36
2009	46.5	55.4	33
2010	47.8	56.6	37
2011	47.8	56.7	39

Source: Adapted from MO Ibrahim Foundation; 2012 Ibrahim Index of African Governance Data Report 2012, pp.28-63.

Nigeria's scores in human development range from the lowest of 37.5% in 2000 to the highest of 47.8% in 2011. There have been very marginal increases in scores especially from 2004-2011 with undulations between 2000-2003. The country's average score for the dozen year was 42.9% as against the African average of 52.9%. Compared to the development of infrastructure, Nigeria recorded higher scores in human development. However, the country's scores were lower than the African average for the corresponding years. Nigeria's best ranking was 33rd in 2009 out of the 52 countries covered by the survey. The country could not rank among the first 30 out of the 52 covered. However, Nigeria ranked as low as 41st in 2002 and 2003.

4.3 *Test of Hypothesis*

The Ho postulated for the study states that; there is no significant relationship between the rate of infrastructural and human development in Nigeria. The independent and dependent variable are infrastructural and human developments respectively. This hypothesis was tested using Spearman's Rank Correlation Coefficient at 0.01% level of significance with the aid of Statistical Package for Social Sciences (SPSS). The result of the inferential statistical test is presented in Table 3.

Table 3; Correlations

		Infrastructure (%)	Human Development (%)
Infrastructure (%)	Pearson Correlation	1	.968
	Sig. (2-tailed)		.000
	N	12	12
Human Development (%)	Pearson Correlation	.968	1
	Sig. (2-tailed)	.000	
	N	12	12

** . Correlation is significant at the 0.01 level (2-tailed).

As indicated in table 3, the value of the correlation coefficient is .968. This means that there is a very strong relationship between the level of infrastructure and human development in Nigerian. Therefore, the H_0 which states that; there is no significant relationship between infrastructure and human developments in Nigeria is rejected as the study revealed that there was a very significant relationship between the two variables.

5.0 CONCLUSION AND RECOMMENDATIONS

The data in Table 1 and 2 indicate a very low level of infrastructural development and human development in Nigeria. As the country's scores in infrastructural development rise though marginally, the level of human development also rises. In other words, the poor state of infrastructural facilities such as electricity road, roads, ports, information and communication technology (ICT) in Nigeria is among other factors responsible for the low level of human development in Nigeria for the period 2000-2011.

This implies that in order to improve the level of human development in Nigeria, there is the need to invest and develop

infrastructure in accordance with Frischman's (2005) Economic theory of Infrastructure and commons management. This is because the supply of infrastructural facilities such as; electricity roads, rails, ports water and ICT among others generate the required value in electricity the provision of education, health and welfare services.

In view of these, the study recommends for more investment in massive financing of infrastructural facilities such as electricity, roads, rails, ports, water reserves and ICT among others. Though, several sectoral reforms were undertaken by successive regimes in Nigeria especially in infrastructure and human development, there is the need for more result oriented reforms as the previous ones could not achieve desired objectives. With the approval of the National Integrated infrastructure Master plan by the Federal Executive Council on 2nd November, 2012, there is the need for its faithful implementation scheduled to commence in 2014. Nigeria's journey towards the target for the achievement of the Millennium Development Goals most of which are human centred will continue to be a mirage if the current state of infrastructure in Nigeria is not improved.

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