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Locational Efficiency of Infrastructural Facilities in Rivers South East Senatorial District, Rivers State, Nigeria

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Abstract

This study analysed the efficiency of infrastructural facilities location in Rivers South East senatorial district in Rivers State. The study focused extensively on the efficient location of infrastructural facilities, its challenges, and impact on Regional Development. The research adopted descriptive research using three different data collection instruments viz: structured questionnaire, personal interviews and observations. The sample size was determined using Taro Yamani's formula from study population of 3,109,665.5. Simple random sampling technique was used to select five (5) out of eight (8) local government areas in Rivers South East Senatorial District Rivers State, and questionnaire were administered to 400 respondents. The data collected were subjected to SPSS using version 26 and descriptive analysis with statistical relevant techniques such as mean, median, modes, tables, and charts where appropriate. The study revealed that the infrastructural facilities in the study area are inadequate, inefficient, and the impact of infrastructural facilities on regional development are economic growth, employment and improved standard of living. The study concluded that a region where infrastructural facilities are adequately provided and efficiently located, evenly distributed development, employment and economic growth will be attracted towards such region. The study recommended among other things that political interest should be avoided in providing infrastructural facilities; professionals should be engaged and allowed to work independently for the benefit of the region, also, the state government should involve the Ministry of Physical Planning and Urban Development to determine the location of infrastructural facilities and centres of economic activities in the State and also offer advice on State development projects/programmes with socio-economic and environmental impacts. This will help not only to promote the spirit of distributive justice but also foster regional balance in our developmental efforts particularly in the South East Senatorial district, and Rivers State in general.

Keywords: Locational Efficiency, Infrastucture Facilities.

1. Introduction

Infrastructure refers to the fundamental physical and organizational structures and facilities needed for the operation of a society, economy, or enterprise. It includes transportation system (roads, bridges, railways) utilities (water supply, electricity, telecommunications) and social infrastructure (schools, hospitals, public building) that support daily activities and economic growth (Griggs, 2010). The infrastructure is necessary to drive the metropolis according to Nubi (2003). It gives the city a climate that is essential to economic development and progress. Infrastructure is contributing to economic growth via increased productivity and service delivery that improves the quality of life.

The services generated from adequate infrastructure will lead to an increase in overall output, such as increasing farming output by improved roads, creation of maritime ports, rail connections, generation of electricity, transmission and distribution, water and irrigation projects to improve the quality of life and urbanization of different areas (Akinyosoye, 2010).

Regional development in itself is the urbanization of various regions via the supply or efficient placement of infrastructure. In regional growth, therefore, locational efficiency of infrastructure facilities is essential. The infrastructure could be defined as a total of material, institutional and personal facilities and data available to the economic agents, contributing in the case

of a suitable assignment of resources a complete integration and maximum level of economic activity to the realization of the equalization of compensation for comparable input. (Colorado, 1966). Infrastructure's important role in economic life comes from its fundamental connection to the causes of economic development (Godley, 2000).

Infrastructure facilities include equipment for transport, education and sanitary facilities, electricity and water supply facilities, waste disposal facilities and air purification, construction and residence stocks, administrative and conservation facilities for natural resources (Biehl, 1986). The theoretical and empirical assessment of infrastructure's contribution to growth and economic development has been a major focus of the last two decades (Programme, 2011).

An effective infrastructure placement may re-form traffic or economic location patterns, resulting in a land-use conversion for high economic production per unit area, which in turn leads to the growth of the region in which the infrastructure is situated (Ominrin, 2004). The inefficient placement and lack of access to transport services of essential infrastructures, such as trails, bridges and roads, makes it difficult for the poor to have access to markets and services.

The word "region" is usually used to indicate a collection of physically adjacent areas with some shared or complementary features or linked with significant inter-area activities and flows" " (Perloff et al., 1960).

Development is a multidimensional process that involves structural, institutional and attitudinal change, accelerated economic growth, reducing inequality, and eradicating absolute poverty (Todaro, 1979). This means that the effective placement or distribution of infrastructure will reduce inequalities across areas, thus increasing socio economic growth in the region.

Development is also considered a distributive fairness, social-economic change and basically human advancement (Mabogunje, 1980). In order to achieve growth in that area, infrastructural facilities and services should be distributed throughout regions. Development must also be considered to go beyond the economic and physical sphere and be a safe environment, a free environment from need, a possibility for personal growth and environment and access to products and services (Naluba, 2016; Adeyemo, 2003).

The main issue in Advanced Countries is regional development through redistributing investment projects to rectify unbalanced growth across areas with a view to balanced development (Mabongunje, 1977). This suggests that the distribution or location of investment projects in a region should be effective in order to achieve balanced development, including infrastructural installations, such as roads, bridges, education and healthcare, water supply, waste disposal and air purification facilities, structural and housing supplies, administrative facilities, etc. Regional planning should be included in order to solve problems relating to unequal or lopsided distribution of resources, poverty, unemployment, low-income generation and socio-economic imbalance, including spatial arrangements and the orderly allocation of resources and amenities within areas (Sule, 2000).

2. Statement of Problem

Globally, the problems associated with regions are distribution of activities in space so as to meet social objectives, improve access to properties, distribution of social facilities in a certain area and groups experiencing social, economic or political disadvantage in some nations or states. (Friedmann, 1963). It has become increasingly clear that financial allocations from government and other sources that are used to provide infrastructural facilities and services are concentrated in a particular region. This situation is mostly associated with developing countries; a category Nigeria falls under. Rivers State is not an exception to this situation.

The location of infrastructural facilities in most cases is done without feasibility studies and needs assessment or it is neglected. This is done as a result of political interest; those at the corridor of power diverting the infrastructural facilities to their communities or region regardless of the required population threshold and range of goods. This makes some of the facilities dormant in such areas. These political interest have caused certain districts to get little or no infrastructure amenities, leaving these areas with low living standards, economic deficits and improving poverty as a result of the diversion of public infrastructures.

Infrastructure requirements are greater and resources are restricted for infrastructure supply. In emerging nations, ethnic interest turmoil and lobbying are commonplace. This leads to a sluggish development of an area. Port Harcourt is the only City in Rivers State with a high level of infrastructural development. In particular, high levels of infrastructure are exposed to congestion (vehicle traffic congestion), over populations, housing shortages, etc. The high level of infrastructure installations also leads to unequal growth in certain regions.

In a research, Karen (2002) used questionnaires to get the required information from 279 respondents about the impact of local infrastructural amenities on business property in Califonia, the United States. He submitted that the transit infrastructure of the country was significantly affected by poor local infrastructure which cut service, decreased passenger traffic, endangered numerous transit systems and left significant requirements unfulfilled. Almost 1/4 of the rail transportation facility is bad and 1/5 of the transit vehicles have to be replaced as quickly as feasible. Service levels are insufficient in almost all regions and the mobility of millions of people who rely on public transport is being reduced.

The public infrastructure vs. residential property worth research was done in Lionel Town, Jamaica, by Adeyosoye et al, 2016. Questionnaires were given and 99.8% of the sample variance of low, medium and high density regions, respectively, was ascribed to residential rental values, with a model summary of the impact of infrastructure regression on property prices showed. 99.3% and 99.7% respectively.

A research on the infrastructure supply imperatives and increased property prices in the state of Akwai Ibom, Nigeria was conducted by Udoka (2013). The administration of 272 surveys concluded the essential need of property value infrastructure supply. A research on infrastructure development and upkeep in southern Nigerian oil producing regions, its impacts, choices, and the difficulties, was carried out in Rebecca (2017). She stated that infrastructure development, repair and maintenance would lead to a revitalization of the nation's economy and to a fast development of Nigeria in order to realize our long sought after yet much wanted vision 20:20-20.

The impacts of infrastructure development on residential properties in Minna, Nigeria were studied by Ajayi et al, 2014. It could be inferred that the research area's road network considered the location of inhabitants owing to the character of the routes in Tunga and Bosso. 400 questionnaires were given to the people. All these evaluations were conducted, but none of those studies focused on the location efficiency of Rivers South East Senatorial District as a tool in Rivers State regional development, the gap that the research aims to address.

Aim and Objectives of the Study

The aim of this work was to to investigate the locational effectiveness of infrastructure in Rivers South East Senatorial District in Rivers State, Nigeria. Its specific objectives are to:

Examine the efficiency of infrastructural facilities location in Rivers South East Senatorial District.

Examine the adequacy of infrastructural facilities in Rivers East Senatorial District.

Research Questions

The following research questions were drawn to guide the study

How efficient is the location of infrastructural facilities in Rivers South East Senatorial District?

How adequate is the infrastructural facilities in Rivers West Senatorial District, Rivers State?

3. Literature Review

3.1. Concept of Infrastructure

Omuojine (1999) described infrastructure as the stock of fixed capital assets in a country for example Road, railways, Airports, hospitals, waterway, power stations water works and communication network. It serves as slender threads that weaves together human want and value with those of the environment. Literally, it refers to fixed facilities or installation traditionally provided by public sector. Omuojine (1997) classified it as follows:

Transportation including road, railways, airports seaport and waterway.

Water supply including water work and Dams

Electricity including power station
Telecommunication including portal, telephone telex, fax, mile, services.
Health including hospital, maternity home and health, centres.
Sanitation and solid waste disposal.
Drainage and embankments.

National Research Council of the United States of America captured to a very great extent the totality of the term as referring to "both specific functional modes, highways, streets, roads and bridges; mass transit; airport and airways; water supply and water resources; waste water management; solid waste treatment and disposal; electric power generation and transmission; telecommunication and hazardous waste management – and the combined system these modal elements comprise.

According to Okoronkwo and Ezeh (2012) cited in Okorafor et al, (2017), infrastructures are not the things with which nature has endowed man, but the profitable conversion of these natural resources for the advancement of the society and benefit of man. Infrastructure is the basic structure of services, installations, and facilities needed to support industrial, agricultural and other economic development in a region. Infrastructure is important for improving the quality of life of the people. Nubi (2002) describes infrastructure as the aggregates of all facilities that allow a city to function effectively.

It is also seen as a wide range of economic and social facilities that help in creating an enabling environment for economic growth and quality of life. Neil (2004) also was of the opinion that infrastructure services have a bearing on economic growth. Neil explained further that adequate infrastructure reduces the cost of production which in turn affects the profitability level of output and employment, particularly in any small-scale business. He also stated that infrastructure refers to all basic inputs and requirements for the proper functioning of the economy. Infrastructure is simply the engine that is needed for proper functioning of a city. It can be put in place by private or public involvement with the aim of facilitating the effective functioning of the society.

Obateru (2005) identified two categories of infrastructure namely:

3.1.1. Physical Infrastructure

This refers to the tangible, man-made facilities that provide the basic framework for economic production and human activities. It consists of visible assets such as roads, railways, airports, power supply systems, water pipelines, telecommunication networks, and housing structures. It is primarily concerned with the movement of goods, services, and people, as well as the provision of utilities necessary for industrial and commercial growth.

3.1.2. Social Infrastructure

This refers to the institutions, facilities, and services that support human development and improve quality of life. It may not always be tangible (though it often has physical components like schools or hospitals), but its essence lies in the services it provides to enhance human capital and social well-being.

3.2. Concept of Infrastructure Development

The need for the development of infrastructure in any region cannot be over-emphasized. This is because infrastructure is the gateway to economic, social and almost unmistakably wholesome political development. Notwithstanding, however, the development of infrastructure is costly. For instance, infrastructure funding in Africa for the first half of 2010 stood at US $3.04 billion. For the same period in 2011, the amount stood at US $4.435 billion. Ever since, there had been an upward trend. Project funding in 2010 increased significantly from 2009, reaching $21.7 billion, up from $18.9 billion. The scenario justifies the obvious need for the development of infrastructure in the region.

According to the United Nations Environment Program (UNEP) and UN-Habitat, Africa is urbanizing at a rapid rate with urban centres growing faster than anywhere else in the world. African cities will grow by 25% by 2025 and 60% of the continent's population will be urbanized by 2050. It is clear from surveys conducted by Dealogic (2010), Okoronkwo and Ezeh (2012), Africa Investor (2011), that an enormous amount of people is moving out from rural areas into urban areas thus

putting not only a necessity but also a demand for the provision of infrastructural facilities between nodes as well as in the cities and ultimately the regions.

It is very sad to discover however that out of one hundred (100) bankable infrastructure projects in Africa in 2010/2011, Nigeria had only five (5) sharing one of the five – Main One Undersea Cable project- with Ghana. Of the remainder, two (2) were un-finalized one of which – Niger River Bridge, Delta Region or what is commonly known as the second Niger Bridge, is in the Southern Nigeria region. Namibia, one of the poor countries of Africa with a population as low as 45 million engaged in infrastructure development worth US $685.6 million as against Nigeria's US $320 million over the same period (2010/2011). Obviously, there are challenges particularly as it concerns the Southern Nigeria Region. The Challenges to Infrastructures Development in Southern Nigeria.

3.3. Infrastructure and Growth

The concentration of industries in urban centres has promoted growth within cities. The industrial development has also contributed to diversified industrial structure which results to expansion in cities. The existence of industries in any urban centre will create employment opportunities thus making people to migrate from rural to such urban settings for employment opportunities. Urban areas are able to induce economic activities because they enjoy an advantage in the supply factors of production especially labour. With this, the market becomes broader as the supply of real property resources, more sub-division of function occurs and economics of scale emerges in the provision of basic public utilities and services. With the increase in supply of real property, more demand will be made on commercial properties and the higher the demand for accommodation, the higher the property value (Alicia, 1992).

Olujimi and Bello (2009) noted that the increasing demand for commercial property in our urban centres would continue to attract the real estate investors because of continuing property rent increases. This is supported by land economy theory which suggests that the balance of demand and supply is at equilibrium if for every new household exercising effective demand, there is an available house either for letting or purchase at a price that permits demand to stabilize supply. It should therefore be expected that when the demand for housing increases, the price or rent for such houses goes up and ultimately this encourages investors to undertake new developments.

In line with this, cities develop as a result of the economic functions which necessitate the gathering of people and activities in any given area. The lifestyle in the urban area changes from an agrarian society to modern industrial economy. This is due to development in facilities, expansion of interregional commerce and the increased significance of service activities. Infrastructure like good road network, energy, water, hospitals, and educational facilities are drivers of economic growth. The quality of infrastructure available within any city has become increasingly important in attracting new investments. (Olujimi and Bell, 2009).

There is an ineffective administration structure to cater for the maintenance of our infrastructures at the urban centres, however, such problems could have been easily solved if other stake holders like private individuals, community-based organizations (CBO) and non-governmental organizations (NGO), apart from the government participate in the provision and management of urban infrastructure. It has thus become apparent that the provision and management of urban infrastructure cannot be left solely to government hence private sector participation is important.

Infrastructure is the basic physical and structure needed for the operation of a society or enterprise or reproductive or services and facilities necessary for an economy to function. It can generally be defined 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, state or a regions development.

Functionally, infrastructure facilitates the production of goods and services, development of commercial properties and also the distribution of finished goods to the markets as well as basic social services such as schools and hospital, for example roads enables the transport of raw materials to a factory. In military parlance the term refers to the building and installations necessary for the support, redevelopment, operation of military force (Makata et al, 2019)

4. Methodology

4.1. Research Design

The study adopted descriptive survey. The research process involves gathering, tabulating, describing, analysing and interpretation of data.

4.2. Nature and Sources of Data

Data were collected from primary and secondary sources

4.3. Population of the Study

The population for this study is the total population in the study area (Rivers East Senatorial District) comprising of eight Local Government Areas, the population is 2, 039, 119 (2006 population census statistics) and was projected to 2024 using the exponential method with the growth rate of 3.5% to 3,109,665.5 persons which the formula of Taro Yamane was used to derive the sample size.

4.4. Sample and Sampling Techniques

Five (5) Local government areas out of the eight (8) Local government areas in the Rivers East Senatorial District were selected for the study with a simple random sample method. The Taro Yamene formula was used to determine the sample size from the above population. Using Taro Yamene formula, the sample size was given as 400.

4.5. Instrument for Data Collection

In order to collect the necessary data for the research, residents were offered a mix of closed and open ended and well-structured questionnaires. Personal data such as the gender, age, revenue and employment of respondents were included in the questionnaire. The poll also contained questions on locating efficiencies of infrastructure, reasons of unbalanced growth, patterns of distribution of amenities, difficulties of placement and views on these issues.

4.6. Method of Data Analysis

Data were analysed by descriptive analysis utilizing a univariate statistical method, with related statistical techniques, such as the percentage, frequency table and charts using Excel package.

5. Result

Research Question One: How efficient is the location of infrastructural facilities in Rivers South East Senatorial District?

Fig. 4.1: Efficiency of the location of infrastructural facilities in the study area.

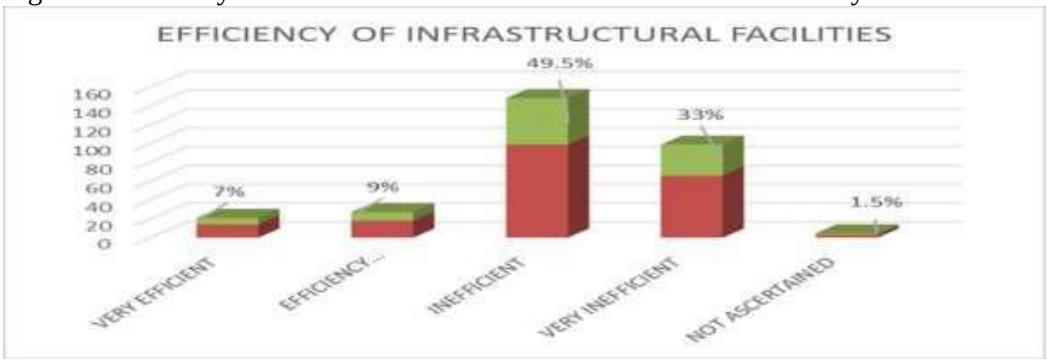

Fig. 1.1: Efficiency in the location of infrastructural facilities

SOURCE: Researcher' field work, October, 2024.

Fig. 1.1 shows efficiency in the location of infrastructural facilities in the study area, only 7% of the total respondents are of the view that the location of the infrastructural facilities was very efficient, 9% were of the view that it was efficient, 49.9% were of the view that it is inefficient, 33% were of the view that it was very inefficient, whereas 1.5% were not certain. This implies that, the location of the infrastructural facilities in the study area was inefficient representing 49.5% being the highest frequency. The respondents also revealed that the people find it difficult to access the facilities because of the distance of the facilities to the people accessing it.

Research Question Two: How adequate is the infrastructural facilities in Rivers West Senatorial District, Rivers State?

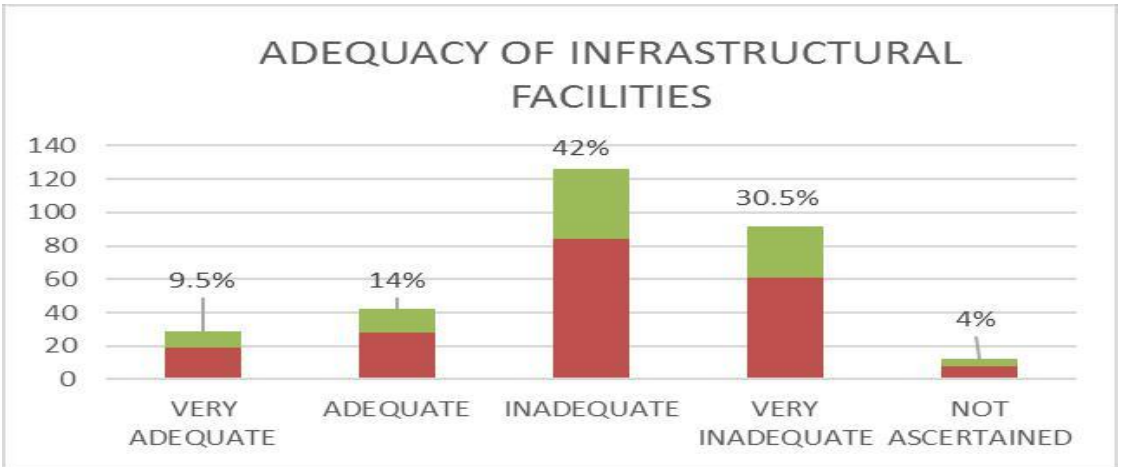

Fig. 1.2: Adequacy of infrastructural facilities
SOURCE: Researcher' field survey, October, 2024.

Fig. 1.2 shows adequacy of infrastructural facilities in the study area, only 9.5% of the total respondents were of the view that the infrastructural facilities are very adequate, 14% were of the view that they are adequate, 42% were of the view that they are inadequate, 30.5% were of the view that they were very inadequate, whereas 4% are not certain. This implies that, the infrastructural facilities in the study area are inadequate representing 42% being the highest frequency.

6. Discussion of Findings

The findings on Fig. 1.1 shows that the location of the infrastructural facilities in the study area are inefficient. This is because, not everyone benefits from the facilities because of its distance. The research evidently revealed that, the infrastructural facilities in the study area are inadequate.

7. Conclusion

This study revealed that, cutting down of forest trees to create roads and route for oil and gas pipes, setting up forest fires, and extraction of firewood, timber and non-timber resources increases forest, soil erosion, land pollution and sedimentation are the remote causes of forest decline in the study area.

8. Recommendation

Based on the study findings, the followings are hereby recommended:

The government should come up with plans and innovations to enhance forest resource in the study area.

The State government should see the need to create awareness among individuals in the study area on the benefits of conserving forest resources in the study area.

The Government should also harness and channel properly to famers, elders and youths in the study area those factors that caused forest decline as it will spur them to develop more interest in conserving their forest resources.

References

Adeyemo, P. M. (2003). Development and Underdevelopment in a Comparative Perspective. Port Harcourt, Nigeria, Amethyst and Colleagues press.

Ajayi, M.T.A., Jimoh, O.L., & Jimoh, R.A. (2014). Effects of infrastructural development on residential property values in Minna. Ethiopian Journal of Environmental Studies and Management, 7(4), 452-459.

Akinyosoye, M. (2010). Infrastructure Development in Nigeria Road Map to Sustainable Development. Working Paper, Green Hill Technical Services Ltd., Lagos.

Biehl, (1986). The contribution of infrastructure to Regional Development. Office for official publications of the European Communities, Luxembourg.

Friedman, J. (1972). A General Theory of Polarization Development; in Hansen, N.M (ed) Growth centers in Regional Economic Development. New York: The free press.

Friedman, J. (1972). A General Theory of Polarization Development; in Hansen, N.M (ed) Growth centers in Regional Economic Development. New York: The free press.

Mabogunje, A.L. (1977). 'Regional Planning in Tropical Africa' in Mabogunje, A.L and Faniran, A. (eds) Regional Planning in Tropical Africa, Ibadan.

Mabogunje, P. L. (1980). The Development Process: A Spatial Perspectives. London: Hut Clicson.

Naluba, G. N. (2016). Locational Efficiency of Local Government Headquarters as Regional Development Centres in Rivers State, Nigeria, School of Graduate Studies, University of Port Harcourt, Port Harcourt.

Neil, D, (1998). A hedonic price model of office rents. Journal of Property Valuation and Investment, 16(3), 297-312.

Nubi T. O. (2003). The United National Inter-Regional Seminal on the Social Aspect of Housing and Infrastructural Management.

Nubi, T.O. (2002). Procuring, managing and financing urban infrastructure towards integrated approach. Presented at the – National Working on Land Management and Property Tax Reform in Nigeria, Organized by Estate Management Department of UNILAG, Akoka.

Obateru, O.I. (2005). Basic Elements of Physical Planning. Ibadan, Nigeria: Penthouse Publications.

Okorafor, G.F., Okoronkwo, C.,& Oladejo, E. (2017). Infrastructure development and maintenance in the oil producing areas of southern Nigeria; Implication, options and challenges. International Journal of Scientific Research in Technology, Applied Sciences and Health Studies: August, 2017, 2(1), 2579-1036

Olujimi, A., & Bello, M.O. (2009). Effects of infrastructural facilities on the rental values of residential property. Journal of Environmental Sciences 5(40): 332-341.

Ominrin, M.M. (2004). Guideline for the effective management of public infrastructure in Nigeria. Journal of Estate Surveyors and valuers, 22(1), 15-21.

Perloff, H.S., E.S. Dune & R.E. Muth (1960). Regions, Resources and Economic Growth, Resources for the Future, Johns Hopkins Press, Baltimore.

Programme, U. N. (2011). Infrastructure for Economic Development and Poverty Reduction in Africa.

Sule, R.A.O (2000). Paradigms of Regional Development Planning in Africa. Theory and Practice. Calabar: Nigeria. Prathel (Nig.) Enterprises.

Tang, S.M.T. (2006). How Front End Factors Affect Project Outcomes: A Look at Four Infrastructure Projects in Asia (Working Paper #34). Collaboratory for Research on Global Projects, Stanford University, Stanford, CA.

Todaro, M.P (1979). Economics for A Developing World, (London: Longman).

Udoka, I.S. (2013). The imperatives of the provision of infrastructure and improved property values in Nigeria. Mediterranean Journal of Social Sciences, 4(15), 566-578.

