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THE IMPACT OF INFRASTRUCTURE DEVELOPMENT ON LAND VALUES IN SELECTED NEIGHBORHOODS IN GREATER PORT HARCOURT CITY

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ABSTRACT: nfrastructure development is a key determinant of growth and development of any Nation or State. Investment in infrastructure provision can stimulate and increase property development and by association, increase in land values. Infrastructure development will open up locked lands for development and further bring about city growth and consistent development. This study examined the effects of infrastructure and property development on surrounding land values in selected neighbourhoods in Greater Port Harcourt City of Rivers State. Three separate neighbourhoods namely: Peter Odili Road, Rukpokwu and Igbo Etche were studied. The study employed the mixed research approach with the use of questionnaire surveys, interviews and observations in data collection. Collected data was analyzed using simple statistical tool of frequency and percentages. Content analysis was used to interpret the data . Analyzed data is presented in graphs, tables, and text. The findings revealed that the presence of infrastructure facilities such as tarred roads, drainage and services, results in increases in land values. Active property development also affected land values and brought about an upward trend in value of land and landed properties within the studied neighbourhoods. The findings also reveal that lack of infrastructure retards property development and led to a stagnation or even decline in land values. The study concludes that both government, private companies and individuals need to collaborate in the provision and development of basic but critical infrastructure facilities aimed at opening up new areas for development. The expected benefit will be the decongestion of the main city and this will result in rural development thereby discouraging rural urban migration in search for better life.

Keywords: Infrastructure development, land value and property value

I. INTRODUCTION

Efforts in infrastructural development and provision contribute greatly to the population growth of city centers in a nation. Good quality roads, telecommunication, sea ports, electricity supply, water supply, good sanitation/ sewage disposal system, railways, airport, educational institutions, security and healthcare are essential for the operation of the economic sectors in a developing world. In many countries and for many years, economists, planners and surveyors have tried to provide answers to why economic growth is faster in some regions than others and why some cities grow faster than others. With the availability of major investments in infrastructure in any city, there would usually be corresponding population increase, increased demand and this will ultimately influence property development.

Scholars have debated the role of physical and social infrastructure in development without reaching a definitive consensus on their importance relative to other dynamics in human development. It cannot be denied that there is a high positive correlation between a developed infrastructure and sustained high rates of economic growth and trade coupled with a significant reduction in poverty, inequality and environmental degradation, (Bello, 2002).

The market value of land and its importance in real estate investing is closely related to the economic situation of the area of investment. It is the duty of an investor, to understand the growth pattern, the growth appreciation rates, and the use of the land over period of time. Land is a valuable form of asset investment in the real estate market. Planning or zoning laws from local authorities can restrict land supply in many urban areas. These laws are sometimes enforced to prevent the overpopulation of certain cities, which means that owners of land there benefit more because of the lower supply of land. These restrictions ensure that urban land has a much higher price in both the short and the long run. The market value of land is the main pillar in which profit in real estate investment depends on.

Infrastructure and property development are key determinant of city growth and increase in property value in urban areas (both developed and developing countries). As urban areas in developing countries continue to experience rapidly growing population, there are signs that despite the important role infrastructure plays in physical and socioeconomic development of individuals and communities, and the efforts made in tackling the associated problem of housing need and land /property value keeps escalating. Insufficient infrastructure is one of the major problems facing the housing scheme in many developing counties in the world.

Kakulu (2007) reveals that peri-urban lands severed by pipeline wayleaves exhibit a development pattern similar in shape to a spider's web with isolated pockets of land bounded on all sides by pipelines. She further recommends the adaptation of this 'spider's web' phenomenon as a development model that can manage the land use requirements of the Master Plan, in harmony with existing land use pattern and thereby unlock land value potentials in Igbo Etche.

This study is focused on the impacts of infrastructure development on land values in selected neighborhoods in Greater Port Harcourt City (the case of Igbo Etche, Peter Odili Road and Rukpokwu) within the Port Harcourt City as against other areas with the same proximity from Port Harcourt. The study explored and examined those factors that may be responsible for the development or underdevelopment of the area. The study investigated the impact of infrastructure development on land values in select neighborhoods in Greater Port Harcourt City. It is imperative to understand how infrastructure development or provision within a given neighborhood contributes to increase or decrease in land value. Although, several authors and scholars have examined the impacts of infrastructure development in other aspects, there is needing to further investigate those specific impacts of infrastructure development on land value.

The study proposition is that the impacts of infrastructure development/ provision on land value will lead to city growth and development (expansion) of the Greater Port Harcourt City areas thus decongesting the main city.

a. CONCEPTS IN INFRASTRUCTURE DEVELOPMENT AND LAND VALUE

Infrastructure availability forms the basic physical and organizational structure needed for the operation of a society like industries, buildings, roads, bridges, health services, governance and so on. It is the enterprise or the products, services and facilities necessary for an economy to function (Sulivan and Sheffrin, 2003).The term infrastructure refers to the physical structures that support a society, such as roads, water supply, sewers, electrical national grids, telecommunications, and so forth, and can be defined as "the physical components of interrelated systems providing commodities and services essential to enable, sustain, or enhance societal living conditions" (Fulmer, 2009).

Several scholars in the field of economics have attempted to differentiate infrastructure, superstructure and supra-structure all in an attempt to contextually situate the concept of infrastructure. Nijkamp (2000) described infrastructure as material public capital (such as roads, railways, ports, pipelines etc.) and supra-structure as immaterial public capital (such as knowledge networks, communication, education, culture etc.). Although, a little overlap and not too clear boundary is observed in the various classifications, it however showed that attempts have been made to define and classify those foundational components that make for a functional economy.

According to Section 36 of the Infrastructure Concession Regulatory Commission (Establishment) Act, (2005) of Nigeria, infrastructure include development projects which, before the commencement of the Act, were financed, constructed, operated or maintained by the government and which, after the commencement of the Act may be wholly or partly implemented by the private sector under an agreement pursuant to the Act including but not limited to power plants, highways, seaports, airports, canals, dams, hydroelectric power projects, water supply, irrigation, telecommunications, railways, interstate transport systems land reclamation projects, environmental remediation and clean-up projects, industrial estates or township development, housing, government buildings, tourism development projects, trade fair complexes, warehouses, solid wastes management, satellite and ground receiving stations, information technology networks and database infrastructure, education and health facilities, sewerage, drainage, dredging, and other infrastructure and development projects as may be approved, from time to time by the Federal Executive Council.

Nijkamp (2000) observed that urbanization has accelerated at much faster pace than the situation in advanced industrial countries during the period of the rapid industrial development in Nigeria. Urban expansion could be hinged to a lot of factors such as increasing opportunity for people, high level of industrialization, availability of link roads, water and good means of transportation thus improving the economic growth of cities.

It is based on this that Olujimi and Bello (2009) opined that the increasing demand for properties in the urban centers would continue to attract the interest of real estate developers.Oyebanji (2003) identifies seven factors that affect property values. These factors are; population (increase or decrease), changes in fashion and taste, institutional factors (these are factors relating to people's culture, religious belief and government action),

technological factors, economic factors, location and complementary uses. Olusegun (2003) also identifies these factors under three major groups as external factors, internal factors and economic factors.

Litchfield (1974) observes that areas with basic facilities such as access roads, good drainage, electricity, public water supply and telephone attract high property values. Aibangbee (1997) further explains that accessibility which is a direct consequence of a good road network, in turn leads to high rental values of locations with greatest accessibility advantages. In a situation where all properties are accessible via motorable road network, such properties will enjoy high rental values conferred by virtue of accessibility.

In economic terms, land is a complex object endowed with dual characteristics. First, land is a commodity in the usual economic sense. But, second, unlike other commodities, land is completely immobile. Hence, each piece of lands is associated with a unique location in geographic space. These dual characteristics of a land induce strong no convexity in consumers' preferences. The spatial characteristics, the externalities, and intervention make an analysis for the land market rather complicated (Elbarmelgy Shalaby, Nassar & Ali, 2014).

Land use is considered one of the essential factors influencing the pattern of urban development. The limited space within cities combined with the growing space requirements for various purposes outlines the framework of the struggle for land for different purposes and by different vested interests. The difficulties in land use planning result from the contradiction between the rapid technological changes which influence urban growth and the slow process of planning which allocates land use (ElBarmelgy et al, 2014). Land use in the city has a unique structure, mostly due to the interactions between its spatial configuration and functions, developing into a patchwork of functional regions of different forms.

Land value can be defined as the monetary cost of the land. It can be the cost of undeveloped land or a built property, but land value is primarily associated with a vacant plot. When discussing the importance of a built structure the term "property value" is more appropriate (Ashish, 2018).Land value is the value of a piece of property including both the value of the land itself as well as any improvements that have been made to it. Land values increase when demand for land exceeds the supply of available land or if a particular piece of land has intrinsic value greater than neighboring areas (e.g., oil can be found on the land). (https://www.investopedia.com/terms/l/landvalue.asp Accessed 30 July 2021). Land value is the measure of how much a plot of land is worth, not counting any buildings but including improvements such as better drainage. When a landowner pays taxes on her real estate, part of what is taxed is the value of the land, in addition to whatever structures on it.

The main objective of the study was to identify the specific impacts of infrastructure development on land value in selected neighborhoods in Greater Port Harcourt City as against other areas with same proximity from the Port Harcourt City.

b. METHOD EMPLOYED

The study adopted the Case Study research design with emphasis on descriptive statistical and contextual analysis of limited number of questionnaires and interview conducted in line with the research topic. Descriptive and exploratory in nature, the simple random sampling technique was used in data collection. This approach allowed for inference with a representative sample of a large population with same characteristics and attributes thus reaching a valid conclusion which is fairly replica of the whole population. Using the Taro Yamane formula, a total of 400 sample size was adopted from the 2006 National Population Census of the study areas with a population of 1,977,661which is the basis of selecting respondents for the study. The 400-sample size was further distributed to respondents on the selected streets within the selected study areas. A reconnaissance survey was conducted by the researchers to observe streets with more property development as against those with less development with. The respondents include; residents and property developer and investors operating and residing in the selected areas in Greater Port Harcourt City (Igbo Etche, Rukpokwu and Peter Odili Road) in Rivers State with experience and knowledge of the subject.

The study used the mixed research method (qualitative and quantitative) with the use of interview and questionnaire as data collection method in the selected neighborhoods. Collected data was analyzed using simple descriptive statistical tool (frequency, percentage), image analysis, content and interpretative analysis. Analyzed results are presented in tables, and text.

II. RESULTS

Statistical, image analysis and content analysis of the responses from residents and property developers and investors in the field of study documents the impacts of infrastructure development on land values as follows;

3.1 Impacts of Infrastructure Development on Surrounding land Value

The availability of basic infrastructure results in increase in land values, as there are access roads, electricity supply, etc. which in turn attracts property developers and investors thus causing a rapid increase in

surrounding land values. It causes a boom in the rental values of real property and the real estate market growth. It discourages land speculation and enhances even development within the neighborhoods. Lack of basic infrastructure facilities discourages property development thus making reduction in land value within the selected neighborhoods as the study discovered

3.2 Impacts of Property Development on Surrounding Land Values

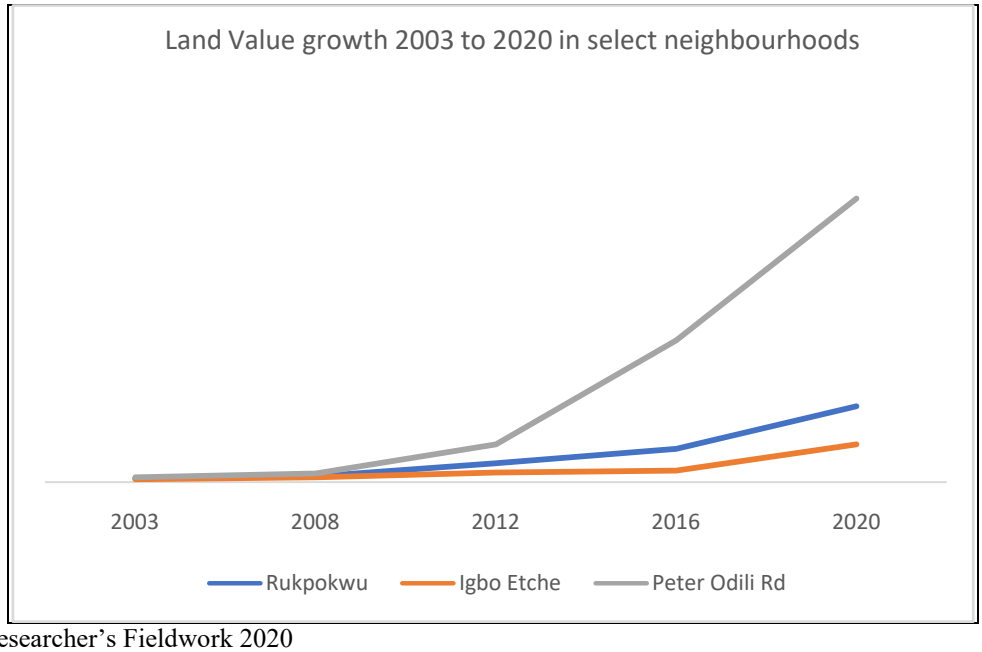
The impact of property development on surrounding land value is that it encourages other plot owners to commence development which in turn ; increases land value. Property development boosts investor confidence which leads to increased interest by many buyers willing and ready to buy the available. This fosters competitive bidding as the person with the higher purchase power gets the available land; increase in standard of living. This is evident as property development attracts other forms of business and serves as a source of income to artisans and craftsman within the neighborhoods. Property development also discourages land grabbing therefore, improving land values.

3.3 Land Value Trends from2003 to 2020in Select Neighborhoods

The findings revealed that land values per 450m^2 plot from a base year of 2003 shown in the table and chart below were similar in value across the three neighbourhoods in the study. As the years progressed, a gap developed between the various neighbourhoods and continued to widen until the field surveys conducted in 2020. For instance, in 2008 the land values for Rukpokwu stood at N600,000 on the average; Igbo Etche at N500,000 and Peter Odili sold for N900,000 respectively.

Further changes occurred within the next few years in 2012 which saw land values grow, and average offer for Rukpokwu was N2,000,000; Igbo Etche went up N1,000,000 and Peter Odili for N4,000,000. As at 2016 the demand for Rukpokwu and Peter Odili was much higher than Igbo Etche showing significant disparity in land values. While Rukpokwu and Peter Odili neighbourhoods grew exponentially, Igbo Etche had disruptions in land values.

Land Value Trends in Selected Neighbouhoods (2003-2020			
Year	**Rukpokwu**	**Igbo Etche**	**Peter Odili Rd**
2003	N400,000	N300,000	N500,000
2008	N600,000	N500,000	N900,000
2012	N2,000,000	N1,000,000	N4,000,000
2016	N3,500,000	N1,200,000	N15,000,000
2020	N8,000,000	N4,000,000	N30,000,000



Source: Researcher's Fieldwork 2020

The year 2020 saw an even wider gap in land values between the studied neighbourhoods. Land values for a plot of land in Rukpokwu grew to as high as 8 million Naira, while Igbo Etche sold for up to 4 million Naira in some areas. The Peter Odili neighbourhood maintained the lead averaging at over 30 million Naira per plot of land as an average. Land values are distinguished in most cases by the presence of good infrastructure, little or basic infrastructure affecting demand and supply in the neighbourhoods mentioned above. What distinguishes these three neighborhoods is the level of infrastructure available.

The result shows that the rapid increase in land value within the selected neighborhoods reveals that land value rise and property development is not necessarily tied to the presence of basic infrastructure within the selected neighborhoods rather neighborhoods with low land value attracts property development than the neighborhoods with high land value.

3.4 Providers of Infrastructure within the Neighborhoods

Providers of infrastructure	Rukpokwu	%	Igbo Etche	%	Peter Odili Rd	%
Federal Government	5	3.57	10	9.09	2	1.67
State Government	76	54.29	47	42.73	56	46.67
Corporate organizations	5	3.57	9	8.18	8	6.67
NGO's	1	0.71	10	9.09	30	25.00
Private individuals	29	20.71	19	17.27	8	6.67
Residents	4	2.86	3	2.73	10	8.33
Landlord association	5	3.57	9	8.18	4	3.33
Community	15	10.71	3	2.73	2	1.67
Total number of respondents	**140**	**100**	**110**	**100.00**	**120**	**100**

Source: Researcher's Fieldwork, 2020

The analysis on the table above on the providers of basic infrastructure within the selected neighborhoods, the result shows that the Federal government only provides 3.57%, 9.09% and 1.67% respectively in Rukpokwu, Igbo Etche and Peter Odili Road. While the State government provides 54.29%, 42.73% and 46.67% of basic infrastructure in the study area, corporate organizations provides 3.57%, 8.18% and 6.67% of basic infrastructure in Rukpokwu, Peter Odili and Igbo Etche respectively, NGO's provides 0.71% in Rukpokwu, 9.09% in Igbo Etche and 25.00% within the Peter Odilineighborhood, whereas Private Individuals, Residents, Landlord Association and Community provides 20.71%, 2.86%, 3.57% and 10.71% in Rukpokwu, 17.27%, 2.73%, 8.18% and 2.73% respectively in Igbo Etche and 6.67%, 8.33%, 3.33% and 1.67% in Peter Odili road neighborhood.This analysis implies that the State Government is the major provider of basic infrastructure within the study area, followed by NGO's for Igbo Etche and Peter Odili, Private individuals for Rukpokwu and Peter Odili and Federal government for Igbo Etche.

III. DISCUSSION

The analysis of the findingsreveals that infrastructure development affects surrounding land valueswhich promotes real estate development and investment. The study revealed that the availability of basic infrastructure in an area result in corresponding increase in surrounding land values, e.g. good access / paved road, electricity supply, healthcare, security and police.A typical example is the rapid increase in land value in the Peter Odili road area and SARS road in Rukpokwu whencompared to that of Igbo Etche because of the availability of basic infrastructure within these areas. It also results to an increase/boom in rental value of real property, as too many people will be going the small available property thus making property owners to increase the rents passing on their property. The analysis of findings revealed how the lack of infrastructure development negatively affects land values in the selected neighbourhoods.

1. Insecurity:Lack of security posts and police presence leads to high rate of kidnapping, armed robbery and burglary in some neighbourhoods which discourages real estate investors and developers from investing or

developing within these areas which in turn impact negatively on land values as people are scared away for lack of safety and security of lives and property which makes land values stagnant or with little increases in value.

2. Basic Infrastructure:Lack of this basic infrastructure also scares away property development as contractors, engineers and workers on site do not feel safe carrying out their work. Furthermore, lack of basic infrastructure in any neighbourhood leads to poor quality of life and the environment as a result of lack of well-defined road networks, electricity supply, good drainage and sewages, and waste disposal systems. On the contrary, the study reveals that despite lack of some of basic infrastructure in the selected neighbourhoods, like Igbo Etche and some parts of Rukpokwu, like constant electricity supply, healthcare and tard road with good drainage and sewage disposal, there is still and increase in property development and,but land values have remained somewhat constant.

3. Land Grabbing Challenges:Lack of basic infrastructure in an area neighbourhood results in increase in land grabbing and speculation this is evident where individual with the financial power and ability amasses to themselves large acres of land waiting for basic infrastructure to be provided for in the neighbourhood (Igbo Etche and fringes of Rukpokwu) thus depriving others who do not have the financial power access to land thus holding such land in expectation of a future rise in value before releasing it. This factor at a long run discourages property development and investment, as only the money bags can afford such land for development.

IV. CONCLUSION

Infrastructure development is a key indicator in measuring economic growth and development of any nation . Thus, there is a strong relationship between infrastructure development and land value in any given location or economy. Increase in infrastructure development results in corresponding increase in property development activities and investment as peoplegenerally preferto live in neighborhoods with better and functional basic infrastructure facilities for convenience, safety and security as against neighborhoods which lack those basic amenities. This movement of people into a neighbourhood with better and functional basic infrastructure facilities leads to an increase in land value within such neighborhood. Infrastructure development has a direct impact on property development, investment and subsequently land value in the selected neighborhoods. This impact is directly proportional that neighborhoods with basic and functional infrastructural facilities grow rapidly resulting to increase property development and investment thereby causing land value within that neighbourhood to rise (the case of Peter Odili Road axis and SARS Road in Rukpokwu). Infrastructure development is considered an effective tool in promoting economic growth and welfare level in any given state or country. Governments at all level should invest to promote the quality of infrastructure and encouraged the private sector to make investment for infrastructure development, as infrastructure development is considered like a public good in all ramifications.

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