

Review

Infrastructure and foreign direct real estate investments in Nigeria

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Received 5 August, 2022; Accepted 30 September, 2022

The infrastructure in a nation is a critical determinant of its economic growth and development as well as the attraction of foreign direct investments (FDI) into such economy. While there are hard and soft infrastructure, the study establishes a link between hard infrastructure and foreign direct real estate investment in Lagos State, Nigeria. A survey conducted on nearly 450 public policy makers as well as real estate developers / experts from around the globe revealed their preference for investing in cities with adequate quality infrastructure. Furthermore, good public transport system and road networks were top in their order of priority. Perhaps for the easy movement of people and goods, which could translate to increase in economic activities. Unfortunately, another secondary empirical data revealed that Nigeria is one of the countries in the world lacking adequate infrastructure. Aside transport infrastructure, other identified infrastructure necessary for the proper functioning of real estate developments which are still deficient in Lagos include adequate electricity power supply, good drainage channels, proper waste management system etc. Nevertheless, the study noted that the current administration in Lagos State is making efforts in closing the infrastructural gap by carrying out various infrastructural projects. However, in order to attract more foreign direct real estate investors to the state and to equally retain the existing ones, the study recommended the development of effective public transportation system complemented by good roads, in addition to the implementation of other views of the global real estate developers/experts mentioned earlier.

Keywords: Hard infrastructure, foreign direct real estate investment, Lagos State, Nigeria.

INTRODUCTION

Availability of adequate and sustainable infrastructure continues to be a key obstacle to growth and development in many developing countries. Aschauer (1990) established that “the quality of a nation’s infrastructure is a critical index of its economic vitality”. Infrastructure such as good road networks, reliable transport system, efficient waste management, functional drainage channels, modern telecommunication facilities, adequate and constant power supply, etc. are the bedrock of a civilized and productive

economy. Therefore, their availability or otherwise can be a major hindrance to the growth as well as the competitiveness of an economy. It is imperative to state that infrastructure could be classified into hard or soft infrastructure (Fung et al., 2005). While hard infrastructure include facilities and amenities such as roads, waste disposal management system, electricity supply, etc., soft infrastructure are in the form of policies which leads to transparent institutions and deeper reforms to drive

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economic growth and development. However, the focus of this paper is on hard infrastructure.

In several African countries, inadequate infrastructure has been found to be a major constraint to doing business (Foster, 2008). This is against the backdrop of the fact that infrastructure is key to an economy's prosperity, as it supports poverty alleviation, sustainable natural environment as well as economic growth.

Collaborating this assertion, Fagbemi et al. (2022) equally submitted that the provision of adequate basic infrastructure in Nigeria is important to the reduction of the effect of poverty on the citizenry as it would possibly result in better performance and enhance productivity in the public space. The Nigerian government had always come up with policies aimed at enhancing infrastructural development and sustainability in the country (Ogunjimi and Amune, 2017) for its economic growth and development, yet the challenges in infrastructure still persist.

China is the fastest growing economy in the world in the last few decades and research has traced its growth to be majorly as a result of the country's physical infrastructure (Sahoo et al., 2012). According to their study, the significance of the positive contributions of infrastructure to China economic growth outweighed the contributions of both public and private investments. Similarly, Aschauer (1990) argued that empirical evidence has suggested that infrastructural development was the main catalyst to the robust performance of the United States of America (USA)'s economy in the "golden age" of the 1950s and 1960s.

This has promoted the steady growth of the economy of the nation to be the largest in the world. Hence, to experience sustainable economic growth especially among the developing nations of the world, the Chinese good news suggests that developing countries ought to design workable economic policies that can improve their physical infrastructure amongst other developments.

Also important in driving economic growth of a nation is the attraction of foreign direct investment (FDI), although, such attraction is a function of different factors such as; political stability, market size, labour costs, ease of doing business, government policies as well as infrastructure, among other factors. In their study, Ogunjimi and Amune (2017) established that there is a long-run relationship between infrastructure and FDI in Nigeria. Similarly, the study by Chakrabarti et al. (2012) also established a significant positive relationship between infrastructure and FDI. The study revealed that FDI inflows increase at a faster rate with increase in infrastructural development. Similar relationships were also highlighted in Fung et al. (2005), Seetanah (2009), Rehman et al. (2011), Behname (2012) and Donaubaauer et al. (2014). Unfortunately, in the study conducted by Donaubaauer et al. (2014) on the quantity and quality of infrastructure in 190 countries of the world as it relates to attracting FDI and improving economic growth from 1990 to 2010, Nigeria was ranked

among the least nations. Consequently, Nigeria's eagerness to grow and develop economically depends largely on the attraction of FDI. However, this remains a major challenge due to inadequate investment in infrastructure. Majority of the available infrastructure are either in deplorable conditions, inadequate or outdated. In particular, electricity supply (which is at an abysmal performance level in the country) was found to be a great influence in attracting FDI in the long-run (Ogunjimi and Amune, 2017). Ironically, every sector of the economy which could attract FDI into the country is affected by the poor electricity situation, including the real estate sector.

Ajibola et al. (2013) and Jimoh and Ige (2017) established the strong relationship between infrastructure and real estate. They described infrastructure as a catalyst for attracting people to a particular neighborhood. In addition, infrastructure enhanced property values and as such, encourages investment in real estate. However, with regards to the inflow of direct foreign investment into the real estate sub-sector in Africa, and Nigeria in particular, the situation is not encouraging.

According to Rothenberger (2010), a specific and strong barrier to inflow of foreign real estate investments amongst sub-Saharan African (SSA) countries (Nigeria inclusive) is the negative image of the region as a result of long period of disastrous government policies. Inclusive of inadequate investment in infrastructural facilities, this creates a serious investment stigma. Factors such as transparency, political stability and high population rate have been identified as drivers that could attract foreign real estate investors to a host country, although infrastructural facilities remain the most important (Baum, 2008; Salem, 2011; Salem and Baum, 2016).

All over the world, government investment in infrastructure is the largest, and it goes a long way in determining the quality of life of the citizenry. As such, infrastructure is seen as the backbone and the key driver of socio-economic development of any country. Economic growth, increased productivity, increased real estate values, as well as other significant positive multiplier effects can be achieved through strategic and sustainable investments in quality infrastructure in a society. Hence, every nation strives to develop sustainable infrastructure to attract and enhance investments, and to also make living comfortable. According to the Global Competitiveness Index (2017) report, Nigeria's infrastructural rating is worse. Out of 137 countries surveyed, Nigeria ranked 132nd in infrastructural adequacy. Specifically, critical infrastructure such as transport infrastructure, and electricity/telephony infrastructure ranked 128th and 132nd, respectively. Furthermore, the report identified inadequate supply of infrastructure as the most problematic factor for doing business in the country. It is against this backdrop, that the current government of Lagos State, Nigeria's commercial and economic capital is striving very hard to overcome the challenges of inadequate infrastructure in

the state.

According to the state government, the population of Lagos State is estimated to be about 24 million, and studies have shown that about 86 people migrate into the state every hour (Odumade, 2017). Furthermore, it is projected that by 2050, the population of Lagos would have grown to about 36 million, which is likely to make it the sixth largest city in the world. Consequently, there is need for adequate infrastructural development to meet the living requirements of this large population, and also to enhance investments in the state.

However, the challenges confronting the state are enormous. For instance, statistics from the state government showed that presently, the state requires one million housing units every year for the next five to ten years to fix its housing deficit. As at 2015, Lagos had 16,000 km of road network, but with a human traffic of over 7.5 million people and 2.8 million vehicles on daily basis; the electricity power required in the state is over 10,000MW, but the city receives less than 2,000MW. The state generates 13,000 tons of solid waste on daily basis and its Water Corporation supplies 210.5 million gallons of water daily, as against the 750 million gallons needed on a daily basis. Among other are challenges and pressures on the physical (hard) infrastructure in the state (Odumade, 2017).

Macomber (2017) identified increasing urbanization, increasing scarcity of financial resources as well as inadequate infrastructure investment by most governments as the three major obstacles working against economic development around the globe, including Lagos State. Consequently, there is increasing public-private-participation (PPP) in infrastructural development worldwide. When critical infrastructures are available in a commercial city like Lagos, value of lands and properties will be enhanced, leading to high returns on property investment (Nevin, 2017). Similarly, foreign investors would be attracted to invest in the real estate sector of the state.

But as it is currently, important infrastructure such as electricity, adequate waste management facilities and others are still a major challenge for property investors in the city and by extension in the country at large. According to NBS Report (2022), Lagos attracts the largest shares (68.66%) of FDI inflow into Nigeria while Abuja came distant second by attracting 29.57%. The State has always been in the lead; while the FDI inflow shares of Lagos out of the total that came into Nigeria in 2019 was 73.67%, same was 85.78% in 2020. Thus, this buttresses the need for the government (federal and state) to pay urgent attention to the provision of adequate infrastructural in the State.

In discussing the critical role of infrastructure in attracting foreign direct real estate investments to Lagos, Nigeria, this paper pursues the following objectives;

1. To examine the current state of real estate related

infrastructure in Lagos.

2. To highlight the importance of infrastructure to real estate investment.
3. To analyse the importance of infrastructure as a driver of foreign direct real estate investment.

LITERATURE

Conceptual and theoretical review

According to Soyinka et al. (2017), infrastructure was described as a network of interrelated basic facilities and services that provides adequate environment (comfort level) for human living. The concept of living encompasses all human activities such as living in an area, working, recreation, schooling, and travelling from one point to another. An infrastructure cannot give maximum comfort in isolation, so various infrastructures are developed to complement one another, in order to enhance the much desired good living conditions. Hence, in complement with one another, infrastructure provides commodities and services essential to enable, sustain, or enhance societal living conditions as well as the needed economic prosperity.

However, due to the huge capital needed to develop infrastructure, there is always need for the government to involve the private sector in such development. However, there is usually a conflict between the political classes that is in government and holds the political power, and the private sector that holds the economic power. To understand this interplay of political and economic forces, political scientists explained it with the "regime theory" (Barreca, 2015). The theory gives insight on bridging the gap that exists between the government and private sector in providing the much needed infrastructure. According to the theory, several arrangements known as the regime are made to close the gaps between the two forces, to achieve the ultimate goal of providing infrastructure. Furthermore, the theory proposes the inclusion of the lowest level of governance, the local government, as well as businesses at the local level. With the strength of each of these actors, investors try to understand the potentials of providing infrastructure and the stability in the system. In Nigeria, there exists collaboration between the government and the private sector in the provision of some infrastructure within the capacity of such private business enterprise. It is regarded as their "cooperate social responsibility" (CSR). For instance, Zenith Bank Plc. was solely responsible for the reconstruction of 1.3 km Ajose Adeogun dual carriage road on Victoria Island, Lagos, Nigeria. There is collaboration between the federal government of Nigeria and Dangote Group in the reconstruction of 35 km Apapa-Oworonshoki Expressway that leads to the nation's busiest seaports. Similar collaborations are going on in other parts of the country in the provision of power infrastructure as well as other infrastructure.

Nevertheless, all over the world, government remains the major investor in infrastructure, that is, public good.

To buttress the stated assertion, Frischmann (2005) developed the theory of infrastructure that threw up strong economic arguments for infrastructure to be provided and managed by the government. The theory brings into focus, the social value of common infrastructure by explaining how infrastructure could generate value for its users and the society at large. Arguing further on the demand-side analysis of infrastructure, the author submitted that infrastructural resources should be managed as "commons", that is by the government and for the people. The critical nature of infrastructure as well as its importance, forbids that it should be more in the hands of the private sector, that are profit oriented, but more with the government. Schneider and Jager (2001), in their democracy theoretical perspective on infrastructure, opined that there is a strong link between a democratic state under the rule of law and the availability of critical infrastructure in such state.

Though infrastructure is critical in an economy, this study is of the view that government alone should not be investing in infrastructure, but may adopt the PPP arrangement, or if possible like the telecommunication infrastructure in Nigeria, leave it solely for the private sector to provide while it (the government) plays the regulatory role. More so when it is a fact that infrastructure are highly capital intensive and government alone, especially in Nigeria with dwindling revenue may not be able to provide it. For instance, a study by CDC Group (2021) reported that a large scale water provision infrastructure was successfully financed and managed through the PPP arrangement in Kigali, Rwanda. And such successful interventions through PPP arrangements are evident in several other cities in Africa.

Relative importance of different infrastructure to real estate investment

Attempts have been made to classify real estate as infrastructure or compare land development/improvement with infrastructure, but Finkenzeller et al. (2010) concluded that though infrastructure and real estate may have common characteristics, they nevertheless constitute different asset classes. Their argument is sustained by the definition of infrastructure as a network of interrelated basic facilities and services which provides conducive and convenient environment for man to live (Soyinka et al., 2017), work and carry out other activities for his existence. Hence, infrastructure makes real estate to function optimally thereby giving comfort to its (real estate) users. However, due to the huge financial costs of developing infrastructure, and the limited resources available to every government worldwide, priorities must inevitably be established. In setting the priorities, the relative importance of each needed infrastructural facilities and services

should be put into consideration. Consequently, the question "what projects are most important in the short- and medium terms?" should be answered (Marcelo et al., 2015). Furthermore, they argued that selection of projects to carry out depends on the policy goals of the government as well as the severity of the problems on ground.

In the study carried out by Kilcarr (2014) on the choice of infrastructure that is of priority to urban real estate investors in taking their real estate investment decisions; transportation systems, telecommunication networks, and utility systems were ranked in that order as their top most influencing factors. Furthermore, ranked to receive the topmost priority in the transport sector is the public transit system, which includes bus and rail transportation networks. They were followed closely by roads and bridges, and pedestrian facilities. Effective transportation system is highly required in a city for ease of movement of people and goods, which could translate into increase economic activities. As such, useful economic man-hours will not be wasted in traffic, as being experienced in various cities in Nigeria, especially in Lagos. After studying the transport infrastructure in Lagos, Otegbulu (2011) affirmed the deplorable conditions of roads in the state which made residents to suffer consequential damages on their vehicles, and loss of useful man-hours. This was further supported by Atubi (2013) submission that the transport infrastructure modes in the metropolis are not well co-ordinated, planned and managed. Same was the view of Soyinka et al. (2017), who also added that the infrastructure is usually ineffective when available. Consequently, the impact of transport infrastructure on the socio-economic growth of Lagos in particular, and Nigeria in general is not encouraging. However, if adequate funds are available, development or maintenance of these entire infrastructures could be embarked upon by the government. Nevertheless, with paucity of funds, they have to be prioritized.

It is against this backdrop that the Lagos State government has embarked on massive investment in the transportation system which includes the 27.5 Km light rail line from Okokomaiko to Marina, Bus Rapid Transit (BRT) with dedicated corridors around the city, as well as construction of roads and bridges (flyovers and pedestrians) within the metropolis.

Similarly, the federal government is embarking on massive construction of standard gauge railways to connect all state capitals in the country. This has commenced with the ongoing construction of 135Km standard gauge railway from Lagos to Ibadan, Oyo State, South-Western Nigeria (Table 1).

Table 1 shows yearly improvement in investment in road infrastructure in the country, except for year 2011 and 2012 that it was static and thereafter decreased respectively. It however improved in 2013 to 7.85%.

Marcelo et al. (2015) came up with a framework for taking decisions on which infrastructural projects to embark upon. These frameworks are anchored on their

Table 1. Shows the contribution of road infrastructure to Nigeria's gross domestic product (GDP) from 2009 to 2013.

Year	Total GDP (₦m)	Contribution of road transport (₦m)	Growth rate of road transportation (%)
2009	718,977.33	17,534.51	6.8
2010	776,332.21	18,727.95	6.9
2011	834,000.83	20,017.89	6.9
2012	888,893.00	21,394.38	5.85
2013	9,291,515.40	23,073.84	7.85

Source: Adapted from Nedozi et al. (2014).

principle of prioritization, and logic/rationale of prioritization.

They identified accuracy, practicality, political feasibility, and suitability as the four primary decision support principles that should suggest how prioritization should be done. Furthermore, the parameters behind the rationale/logic of project prioritization include; appropriate evidence, comprehensiveness, effectiveness and value, legitimacy, and opportunity. In prioritizing and ranking infrastructure in the transport and water sectors, the multi-criteria methods have been applied. While a different number of methods such Cost Benefit Analysis (CBA), Analytic Hierarchy Process (AHP), Multi-Attribute Utility Theory (MAUT), Preference Ranking Organization METHod for Enrichment of Evaluations (PROMETHEE), Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS), and the Elimination Et Choix Traduisant la REALite {Elimination and Choice Expressing Reality} (ELECTRE), or their combinations have been used in comparing road and bridge projects, water resource management options, and water supply systems. Similarly, Multi-Criteria Decision Method (MCDM) has equally been utilized to make decisions on power supply and urban development.

Foreign direct (Real Estate) investments injected into Lagos economy

It was revealed by EY- AAI report of 2017, that in 2016, Nigeria was able to attract a meagre 7.5% (51) of FDI projects that came into Africa, as against South Africa's 20.6% (139), Morocco's 12.0% (81) and Egypt's 11.7% (79). According to Nigeria's National Bureau of Statistics (2017), FDI into Nigeria was \$1279.43m in 2013, \$2277.31m in 2014 and \$1446.62m in 2015. The decrease in 2015 was as a result of the deregulation of the foreign exchange market as well as the recession in Nigeria's economy. Furthermore, the report stated that Lagos State accounts for over 90% FDI capital inflow into Nigeria.

Foreign funds coming into the real estate sector of the Nigerian economy are from investors in developed countries and emerging markets such as South Africa etc. (Onyekwelu, 2017). Such companies include Resilient Africa, Actis, Hyprop, Attacq, RMB etc. And their

destination is majorly Lagos (NBS, 2022), the economic and commercial capital of Nigeria which has a huge population. They invest in large prime development projects that yield high returns. It is pertinent to note that the sector is still undersupplied in the State; hence there is need for improved foreign direct real estate investments in Lagos in particular, and in Nigeria at large.

Linkage between infrastructure and foreign direct (real estate) investment

According to Fung et al. (2005), the availability of infrastructural facilities in a nation usually results in the attraction of FDI into such economy. In its report, EY-AAI - Ernst & Young- Africa's Attractiveness Index (2017) identified infrastructure and logistics as one of the six broad pillars that act as key determinants for choosing investment location in Africa. Nigeria ranked 14th in her investment in infrastructure and logistics out of; the 25 nations surveyed in Africa. Hence, the country was not among the 1st ten nations ranked as being the most attractive investment destinations on the continent. Infact, Nigeria dropped from 15th in 2016 to 17th position in 2017, out of the best 25 countries surveyed in Africa. As earlier stated, the country was only able to attract 7.5% of total FDI projects in Africa in 2016.

A United Kingdom based investment group with offices and investments (including construction and real estate sector) in some Africa countries, the CDC Group (now British International Investment (BII)), having interest in the investment on urban infrastructure by African countries, found out that:

- 1) Indeed, there exist huge infrastructural gap in the urban areas of Africa;
- 2) There is the need for strategic, top-quality infrastructure to be provided in African cities as a key to overcoming the development challenges;
- 3) In providing the needed infrastructure, adaptation to climate change and issue of sustainability should guide their infrastructure investment policies and strategies;
- 4) High priority should be accorded infrastructure for water provision and waste management in African cities, and possibly government should consider commercializing

these important infrastructure for sustainability purposes; 5) And lastly, that the Bus Rapid Transit (BRT) transportation system are highly impactful among the low income earners in African cities and should be encouraged (CDC Group, 2021).

METHODOLOGY

The data for the study were derived from secondary sources such as the Global Infrastructure Investors Association, the World Economic Forum data base, Nigeria's National Bureau of Statistics (NBS) data, EY-African Attractiveness Index report etc.

DISCUSSION

It has been established in this study that the general infrastructural situation in Lagos especially transport infrastructure is worrisome and needs urgent attention (Otegbulu, 2011; Atubi, 2013; Soyinka et al., 2017).

A survey of nearly 250 real estate public policy makers, and more than 200 senior-level private developers, investors and real estate advisers around the globe carried out by Urban Land Institute and EY (2014) revealed that infrastructure played a vital role in attracting real estate developers and investors anywhere in the world for investment in real estate due to the following reasons:

- 1) Quality infrastructure attracts real estate investment;
- 2) Improved transport infrastructure is of the highest priority to real estate investors;
- 3) Willingness of the public to pay for infrastructure is significant and required for sustaining infrastructural provision and maintenance over time;
- 4) Infrastructural funding and financing should be a joint arrangement between developers and government;
- 5) Long-term management and maintenance of available infrastructure should be of concern to the government and private investors alike.

Although the Lagos State government under the current administration is making frantic efforts towards providing needed infrastructure in the city, especially transport infrastructure. In the same vein, efforts should be geared towards boosting electricity supply, proper waste management, provide CCTV cameras for security purposes, street lights, construction of good drainage channels etc. in the state. For instance, the perennial flooding of highbrow areas of Victoria Island, Ikoyi and Lekki-Ajah axis seen as the toast of foreign real estate investors in the State, does not give foreign investors the confidence to bring in their capital to the State. Same with the epileptic power supply in the state, and the country at large.

The Global Infrastructure Investors Association (GIIA,

2021) in its survey of 28 sample countries from all the continents of the world including Africa, highlighted the basic infrastructure that are expected by investors to be made priority for investment by a country. In order of importance they are: water supply and sewerage; solar energy infrastructure; flood defences; new housing supply; pavements, footpaths and pedestrian areas; the local road network; digital infrastructure such as high speed broadband; rail infrastructure - track/stations; wind energy; motorway/major road network; cycle route/lanes/facilities; electric vehicle charging infrastructure; nuclear infrastructure to generate energy; airports. These infrastructures are still not adequately provided in Lagos State/Nigeria.

Furthermore, according to the global competitiveness report of 2017-2018 (World Economic Forum, 2017), Nigeria ranked 125 out of total 137 countries that were surveyed globally. The country scored 3.0 out of total score of 7.0. This means that the country cannot compete globally with other countries in aspects such as investment, thereby contributing to the limitation of the growth and productivity of the country.

Lagos State/Nigerian government should therefore endeavor to give high priority to the above listed infrastructure in order to make life and business comfortable for the citizens and investors respectively. If adequate quality infrastructure is to be provided along with a sustainable plan towards their management/maintenance, the above report from the surveyed real estate experts could be adopted by the state government to make the city system work better in order to attract more foreign direct real estate investors to the State.

CONCLUSION

The priority of every good government is to improve the wellbeing of its citizenry, and this objective can be achieved by developing needed and adequate infrastructure that can support their living conditions and also enhance their investments, including real estate investments. Beyond this, quality infrastructure has been affirmed as a key factor that attracts foreign direct real estate investors to a particular economy, thereby growing the country's foreign exchange reserve. Hence, investments in infrastructure are usually capital intensive, but such investments usually have several positive multiplier effects.

In prioritizing infrastructure, survey carried out among experts in the real estate sector including foreign real estate developers revealed their preference for the development of good public transportation system and roads. And the reason for their choice is not farfetched; as such infrastructure improves the economic activities and the ease of doing business in such economy. With regards to funding, both the government and the private sector should collaborate to fund new infrastructural projects, and

also make good arrangement for their management/maintenance. Nevertheless, users of such infrastructural facilities should be willing to pay for their enjoyment.

If the linkages between infrastructure and real estate investments are well appreciated by the government, it will not only lead to better planning of cities and prioritization of infrastructural projects for the benefit of the people, but also be a driver for attracting foreign direct investments including foreign direct real estate investments, while retaining the existing ones.

Recommendations

- 1) Public-Private-Partnership (PPP) arrangement should be encouraged by government on infrastructural development, and infrastructure should be efficiently managed as business, and not as public good to be enjoyed for free.
- 2) Consequent upon the huge capital requirement for infrastructure development and the limited resources available to every level of government in Nigeria, even if government is to be directly involved in providing some critical infrastructure, there is the need for prioritizing such infrastructure projects in order to ensure that they will have immediate positive impact on the people.

CONFLICT OF INTERESTS

The author has not declared any conflict of interests.

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