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## **Infrastructural Development as a Strategy for Nigeria's Export Promotion**

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### **Abstract**

Given the increase in the degree of interdependence among economies, the role of infrastructure in aiding these interactions between national economies is vital. This study discusses how Nigeria could adopt infrastructural development towards fostering export-led economic growth. Using descriptive and deductive approaches the study concludes that investment in infrastructure is key to enhancing the growth resurgence of a developing country such as Nigeria as infrastructure quality would have a pervasive influence on all areas of an economy thereby increasing productivity and consequently influencing exporting activities. In the light of the above the study while commending government's effort of privatizing public corporations in an attempt to ensuring efficient infrastructure service delivery, the study recommends continuous development of infrastructure in the form of improvements in the provision of complementary transport infrastructure; introducing electronic and other related infrastructure at ports and airports so as to facilitate electronic clearance of export; as well as the stabilization of power supply in the country through constant augmentation of energy distribution channels in order to boost entrepreneurial activities. Sustaining these will go a long way in ensuring that export success is achieved in Nigeria.

**Key Words:** Infrastructural development, Export Promotion, Economic growth

## Introduction

Export promotion is an important part of the commercial policy of many countries. It suggests carrying out an active trade policy. Under contemporary globalization processes, export of goods and services, and economic development, increasingly are becoming positively correlated and interdependent (Grigoryan, 2011). Apparently because of the important role of exports, relevant promotion policies are drawn for development of this sector. Economists behind the export-led growth hypothesis consider that export can serve as an engine of growth. The increases in the output demand of a country through the growth of export allow the exploitation of economies of scale for an economy. The expansion in exports promotes specialization in the production of export products, which in turn boost the productivity level and cause the general level of skills to rise in the export sector. The pace of economic development of a nation presents one of the most essential issues in economic debate. A nation could accelerate the rate of economic growth by promoting export of goods and services (Uddin, Khan, & Alam, 2010).

Revenue obtainable through the exportation of goods and services has become a core component in the modern theories of development. The exportation of goods and services has become paramount amongst measures taken by governments to promote economic development and consequently generate increased per capita income Odularu (2009). Thus, exports are crucial for the economic development of nations. The experience of many countries showed that export revenues play an important role in achieving economic growth in both low-income and high-income countries (Girma, Greenaway, and Kneller, 2004; and Lages and Montgomery, 2004). No wonder then, the government of Nigeria believes that the sustainable path to economic growth lies in export expansion (Akanni, Akinleye, and Oyebanjo, 2009). However, channelling attention towards export expansion prompts the necessity of an enduring and efficient infrastructural base to corroborate this effort.

Infrastructure impacts on the performance of Nigeria's export trade. To a large extent, the infrastructure services supply, quality and cost constitute a factor that boosts competitiveness, transforms the economy and ensures sustained and all-inclusive growth. The World Bank (2006) puts forward that, infrastructure deficit stunts economic growth and reduces international competitiveness. Thus, while economies with inadequate or underdeveloped infrastructure are bound to experience less favourable trade with other nations as well as slow economic growth, those with adequate infrastructure facilities enjoy favourable trade with the rest of the world.

This paper seeks to evaluate the place of infrastructure in the promotion of Nigeria's export trade. The paper is organized as follows. Section 2 takes a look at the theoretical bases for export promotion while section 3 presents an overview of the issues and challenges of infrastructural development in Nigeria. Section 4 discusses the significance of infrastructure to export trade promotion. The conclusions are discussed in section 5.

## Literature Review and Conceptual Linkages

There has been large number of studies on the assessment of why infrastructure is important to enhancing productivity. These studies have presented empirical results estimating the contribution of infrastructure to (output) economic performance. They suggest that the impact of infrastructure investment on productivity represents high rate of return. Amongst the first of these studies is that of Aschauer (1989) in which public expenditure was shown to be somewhat productive, and suggested that the slowdown experienced in the United States' productivity was associated to the decreased investment in public infrastructure. Subsequently, other empirical studies have also illustrated the impact of infrastructure on productivity, including those of Easterly and Rebelo (1993), Canning (1998),

Demetriades and Mamuneas (2000) using OECD data. Roller and Waverman (2001), Demurger (2001), Calderon and Serven (2003).

Easterly and Rebelo (1993) investigated whether or not investments associated to information and telecommunications raised the economic growth rate. Their result revealed that public infrastructure investment is a large fraction of both total and public investment, and infrastructure in transportation and communication is consistently correlated with economic growth. The rate of return in these sectors is 63% and elasticity of change in output with respect to a 1% change in the level of infrastructure is 0.16.

Canning (1998), employing cross-country panel data provided a data set on physical infrastructure stocks, such as telephones, telephones main lines, roads, paved roads, railway lines, and electricity generating capacity. The data contains a description of annual database of physical infrastructure stocks constructed for a cross section of 152 countries for the period 1950 - 1995. Results for this estimation suggest that, telephone and paved roads are generally most promoting economic growth, but in some countries, these are oversupplied or undersupplied. Equally, this indicates that the electric power is generally undersupplied. Similarly, Demetriades and Mamuneas (2000) confirmed the significant contribution of infrastructure to output. Also, Roller and Waverman (2001) using a framework that controls for the possible endogenous growth of infrastructure, found large output effects of telecommunications infrastructure in industrial countries.

In Demurger (2001), the contribution of infrastructure to growth performance in 24 provinces in China was investigated. The results show that infrastructure endowment beside reforms openness, and geographical location explain significantly the difference in growth performance across provinces. The study also noted that transport facilities are an important distinguishing factor in explaining the observed gap in growth. Also, in a Latin America study, Calderon and Serven (2003) using Generalised Method of Moments estimates of a Cobb-Douglas production technology concludes that the three types of infrastructure assets; telecommunications, transport and power have positive and significant contributions to output with their estimated marginal productivity significantly exceeding that of non-infrastructure capital.

In the African situation, few investigations have been made on the relationship between infrastructure and economic performance generally as a result of econometric focus on human capital, and low quality of available data (Estache, 2005). This notwithstanding, Escribano, Guasch and Pena (2009) in their review of some works on the relation between infrastructure and growth, they suggest that Africa's infrastructure gap is an important growth bottleneck with a negative impact on productivity and the overall competitiveness of the region. Usually, infrastructure services are provided for by the government and are generally characterized by high inefficiency, a lack of technological dynamism, and very poor service provision. However, of recent there are notable investment by the private sector in telecommunication and electricity as in the case of Nigeria.

As pointed out already, the main concern of this paper is to offer a robust review of the various channels through which infrastructure quality may impact on productivity and consequently promote exports. Mainly, the methodology adopted uses existing literatures and records relevant to the subject matter. Information and data were sourced from journals, textbooks, newspapers and magazines, official statistics and reports from government and international organizations, as well as the internet. Using descriptive and deductive approaches, conclusions were drawn having critically reviewed salient issues in existing literatures and records.

### Nigeria's Infrastructure: Issues and Challenges

In this study, we refer to infrastructure to include; Information Communication Technology (ICT), power (electricity), and transportation. ICT is vital to participation in the knowledge-based activities that are increasingly important in today's global economy. It is essential for development and for the competitiveness of businesses. Power on the other hand is vital to development. It is essential to producing almost all goods and services in any economy. Transportation is a critical infrastructure. Its performance is of paramount importance for the competitiveness and success of export-oriented businesses in an economy (Anderson, Frederic, and Muller, 2011). These facilities in Nigeria are highly inadequate on the one hand and on the other, in deplorable state due to poor maintenance culture. There is irregular electricity supply, poor transportation facilities and erratic telecommunication services.

### Information Communication Technology (ICT)

While the development in ICT infrastructure is commendable, it is yet to meet expectations due to poor services delivery and exploitation. Awe (2009) assessed the problems of ICT in Nigeria to include the following:

- i) Low quality of communications and insufficient ICT penetration considering Nigeria's size and population.
- ii) Gap between broadband density and voice telephony. This variation in the nature of access favours the later as broadband density is particularly low. Nigeria must move beyond voice telephony.
- iii) High costs which excludes many from the digital environment. ICT resources are unaffordable to the majority.

It is no wonder then that the Network Readiness Index (NRI) – the propensity for countries to exploit the opportunities provided by ICT, rates Nigeria poorly (see table 1 below). The NRI is a composite of three components: the environment for ICT offered by a given country or community, the readiness of the community's key stakeholders (individuals, businesses, and governments) to use ICT, and the usage of ICT amongst these stakeholders. The NRI ranks Nigeria 90th and 99th in the periods 2008 – 2009 and 2009 – 2010 respectively.

**Table 1: Networked Readiness Index (NRI) for some selected countries**

Country	2008 – 2009 Ranking	2009 – 2010 Ranking
Denmark	1	3
USA	3	5
Singapore	4	2
Malaysia	28	27
Qatar	29	30
Saudi Arabia	40	38
South Africa	52	62
Nigeria	90	99
Zambia	102	97
Uganda	120	115
Chad	134	133

**Source:** Extracts from The Global Information Technology Report 2009 and 2010 in Sulaiman (2010)

Generally, ICT in Nigeria is characterized by relatively high prices for service and frequent and unfavourable changes in contract terms. A number of service providers are not connected to the submarine cable as such there is little competition in the international gateways resulting to infinitesimal effect on costs. This state of ICT distorts the country's trade performance both domestically and internationally, as information is essential in trade and business.

### **Electricity/Energy**

Nigeria has tremendous energy resources in the form of abundant gas, water and mineral resources. Yet, it is highly energy deficient largely due to a long bout of underinvestment and poor planning in electricity infrastructure. However, with the return of democracy in 1999, the administration of Olusegun Obasanjo embarked on an ambitious program to improve the generation, transmission and distribution capacity in the country which in 2005 led to the unbundling of the Power Holding Company of Nigeria (PHCN) into 18 companies (6 generating, 1 transmission, and 11 distribution companies). As a result of some of the initiatives, modest improvements were witnessed in the sector. Of recent, further measures were taken and arrangements concluded on the sale of PHCN to a private firm and plans are ongoing for the privatization of National Independent Power Plants. This is to ensure efficiency proper management against the norms inherent in public corporations.

In spite of all the restructuring in the Nigerian electricity sector, the country falls short in terms of generation capacity, service reliability, and utility performance. Per-capita electricity consumption is only 136 KWh compared to other neighbouring West African countries, such as Ghana and Cote d'Ivoire, which are not endowed with such resources, with per-capita electricity consumption of 309 KWh and 174 KWh respectively. Nigeria generates 3800 MW of electricity as against an estimated demand of 10,000 MW suggesting that about 40% of the population have access to electricity with the rest of around 90 million people living in the dark (Tallapragada, 2009). Power outages are more than 320 days a year, a level many times higher than that found in other African countries. As a result, the percentage of Nigerian firms owning their own backstop generators is 60 percent, again substantially higher than elsewhere in Africa (Foster and Pushak, 2011). This has affected Nigeria's performance in international trade, as manufacturing companies and agricultural processing plants most often run on generators which add to their cost of production, making products relatively more expensive to those of other countries.

### **Transport**

Transportation is important and instrumental to economic development at every level. Nigeria has a fairly extensive landscape with a lot of resource endowment spread over the country which results in the need for movement between places. This has significantly shaped the existing transport infrastructure as well as the development of transport itself. Transport facilities in Nigeria include; roads, rail, airports, and seaports. Over the years, the federal government has consistently accorded a key role to the transport sector in all the country's National Development Plans and Rolling Plans, in appreciation of its development facilitating roles in the movement of people and goods, and the enhancement of economic opportunities in otherwise economically backward parts of the country and in the promotion of socio-political interactions (Adeyemi 2001).

While Nigeria's road transport is arguably the most important element in the country's transportation network carrying about 95 per cent of all the nation's goods and passengers, and has the largest road network in West Africa and the second largest South of the Sahara; the existing railways system was mostly built during the colonial days by the British government. The primary purpose of the railways at the time of construction was the export of agricultural supply of the then northern region to the main

ports in Lagos and Port Harcourt. In the present state, the rail network in Nigeria has a total of 3505Km of single-track route of 10.67mm gauge. The system comprises 2,792km of main lines and 713km of branch lines, thus continuing to be one of the most important means of overland transport constituting about 13% of the transport sector. Nigeria's railways have played an immense role in the country's socio-economic development helping to open up the hinterland, providing impetus for foreign and domestic trade and for agricultural and industrial development and stimulating rapid urbanization (Aderamo, 2013).

Air transport as noted by Adeyemi (2001), has provided, and continues to provide the fastest means of movement of passengers and air cargo in the country. It has a great potential role to play in the economic development of Nigeria. Besides, air transport is regarded by the Nigerian Government as a critical focal point in the effort to open up the country to foreign investors and thereby narrow the existing wide gap between available and required levels of domestic investment capital. On the other hand, the water transport system in Nigeria arose out of the need to make inland water ways navigable prior to when the first motor able roads were constructed and the first rail tracks were laid in Southern Nigeria. In the early development of water transport in Nigeria, it was government's desire to encourage not only the development of all inter-regional water ways but also see to the operation and maintenance of essential marine service in the country. Many companies used the water ways extensively to transport agricultural produce from the interior for export to European markets prior to the nation's political independence. In return, they moved imported goods to the hinterland markets (Abu-Bakr in Aderamo, 2013).

Also, in addition to the inland water transport, is the sea or maritime transport. The rapid expansion of the maritime transport industry is necessitated by the nation's urge to expand its trade to meet international needs. Nigeria now has about 13 major ports organized into four port complexes. In order to ensure efficiency and in line with international development in port management, the Nigerian government adopted the "tool port" management approach and concession in 2005.

These notwithstanding, transport infrastructure in Nigeria are faced with a number of constraints. Nigerian roads are in bad shape with broken down bridges and numerous potholes that make road transport slow and unsafe. This nature of the roads can be attributed to excessive usage due to the underdeveloped nature of the country's waterways and railways which should serve as alternative means of transport, and inadequate funding for road maintenance. The Nigerian air transport is characterized by high ticketing costs, sometimes average local travels costs exceeding international travel costs. The railway network and inland waterways are constrained by the relatively limited usage. This is not unconnected to the poor-quality state of the railways and lack of necessary resources to maintenance facilities of the inland water ways. Perhaps these constitute part of the reasons why the maritime transport in Nigeria with an installed capacity of 35 million tons per year is still under-utilized.

### **Infrastructural Development as a Strategy to Enhancing Export Trade**

ICT, transportation, and energy infrastructure constitute a major share of costs of export-oriented businesses in an economy. Infrastructure services are vital for the operation of enterprises and the society in general. Their efficient organization and delivery is vital to the export competitiveness and success of businesses (Anderson, Frederic, and Muller, 2011). As such, investment in infrastructure is key to enhancing the growth resurgence of Nigeria, as infrastructure quality has a pervasive influence on all areas of an economy. Particularly, gains that will result from improvements in infrastructure include increased productivity and consequently increase in exporting activities.

Infrastructure, especially ICT and services are crucial to participation in the knowledge-based activities that are increasingly important in today's global economy (World Bank, 2009). They impact on

performance of firms in reduced costs of communicating across distance, allowing for a more efficient and effective running of firms' activities. This is a common observation in industrial sectors and activities where physical commodities are being moved across large distances, such as in the management of international importing and exporting supply chains or the coordination of multinational manufacturing activities (The Economist 1999; and Financial Times 1999 in Shefer and McCann 2004). ICT and services are essential for development and the competitiveness of developing any economy's businesses.

Transportation services can be considered as intermediate goods in the private production and consumption processes of firms and individuals (Bell and Feitelson 1990). A robust transportation structure provides efficient and cost-effective alternatives for firms to convey their goods over a given distance. This will enhance the operations of firms in industries involve in the production or shipping of goods across space. Transportation is of paramount importance for the competitiveness and success of export-oriented businesses. Within the transportation sector, ports are one of the most important infrastructure elements for international trade. About 85% of the world's trade distribution relies on sea transportation. For a majority of goods, other methods of transportation, such as land and air, are significantly less viable alternatives. Hence, efficient port services and infrastructure are essential to the competitiveness of export-oriented businesses in developing countries. Measures to introduce and safeguard competition in port services can play a vital role in creating efficiency in port-related services, thereby reducing costs for business users exporting and distributing goods using sea transportation (Brooks and Hummels 2009, and Anderson, Frederic, and Muller 2011).

Railways are another extremely important element in the infrastructure of most countries. Resource commodities including agricultural products, minerals, fertilizers, coal, potash, sulphur, ores and concentrates, chemicals, forest and petroleum products which are essential to developing countries' producers and exporters as inputs for production are typically transported in bulk and over long distances. Where road transport is not a viable alternative, for example due to the size of shipments or the lack of good roads, these shipments are often confined to the railroad industries (Kessides, 2004). Therefore, a quality railway system is important for the efficiency of developing country firms using such commodities.

In the same vein, air transport contributes to international trade and the competitive success of user businesses. This is separate from the role of air transport services in meeting consumer demand for tourism related services. It is important to note here that an efficient, effective and reliable air transport infrastructure, especially in developing countries, will ensure the materialization of the gains from trade. This perceived role of air transport has increased as a result of technological innovation, deregulation and enhanced market access for foreign companies, which have made air transport more accessible to a wider set of customers in a broader range of countries (WTO, 2005, and Anderson, Frederic, and Muller 2011).

Also, a constant and steady electricity supply will result to lower costs in production processes thus eliminating costs normally associated with running production on generating sets thereby increasing the competitiveness of firms. It is essential to producing almost all goods and services and its efficient and effective network provides a reliable energy source for industrial purposes which will spur firms' productivity. This new level productivity can then induce exports thereby adding to the foreign exchange earning of the nation.

Moreover, an important factor to the setting up of factories and production plants to produce manufactured goods for export is the attraction of Foreign Direct Investment. FDI can support production, including production of goods and services for export (Laird, Aggarwal, and Huelin 2011).

It has remained a source of relative stability in capital flows to developing countries, in that it makes available capital, technology and skilled labour to help manufacturing in countries. The growth of FDI inflows into developing countries such as Nigeria have the potential of being catalytic to the expansion and strengthening of the production base of semi-processed and manufactured goods in these countries. (Akwetey, 2002). Nigeria, like many other developing countries is trapped in the low saving investment circle. Finance imposes important constraints to firms' expansion. Thus, the country is dependent on foreign capital flow to stimulate economic growth in all sectors of the economy (Dalis, 2012). The experience of East-Asia and China has shown that FDI enhances export capabilities. China's economy has been expanding at double digit rates with expansion in its export sector (World Bank, 2010). Therefore, it is not surprising that developing countries are directing efforts towards creating favourable conditions to attract FDI using bilateral treaties. However, besides other economic and political measures, the provision of infrastructure is vital to attracting FDI for this envisioned growth of the economy. This is because it is a factor that impacts on a firm's locational decision (Guisinger, 1986).

From the forgoing, it can be observed that a sturdy infrastructure improves the competitiveness of the general economy, particularly that of the manufacturing sector and in attracting huge foreign direct investment towards inducing growth in export. The expansion in exports will in turn promote specialization in the production of export products, which sequentially will boost productivity level and improve export revenue.

### **Recommendations and Conclusion**

The significance of export performance to the economic growth and development of Nigeria is immense. It can contribute to faster growth and poverty reduction. Exporting has the capacity of producing economic benefits deriving from efficiency gains associated with exploiting comparative advantages and improved allocation of scarce resources. However, these gains are determined by greater competition, greater economies of scale, and better use of capacity, dissemination of knowledge and know-how, and technological progress. Quality infrastructure facilitates this through its providing/influencing access to inputs/materials, capital, technology, and a range of services which are critical to international competitiveness.

Apart from government's efforts in the privatization of the Power Holding Company of Nigeria (PHCN), National Independent Power Plants, the Nigeria Telecommunication Limited (NITEL), and port concession to private operators; this paper recommends continuous development of infrastructure in the form of improvements in the provision of complementary transport infrastructure such as roads, railways and inland waterways connecting inputs/materials sources with production centres, and connecting production centres with the ports; setting up of Inland Container Depots and Container Freight Stations; and the development of minor ports and jetties of a particular specification to serve exports; as well as introducing electronic and other related infrastructure at ports and airports so as to facilitate electronic clearance of export and import containers. Also, more efforts should be directed at stabilizing power supply in the country through constant augmentation of energy distribution channels in order to boost entrepreneurial activities. These will go a long way in ensuring that export success is achieved in Nigeria.

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