AN APPRAISAL OF TRANSPORT INFRASTRUCTURE FOR THE DEVELOPMENT OF BARO INLAND PORT IN NIGER STATE

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Abstract
Transport infrastructure is one of the most fundamental elements that facilitate the development of connections between regions within a country and between countries. It is essential to the overall efficiency of a port because it ensures access to intermodal transportation. This study appraises the transport infrastructures provided for the development of Baro river port. Primary data were obtained through field survey, observation, structured questionnaires and interview. 375 questionnaires were randomly administered to the targeted respondents to provide relevant detailed information. Data gathered were analyzed using simple descriptive statistical technique such as frequency distribution, percentage, as well as chi-squared. The analysis revealed that transport infrastructures such as rail, road and inland waterways are linked to the port from various locations, though, the physical state are very bad and inadequately provided for. The facilities such as warehouse and offices presently provided for Baro port are attested by the respondents to be in good condition, inadequately provided and non-functional. From the past experience of respondents, there is preference for the choice of rail transport for movement over water transportation due to time and distance. Using chi-squared analysis, results revealed the available infrastructure do not significantly influence the functionality of Baro port as the calculated value (10.35) is less than the critical value (12.59) and also a significant difference in the demand for transportation across different modes with calculated value (52.42) greater than critical value (5.99). Field survey revealed various facilities provided for the port are not in conformity with international standard requirement. It is recommended that the Federal Government should involve the participation of the private sectors to enhance the rehabilitation of the river port and provision of modern facilities for effective operations, and efficient multimodal transport chain should be well developed to facilitate easy hinterland accessibility.

Keywords: Baro, Infrastructure, Inland waterways, Port, Transport.

Introduction

Port development is seen as a catalyst to stimulate economic activity. As such, transport infrastructure is one of the most fundamental elements that facilitate the development of connections between regions within a country and between countries. Port infrastructure is essential to the overall efficiency of a port because it ensures access to intermodal transportation through connections to roads, railroads, and inland waterways. According to Jeevan *et al.* (2015), an inland port is an inland environment of cargo-handling facilities that allows many functions to perform, such as aggregation and delivery, temporary storage, customs clearance, and connecting transport modes. Similarly, (Dinu, *et al.,* 2016) sees an inland river/waterway port area as a zone of a certain size with access to inland water, road infrastructure and/or rail infrastructure with containers handling assets. The Nigerian Inland ports are located on rivers and do not handle deep draft ship traffic (Ndikom, 2013). Port infrastructure involves all port related infrastructure in the ground level, such as, quay walls, bank protection, port basins, berths, anchorages and/or mooring places, waiting areas, crane tracks, rail infrastructure and other publicly used infrastructure assets.

Baro Inland Port was used during the colonial era to transport cargo to the Northern part of the country, though, the port has been abandoned and ceased to function. Inland water transport in Nigeria has long been neglected by both government and the private sector (Obeta, 2014). Baro which is one of the terminals on River Niger was very prominent as feeder to international ports in the 60s and 70s. Although, port activities in Baro inland port have waned down due partly to lack of dredging and the existing physical constraints that inhibit navigability (Olusiyi, 2013). As a result of the situation, the existing transport infrastructure became dilapidated putting the river port in a bad state and condition which no longer serve the immediate environment and the country. Efforts have been ongoing by the Federal Government of Nigeria to rehabilitate and revitalize the abandoned Baro Port and the railway-line linking the Baro Port so that cargoes meant for transportation through the Baro Inland Port can be transshipped to and from the port by rail enhancing landward accessibility to the port. Adequate inland transport infrastructures are necessary for a port to function (Lauratu, 2013). Obeta (2014) averred that inland water transport impact positively on the nation's economy as it reduces haulage costs, expands business opportunities, create jobs and boost the revenue earned by all stakeholders in inland water transport sector. Transport infrastructures such as good road and rail track (landward access), good marine access, berths, docks, quay, storage areas, stacking places, piers, vessels, cargo ownership, cargo handling equipment, warehouses, sheds, cranes, offices and office accessories etc are necessary for a functional port. A major constraint in achieving Nigeria's vision of becoming one of the 20 largest economies in 2020 is the deficit in her investment in transport infrastructure (Sanusi, 2012).

Transport infrastructure is inadequately provided and a lot of funds is needed to improve transport infrastructure capacity in order to meet the demands of transport services. According to Ogwude (2011), there is the need to rebuild, expand and modernize transport infrastructure in Nigeria to meet the needs of the economy. What transport infrastructures are being provided and how this will make the Baro port attain expected standard comparable to international standard are issue of concern. Although, it is often known that most projects conceived do not always meet desired expectation especially during implementation due to severe corrupt practices in Nigeria. There is the need to continuing monitoring project implementation at every stage of execution and to generate report to track its implementation according to plan. For the purposes of developing Baro inland river port into efficient and reliable logistics nodes, infrastructure gaps need to be addressed in a coordinated manner to meet the action plan for it development. It is in this context this study is carried out. The general purpose of this research is to appraise the transport infrastructure being provided for the development of Baro Inland Ports in Niger State, with specific objectives to identify the basic transport infrastructure provided for the port, to assess the physical state and functionality of the infrastructural facilities being provided at the Baro Port and to assess the demand of water transportation in the study area.

Research Questions

The study raises and sought answers to the following research questions:

(i) What are the basic transport infrastructures being provided for Baro port?
(ii) What are the physical states of the transport infrastructure in Baro port and functionality?
(iii) How do the infrastructure being provided meet international standard requirement for a modern port?
(iv) What is the level of demand for water transportation in the study area?

Literature review

Tareq *et. al.* (2020) in their study 'deep seaport and the national development' they expressed that the establishment of seaport has become strategically very critical considering its potential impact on the development and economic growth of the country in such a way that Seaports are capable to create hundreds and thousands of jobs and contribute in earning huge amount of foreign currency. Similary, Owoputi and Owolabi (2020) in their article 'seaport development as an agent for economic growth and international transportation' using time series data and International Ports Reports. The Johansen's co-integration test was conducted to establish relationships between the two variables. The results show that positive development, economic, commercial activities, business, employments, revenue generation, tax, increase in trade and distribution activities occur through seaport development. Hence, there is need for new seaport development in the coastline of Nigeria.

Munim and Schramm (2018) in their study investigate the impacts of port infrastructure and logistics performance on economic growth. Considering 91 countries with seaports, a structural equation model (SEM) was used. The result revealed that it is vital for countries to continuously improve the quality of port infrastructure as it contributes to better logistics performance, yielding to higher economic growth. In the same vein, Emenyonu *et al.* (2016) in their paper on econometric analysis of seaport development and its impacts on the economic growth of Nigeria, using multi-factorial ANOVA and Correlation analysis function to analyse variables such as Trade, Gross domestic product, Logistics performance and Liner Shipping Connectivity. The result revealed that as liner shipping connectivity increases, economic growth increases. Therefore, the quality of port infrastructure and maritime transport are relevant to facilitating international trade and foreign investments. Jouili and Allouche (2016) in a paper estimate the impact of seaports investment on the economic growth. An econometric model of the Cobb-Douglas production function was used to sample Tunisia's economic sectors (manufacturing, services and agriculture) over the period 1983-2011. The results revealed that the public investment in seaport infrastructures has a positive influence on economic growth.

From the above literatures, it is pertinent that provision of infrastructures for development of ports brings about growth in economy of any society. With the efforts of the federal government of Nigeria in revitalizing the inland ports, it is necessary to analyze the provision of transport infrastructures in Baro port for its development.

Transport infrastructure

Olusiyi (2013) described transport infrastructure as those components of the internal architecture of the economy that enables it to consistently grow and provide increasing improvement to the quality of life of the citizenry. Extensive and efficient transport infrastructure is inevitable to the effective functioning of the national economy. The availability of efficient transport infrastructure is crucial to trade facilitation and economic developments, as transport infrastructure and services are essential for reaching world markets, strengthening global integration and attracting foreign investment. Shipping companies, road haulage companies, train-operating companies and many other transport sectors, provide freight transport and logistics service. Their efficient services depend on transport infrastructure (waterways, ports, airports, air and maritime navigation systems, roads, railways) and various kinds of intermodal transfer, storage and terminal facilities for service delivery (Vandu-Chikolo, 2004). It must be noted that the quality of transport infrastructure has implications on the logistics chains as well as on trade and the global competitiveness of any country.

Transport infrastructure development performance

According to Oksana and Irina (2017), different approaches are implemented to evaluate the results of development of transport infrastructure in international aspect. The most famous are as follows:

(i) Assessment of transport infrastructure on the basis of the calculation of the Global Competitiveness Index (GCI), by using the World Economic Forum.

(ii) Evaluation of the supply chain service delivery based on the evaluation of Logistics Performance Index (LPI), which was developed by the World Bank in 2007.

The Global Competitiveness Index (GCI) measures the level of competitiveness of an economy, which is defined as the set of institutions, policies, and factors that determine the level of productivity of an economy. Measurement of the level of transport infrastructure is one of the parts of total evaluation of the GCI. The Logistics Performance Index (LPI) analyses differences between countries in terms of customs procedures, logistics costs and the quality of the infrastructure for overland and maritime transport.

Transport infrastructure and economic growth

Transport infrastructure is one of the most important parts of economic infrastructure. Transport activity, a key component of economic development and human welfare, is increasing around the world as economies grow. Transportation is a reflection of economic activity, in as much as products must be moved to markets (The National Academy Press, 2002). A good transport network is important in sustaining economic success in modern economies (Eddington, 2006). In the developing economies, infrastructure in general and transport infrastructure in particular is seen as an essential prerequisite for economic growth. A number of influential case studies performed by World Bank have demonstrated strong dependency of economic development upon the quality of transport infrastructure, which unlocks the resources of backwards regions such as land and labour for their efficient utilization (Arts *et al.*, 2014). Well-developed transport infrastructure gives certain benefits through certain macroeconomic drivers of productivity. These drivers of productivity are improvement of business activity, innovations and investments, labour market, competition, domestic and international trade globally mobile activity, regional economic development, wellbeing of population, environment safety and health.

According to Oksana and Irina (2017), the interaction between transport infrastructure and economic growth in general can be presented as a simple scheme as shown in Figure 1.

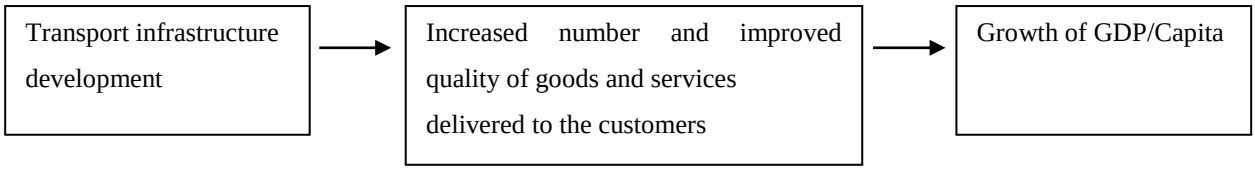

Fig. 1: Transport infrastructure and economic growth.

There is undoubtful relevance of the issue of interaction of the transport infrastructure and the economy, since every day governments, businesses, and individuals make many transportation investments and decisions about the use of transport infrastructure. Well-developed transport infrastructure has a direct impact on the quality and cost of logistics services, because infrastructure allows reducing the time and cost of transportation, it decreases risk and improves quality of logistics services by improving the comfort, safety and security.

The Economic Pull of Port on Development

The mutual benefit of port has been established in the economic development of both local and national which states that in spite of job cuts in traditional port activities such as warehousing, ship repair, stevedoring bunkering, freight forwarding the seaport remains sustainable as it gives a lon- term basis on it functions of many different kinds of allied business are expected to develop in the local area. The (seaport maritime) activities have a relatively close relationship with both urban and port system in Nigeria. The transportation activities facilitate foreign trade, technology in transport system to enhance interdependency among economies in the global world (Owoputi & Owolabi, 2020).

Bottasso *et al.* (2014) analyzed the important of seaports activity on the regional GDP (621 regions) in European regions and focused on it spill-over effects on the neighbouring regions. He indicates that ports tend to increase GDP in the area, where they are located (direct effects) and effect positively the GDP of nearby nations. The seaport development Enable favourable infrastructure for investment Increase country's shipping connectivity Expand higher purchasing Expand goods at lower prices Foreign Direct Investment Foreign Trade Traffic International Trading Firms Logistics and transport companies Value added Agricultural Sector Value added manufacturing sector Economic Growth Value added Services Sector Seaport Development could affect the economic growth through many channels. It is expected that seaports affect economic sectors and afterward the economic growth. The term "Cartelistic for economic growth "includes all the change as regards the demand for goods and services, and contribution to tax revenue, employment that can be attributed directly and indirectly to the transport infrastructure presences (Carlucci & Cira, 2009).

The Need for Port Development in Nigeria

Skov (2015) in his paper titled, Building Economic Capacity through Maritime Infrastructure Development: The APM Terminals Perspective, stated that it is imperative that Nigeria continues to build the necessary maritime infrastructure required to handle the growth of international trade. He further opined that, "There is need for modern container ports, cranes, and expansion of existing facilities to accommodate larger vessels so as to increase container volumes. Investment in more capacity and higher productivity induces shipping lines to respond with more services, more port calls per service and bigger vessels, which in turn increase liner connectivity." Sanchez *et al*. (2014) opine that investment in port infrastructure makes a direct proportionate contribution to the GDP growth, and usually leads to improvements in profitability and a reduction in costs for the different economic agents of the Society. The provision of economic infrastructure like seaports can expand the productive capacity of the economy by increasing the quantity and quality of such infrastructure.

Global trends in port development have it that, out of a total of 100 plus seaport developments being executed in the world over; approximately 60 to 75 percent of these are deep sea ports or terminals. Nigeria needs new better designed port facilities in line with increased cargo traffic nationally and globally, new and bigger marine vessels that need deeper harbour drafts and global logistics trends and practices have made the need for deep sea port more imperative. The existing ports, especially Apapa and Tincan Ports in the Lagos axis, are overstretched with the attendant inordinate delays in cargo handling and processing. With capacity for 60 million metric tonnes of cargo handling, the ports run at about 100 million metric tonnes. This is expected to increase in the nearest future. The present situation in the ports system in Nigeria falls short of global efficiency. This, manifests in high turnaround time of ships in the ports. The implication of this is the

diversion of ships and cargo meant for Nigerian ports to the neighbouring West-African ports of Ghana, Republic of Benin, Togo, etc. (Emeaghara, 2008).

Inland Waterways

The Nigerian waterways are major natural resources, traversing 20 out of the 36 states in Nigeria. An efficient coastal inland infrastructure system will relieve pressure on road and rail transport infrastructures as bulk goods could be transported over long distances at very low rates (Ogwude, 2011). The inland waterway is widespread along the coastal length of the country, Nigeria, but the development of ports along Rivers Niger and Benue is limited. There are few places along both rivers that have adequate infrastructure for the transfer of cargo between barges and railways or trucks. Locations such as Yelwa, Baro and Lokoja along River Niger and Makurdi, Ibi, Lau, Numan and Yola along River Benue are just landing places. Little investments are made in some facilities in these locations and most of them are minimally equipped. The failure of government to attend to inland waterways infrastructure over the years has led to high sedimentation, appearance of wrecks and other obstruction, defective communication and navigational aids among others. However, government has commenced dredging along Lokoja-Port Harcourt axis but not much progress has been recorded (Olusiyi, 2013).

Methodology

This is a descriptive research type involving field survey and observations, oral interview, and use of structured questionnaire. Primary data were obtained from primary sources through the use of structured questionnaires and oral interview from field survey and observations. Using Taro Yamane, a total number of 375 questionnaires were randomly administered to the targeted population for detailed information gathering. Data gathered from the study were analyzed using simple descriptive statistical technique.

Results

Table 1: Respondents opinion on basic transport infrastructure available in Baro Port

Infrastructures	Yes	No	Total
Rail	266	109	375
Road	375	-	375
Marine Access	243	132	375
Quay	193	182	375
Terminal Facility	209	166	375
Berth	229	146	375
Warehouse	307	68	375
Office Facilities	375	-	375
Cargo Handling Equipment	-	375	375

Source: Author's field survey, 2020.

Table 1 shows the availability of basic transport infrastructure affirmed by the respondents such as rail (266), road (375), marine access (243), quay (193), berth (299), terminal facility (209), warehouse (307), and office facilities (375) in Baro river port respectively. These available transport infrastructures are essentials for a functional Port however fall short of international standard. A good and functional port should be well equipped with facilities that are of international standard so as to meet future demand in volume of shipping trade. The presence of various modes in Baro Port also revealed it potential to promote effective intermodal transport.

Table 2: Respondents opinion on the physical state of the transport infrastructure provided for Baro Port

Infrastructures	Very Good	Good	Moderate	Bad	Very Bad	Total No. of respondents
Rail	43	76	67	102	87	375
Road	-	89	83	94	109	375
Marine Access	29	102	36	138	70	375
Quay	127	173	75	-	-	375
Berths	115	165	95	-	-	375
Warehouse	142	171	49	13	-	375
Offices	111	169	95	-	-	375

Source: Author's field survey, 2020

Table 2 revealed the physical state of railway network to be in bad condition which was affirmed by 102 of the respondents. 109 of the respondents perceived the road network system to be in a very bad condition. About 138 of the respondents revealed the marine access to be in a bad state. While the Quay (173), Berth (165), Warehouse (171) and the Offices (169) are in a good state respectively. Although, the poor state of the road, rail and waterway accesses to the Baro Port will hamper seamless movement of freights. Therefore, there is the need for the Federal Government to complete the rehabilitation of the Baro port, revitalized the railway and the roads for the economic potential and social benefit of the Baro port to the people.

Table 3: Respondents opinion on the functionality of the facilities in the port

Infrastructures	Yes	No	Total
Road	343	32	375
Rail	-	375	375
Marine Access	359	16	375
Quay	-	375	375
Berths	-	375	375
Warehouse	-	375	375
Offices	51	324	375

Source: Author's field survey, 2020.

Considering each one of the facilities being provided for Baro Port, results from table 3 indicated that 343 of the respondents affirmed the road network system is functional, 359 affirmed the functionality of the marine access (waterways), and 51 for the functionality of the office facilities. The non-functional of the Rail, Quay, Berth, and Warehouse was attested by the 375 of the respondents respectively. Furthermore, the functionality of the marine access (waterways) is based on the fishing activity that is being used for. The level of the functionality of these transport infrastructures makes the Baro port not ready for operations. If Baro river port is to be fully functional, its potential use will depend on the availability of functional and efficient infrastructures and inland connections which according to Carbone and De Martino, 2003 are requirements for a global transport system.

Table 4: Mode of transportation preferred by the respondents for trip

Mode	No. of Respondents	Percentage (%)
Rail Transport	179	47.7
Water Transport	65	17.3
Road Transport	131	35
Total	375	100

Source: Author's field survey, 2020

Table 4 shows the analysis of the mode of transportation preferred by the respondents.179 which is about 47.7% of the respondents prefer to use rail transport system for trip, 35% prefers the road network while 17.3% prefers water transportation respectively. This revealed that a larger number of respondents prefer to use rail transport system for trip compare to water transportation. The rail, although, preferred mode of transportation has also been abandoned leaving the bad road network as the only option for people to reach the port.

Table 5: Respondents opinion on indices of choosing other modes of transportation other than water

Indices	No. of Respondents	Percentage (%)
Distance	89	23.7
Time	173	46.1
Cost-Effectiveness	50	13.3
Door-to-door service	63	16.8
Total	375	100

Source: Author's field survey, 2020

The table 5 shows the analysis that 173 constituting about (46.1%) of the total respondents considers 'Time' as an indices/factor influencing their choice of mode(s) of transportation compared to water transportation, 23.7% considers 'Distance' as a factor, 13.3% considers Cost-effectiveness' while 12% considers the ease of 'Door-to-door services'.

Conclusion

The basic transport infrastructures provided in Baro river port are the road transport network, railway network system, and marine access, however, the physical state of these infrastructures are in very bad condition. From the finding of this study on the functionality of the facilities provided for Baro Port, the road and the marine access are the only facilities functional. Others such as rail, Quay, Berth, warehouse and offices are non-functional. The rail is the most preferred mode of transportation for trip due to its easy access to the hinterland compared to water transportation. It is noteworthy, that the Baro river port is not used to convey the local inhabitants from one location to another due to the absence of settlers along the river side as the port has long been abandoned. Efforts have been ongoing by the Federal Government in rehabilitating the road transport network linking Agaie through katcha to Baro river port.

Recommendations

The following recommendations are proffered:

(i) The infrastructures being provided for Baro Port should be in conformity with international standards to meet the present and future demand of the use of the port so as to fully realize its enormous advantages as an inland port.

(ii) It is also recommended that the Federal Government should involve the participation of private sectors in the rehabilitation of the inland ports and in provision of modern facilities needed for effective operations in ports.
(iii) Government should further sustain the rehabilitation of the Baro Inland Port and other Inland Ports in Nigeria to expand the economic integration of the country and effective use of inland ports.
(iv) The rail and the road linking Baro port to the hinterland should be rehabilitated to provide efficient intermodal transport chain network.
(v) An effective monitoring and evaluation of ongoing project at the Baro Inland Port should be undertaken for greater achievements.

References

Arts, J., Hanekamp, T., & Dijkstra, A. (2014). Integrating land-use and transport infrastructure planning: towards adaptive and sustainable transport infrastructure in. *Paper Presented at the 5th Conference on Transport Research Arena: Transport Solutions from Research to Deployment,* on 14th April, 2014. Paris, France.

Bottasso A., Conti M., Ferrari, C., & Tel, A. (2014). Ports and regional development, a spatial analysis on a panel of European regions. *Transportation research part A. Policy and Practice,* 44 - 55.

Carlucci, F., & Cira A. (2009). Modeling a plan for seaport investments through a system dynamics approach. *Pomoestve.god,* 405 – 425.

Dinu, O., Rosca, E., & Rusca F. (2016*). Inland waterway ports characteristics relevant for classification methodology purpose in book: Maritime Technology and Engineering 3 (pp.53-60).* Publisher: Taylor & Francis Group, London Editors: Guedes Soares & Santos.

Eddington, R. (2006). The Eddington transport study: Transport 's role in sustaining the UK's productivity and competitiveness. Main Report, 1, 24. http:/www.dft.gov.uk/162259/187604/206711/volume1.pdf

Emeaghara, A. (2008). *An assessment of delay factors in Nigerian ports.* Unpublished Dissertation. Federal University of Technology Owerri.

Emenyonu, U. M., Onyema, H. K., Ahmodu, K. O., & Onyemechi, C. (2016). Econometric analysis of seaport development and its impact on the economic growth of Nigeria. *International Journal of Advanced Research, 4(2),* 133-138.

Jeevan, J., Chen, S., & Lee, E., (2015). The challenges of malaysian dry ports development. *Asian Journal of Shipping and Logistics,* 31(1), 109-134.

Jouili T. A., & Allouche M. A. (2016). Impacts of seaport investment on economic growth. *Traffic & Transportation, 28(4),* 365-370

Lauratu, S. (2013). *Paying for inland seaport infrastructure.* Published Master's Thesis in Urban, Port and Transport Economics, Erasmus University Rotterdam.

Munim, Z. H., & Schramm, H. J. (2018). The impacts of port infrastructure and logistics performance on economic growth: the mediating role of seaborne trade. *Journal of Shipping and Trade, 3(1),* 1-19.

Ndikom, O. B. C. (2013). A critical assessment of the inland waterways operations and management on the development of the Nigerian maritime industry. *Greener Journal of Environmental Management and Public Safety*, *2*(2), 99-17.

Obeta, M. C. (2014). The characteristics of inland water transport in Nigeria. *IOSR Journal of Humanities and Social Sciences*, *19*(3), 119-126.

Ogwude, I. C. (2011). Transport infrastructure and mobility in Nigeria. *Jorind, 9*(1), 456-467. *www.ajol.info/journals/jorind*

Oksana S., & Irina, K. M. (2017). *Transport infrastructure development performance*. 16th Conference on Reliability and Statistics in Transportation and Communication, 19-22 October, 2016, Riga, Latvia / Procedia Engineering 178 319 – 329.

Owoputi, A. E., & Owolabi, O. O. (2020). Seaport development as an agent for economic growth and international transportation. *European Journal of Logistics, Purchasing and Supply Chain Management, 8(1)*, 19-34.

Rudneva, L., & Kudryavtsev, A. (2013). Transport infrastructure of the region: Concepts and forming factors. *Journal of Russian entrepreneurship,* 24(246), 139–144 Available from: https://creativeconomy.ru/articles/31011/29.

Sanchez, R. J., Tomassian, G. C., & Perrotti, D. E., (2014). Economic development and logistics performance: A probabilistic approach. *Revista Economia Mundial,* 38, 27 – 47.

Sanusi, L. S. (2012). *The role of development finance institutions in infrastructure development: What Nigeria can learn from the India infrastructure finance company.* Paper Presented at the Public Private Partnership (PPP) Stakeholders' Forum Lagos. Retrieved from blueprinting.com/abn-blames.

Skov, D. (2015). *Building economic capacity through maritime infrastructure development: The APM terminals perspective.* A paper presented the Nigeria Maritime Expo (NIMAREX), Lagos, Eko Le Meridian Hotels, Victoria Island Lagos State.

Tareq, A. M., Shaikh, M. A., Sen, S., & Xuefeng, W. (2020). Deep seaport and the national development: Perspective of Bangladesh. *International Journal of Engineering and Management Research,* 10(6), 73-80.

Vandu-Chikolo, I. (2004). *Overview of transport infrastructure and services in Nigeria*. Paper Presented at the 4th International Workshop on Public Transportation; Preparing the MassTransit for Global Challenges, on 25th July, 2004, Abuja.