

Economic viability of major river ports in Nigeria in the movement of goods and passengers to the hinterland

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Abstract. The Maritime industry has over the years, operated below capacity due largely to the neglect of the fundamental pillars, such as the wheel and spoke conceptual structure of development upon which grassroots economic business and local hinterland transactional exchanges rests on. Lack of a viable Shipping policy framework in place has also complicated the desire to develop the inland waterways operations and management, which is the key and rocky - anchor of the growth and development of an emerging inland waterways and River Ports operations. Ironically, there is a missing link in the economic trade liberalization and commercial transactional linkages and logistical spread connection between major port cities and the hinterland river-ports operations, due largely to the non- development of inland waterways operations in Nigeria. This study used mixed research design method comprised of both survey data and data from secondary sources to investigate the economic viability of selected River ports in Nigeria. It was recommended that, there is need for the government to further fortify these river -ports with clear -cut policies needed up-to-date infrastructural facility to assist to its development and growth. This is because, it will assist to kick-start the efficient inland waterways operation and facilitates economic viability of river -ports operational efficiency of the whole system, as well as strengthen the cabotage operations. It was also recommended that, efforts should be intensified to remove obstacles to safe navigation such as wrecks, derelicts, water hyacinths and other impediments on the waterways of each of the River-Ports at the end.

Keywords. Major-river-ports, economic-viability, Hinterland-operations, inland-waterways, transportation.

1. Introduction

1.1. Background Information

Over the years, it is very obvious and evident that, the maritime transportation activities as relates to Ports Operations including river ports and its attendant inland water ways movement, have played crucial and cardinal roles in the growth, socioeconomic development and transformation of the hinterlands, ports and nations' economic spectrum [1]. This is because, the effective management and control of our nation's major ports, rivers and its attendant tributaries will enhance the distributional linkage in terms of obvious transactional trade-commerce activities between the hinterlands and the major ports [1]. In fact, the need to develop these major River Ports through constructive strategic dredging of same, will improve the commercial-trade transactional openings between the hinterland linkage with the major ports as regards export-import of rural agricultural products at the end. To a large extent, it will improve the economic trade commerce life structure of the hinterland's economy at the end [1, 2]. This is because, the overall activities of improving the hinterland major river ports movements of agricultural products via the major ports are seen as the lifeline of and the gateway to a developing economy. Instructively, no doubt, the maritime industry, especially the ports system, is very vital to the economic survival of any nation [2]. It is pertinent to note here that, the mere mention of Nigerian River Ports resonates a nostalgic feeling about markets Nigeria prior to the civil war as regards movement of goods, passengers and even the distribution of mail services from cities to the hinterland [3]. It is evident that, the River Ports were navigable to the effects that, foreign companies such as UAC, John Holt, CFAO, Royal Niger Company, Elder Dempster etc., made huge investments in the River-Ports structures and platforms including acquisitions of river crafts that were engaged in the operating of the system. Inland waterways and the river-ports in Nigeria used to play the crucial roles of facilitating movement of agricultural produce from the hinterland markets through the major seaports to the European, American and Asian markets [4].

Consequently, the maritime trade of this subsector flourished against the backdrop of the agricultural produce that were transported to the coastal waterways enroute the major seaports for exports, which yielded foreign exchange and indeed so generated employment in Nigeria [4]. The creation of the National inland Waterways Authority (NIWA) constitutes part of the efforts aimed at harnessing the transport potentials of the Rivers and the River ports in Nigeria, but available policy challenges have not allowed the realization of the transport potentials of the inland waterways and the river-ports [4]. The socioeconomic development of any nation depends on external trade with other countries. In fact, the port is considered as the flagship to a nation's economy. As a country that depends on external trade of her agricultural products with other nations, Nigeria must put in place strategies and options that support the realization of government agenda and economic goals [5]. This is because, Maritime activities serve as the driving force in the movement of people and flow of information, raw materials and finished products which help, build and maintain society [2]. As an agent of development and growth, maritime transport is an anchor and propeller; the actual wheel of commercial, political and geo-economic advancement. Transport is very crucial to the effective management of any government, commercial activities and all non-governmental institutions; and as no growth or development effort can

be made by any responsive government without anchoring it on the transformational wheel of transport. This is because, transport is not often demanded on its own but for the satisfaction of a corresponding need of its user within a specific time [2, 5]. The reliability of major River Ports as reflecting transport services on the part of any government, mostly in a developing nation, has informed the use of this critical national infrastructure in the process of development and transformation of rural hinterland areas [2]. This is because, the maritime industry has, over the years, operated below capacity due largely to serious neglect of the fundamental pillar upon which grassroots economic business rests [2]. The obvious lack of a viable shipping policy in place has over the years, also complicated the desire to develop the inland waterways operation and its attendant major River Ports, which is key to the growth and development of an emerging maritime economy. Thus, there is a strong missing link in the economic trade liberalization and commercial transaction between major port cities and the rural hinterland, due largely to the non-developmental policy of inland waterways operation in Nigeria [2]. The new government's initiative to structurally dredge the lower River Niger across different states and cities is an assured hope of good things to come. The obvious dredging of the lower River Niger will bring about expansion in our economies of scale, leading to the development of cities in the hinterland and job creation, as river ports would be developed in the process. To a large extent, this would lead to an expansion in Seaborne trade in agricultural products of grassroots people at the end [2].

In specific terms, it is stated that, the slow pace of implementation of the dredging project, only portend negative economic impact on coastal lands and people, as this impedes the achievement of grassroots economic emancipation [2]. It is very imperative to note here that, the massive injection of funds into the dredging project has, however, not resulted in the projected optimum output even within the project's takeoff period. Realistically, effective management of this worthwhile dredging project is very significant to the development of inland waterways operation in the country. As government should in fact stop paying lip services to and playing politicking vices with such developmental issues, as they are key to the overall economic growth and development of the nation, especially within the confines of the nation as relating to the grassroots area at the end [6].

Available evidences suggest that the river transport sub-sector in Nigeria suffers developmental neglect from both public and private sector investors such that even the last attempt at dredging the lower Niger and open up more river-port seems to have collapsed and failed as no operations are currently witnessed in majority of the dredged water-routes [7]. Part of the reason is lack of operation policy and inconsistency in the implementation of available inland water transport development policies [8, 9]. The development of the river transport sub-sector offers safer and cheaper rates in areas where water exist naturally. It facilitates commerce, promotes wealth creation, poverty alleviation, and creates job opportunities for youths within the confine's hinterlands and regions [7]. It equally enhances the growth and development of the watercraft and boat building sector and increases its capacity to generate employment for active youth engagements [10].

Ezenwaji, E. E. [11] Noted that Nigeria has river transport system that transverse over 20 of her 36 states with links to the seaports on the Atlantic shore. The implication is that it is possible for the movement of goods and passengers by river transport via the river-ports from both northern and Southern hinterland markets in Nigeria to the major seaports in Lagos, Port-Harcourt, Calabar and Warri. But it is necessary that necessary policies that will guarantee phased planning of the development and planning be first put in place [12, 13].

Adimoha [7] observed that, the Inland Water Transport (IWT) in Nigeria is "untapped goldmine for investors". This shows that, the capacity of IWT sector to impact on the economy can be significantly boasted. Indeed, there is increasing awareness that IWT could become an alternative means of transportation to road particularly in Anambra, Imo, Delta, Rivers, Edo, Lagos, Cross-River, Akwa Ibom, Ondo and even Borno states [14]. It is very imperative to note here that, it is important to carry out comprehensive research in order to determine the operational patterns of IWT in Nigeria to describe the attitudes of stakeholders towards this mode of transport, isolate strategies which can improve performance and, in addition, stimulate the private sector to invest in the inland water transport sector in Nigeria [7, 15].

It is very important to note that, industry waters and analysts have clearly argued that, with efficient control systems, the Nigerian Inland Water Authority (NIWA) could function appropriately to make economic fortunes for the development of the Nation's economic trends. This is because, the essence of opening up the hinterlands economic transactions is predicated upon the strategic initiatives of improved River Ports via Inland waterways transportation, that will enhance the values of moving goods from the River Ports to the major ports in the land [16].

It is very instructive to note here that, their arguments no doubts, is coming from the efficient operations of the Inland Water Ways transportation of the United States (U.S.) with about 25,000 nautical miles, out of which 12,000 miles have been commercialized and maintained by the government [17]. The reverse is however, the case in Nigeria. Over the years, the essence of the growth, water transport and other ancillary businesses have been impeded by numerous obstacles especially the battle for control and obvious supremacy of agencies by government as regards lack of policy initiatives and lack lustra of obvious policy aberrations over the years at the end [16]. Virtually, all the state governments within this geographical advantage are engaged in subtle regulatory or supremacy battle with the federal governments as in the supremacy battle of Lagos State with federal government over who controls and manage the inland water transportation domiciled within the territorial space of the state which seems very unfortunate. This is because; there are no clear lucid maritime policy framework as regards control and management of territorial inland water transportation [16]. This is because, the situation thereby flouts the provisions of the law, court rulings and as such cause serious distractions to major stakeholders within the confines of the industry [17].

1.2. Problem Statement

Over the years, the pivotal role and rural economic importance of inland water transportation in the growth and development of rural and hinterland economy cannot be over emphasized. The obvious apparent neglect of the use of inland water transport by every successive government is a very serious issues of major concern over the years. This situation has been compounded by lack of any visible maritime policy over the years. This is because, the transportation activities within the commercial trade transactional operational modalities within the confines of the waterway's operation are very low. The traffic on the lower River Niger can be increased significantly, if the need to resuscitate this rural means of transportation is essentially placed on the front burner at the end. As the road network reaches its economic and ecological limits, a shift of transportation to the obvious use of inland waterways transportation will make the situation much easier at the end. Obviously, essential policies for the river's further development were neglected. It is pertinent to note here that, the major handicap of Nigeria's inland transport policies namely, cabotage law and the latter-day dredging of the lower River Niger, is the unavailability of uptake cargo for the river transportation at the end [3]. This is responsible for the spatial disparity between the location of industrial complexes and the water cause, the preference for faster modes of passenger transportation, the hydrological difficulties of the lower Niger's seabed formation and even social anomalies of such as pirate attacks. Consequently, inland waterway transportation in Africa's largest economy is obviously stunted [3].

1.3. Aim and Objectives

The aim of the study is basically to evaluate the economic viability of major River Ports in Nigeria in the movement of goods and passengers to the hinterland while the specific objectives are to:

- (i) Ascertain the level of goods and passengers that are transported via the River Ports to the hinterland and vice versa.
- (ii) Ascertain the availability of modern cargo handling facilities and infrastructure at the river Ports.
- (iii) Ascertain the availability of suitable vessels/crafts of reasonable tonnage that operate in the River Ports.
- (iv) Ascertain the extent of safety and security of the River Ports' channels.
- (v) Ascertain the capacity of the River Ports in the promotion of export trade.
- (vi) Ascertain the linkage between the River Ports and other relevant intermodal transportation modes.

1.4. Research Questions

The following research questions were drafted for the study:

- (i) What is the level of goods and passengers that are transported via the River Ports to the hinterland and vice versa?
- (ii) What modern cargo handling facilities and infrastructure are available at the River Ports?
- (iii) Do suitable vessels/crafts of reasonable tonnage operate in the River Ports?
- (iv) What is the extent of safety and security of the River Ports' channels?
- (v) What is the capacity of the River Ports in the promotion of export trade?
- (vi) What relevant intermodal transportation modes link the River Ports?

1.5. Justification / Significance of the Study

The findings of this study will offer greater benefits of River Port transportation system as it relates to Government, River Port operators, users (passengers), host communities, tourism, employment generation, revenue generation, decongestion of road transportation among others as suggested thus:

- (i) It will lead to an expansion in waterborne trade of host communities.
- (ii) It will seriously address the issue of non-multimodality utilization in the Nigeria inland water transportation (IWT): hence, it suggests ways the various modes of transport could be integrated with IWT for effective and efficient transportation of goods and passengers.
- (iii) It will reduce the pressure as well as the wear and tear of the road transportation mode.
- (iv) Fully developed River Ports will also serve as a source of revenue to support national budget.
- (v) It will underscore the need for continuous policing and security of the river channels which will in turn boost commerce along the routes.
- (vi) It will see to the revival of export of agricultural produce from the hinterland through the river basins.
- (vii) It will contribute to achieving transshipment using river crafts for movement of goods from the waterways to the seaport for export.
- (viii) It will bring about the exposure to tourism potentials.
- (ix) It will lead to the establishment of distribution centers within the River Port facilities.
- (x) It will lead to the industrialization of the River Port vicinity.
- (xi) It will bring about the enhancement of income of operators as well as their social status.
- (xii) It will provide cheap and alternative routes where the roads cannot reach.
- (xiii) It will equally underscore private sector participation in the management of River Port operations.
- (xiv) That the dredging of the lower River Niger will bring about expansion in our economies of scale leading to development of cities in the hinterland and job creation, as river ports would be developed in the process.
- (xv) The implementation of the dredging policy of the IWT is a key to the overall economic growth and development of the nation, most especially within the grassroots areas.

2. Literature Review

2.1. Brief Review of Literature on Major River Ports in Nigeria

Over the years, it is evident to note here that the inland waterways transportation in Africa's largest economy has ever remained stunted [3]. Chilaka [3] stated that, the apparent handicap of Nigeria's inland transport policies, namely, cabotage law and the latter-day dredging of the river, is the unavailability of uptake of cargo for river transportation. He posited that, this is turn, is obviously caused by the spatial disparity between the location of industrial complexes and the water course, the preference for faster modes of passenger transportation, the hydrological difficulties of the lower Niger's seabed formation and even social anomalies such as pirate attacks, Chilaka [3] was of the opinion that, the most expensive capital and maintenance dredging campaign reflected an expenditure spend of N32 billion in 2009 for river training and removal of sand shoals and maritime wrecks, as reflects the fact that, the waterway still needs additional governmental measures to attain resuscitation as a competitive inland shipping canal for Nigeria's transport sector. Ndikom [1] opined that, the exact reliability of transport services on the part of government, mostly in a developing nation, has informed the use of this critical national infrastructure in the process of development and transportation of rural areas. He was of the opinion that, the maritime industry operated below capacity due to neglect of the fundamental pillar upon which grassroots economic business rests. Ndikom [2] is of view that, the lack of a viable shipping policy in place has also complicated the desire to develop the inland waterways operation, which is very key to the growth and development of an emerging maritime economy was instructive. He posited that, there is a very missing link in the economic trade liberalization and commercial transaction between major river port cities and the hinterland, due largely to the non-development of inland waterways in Nigeria. The new government's initiative to dredge the lower River Niger across different states and cities is an assured hope of good things to come. Ndikom [2] was of the view that, the dredging of the lower River Niger will bring about expansion in our economies of scale, leading to development of cities in the hinterland and job creation, as major River Ports would be developed in the process. He emphasized that, this will lead to an expansion in seaborne trade of grassroots people. Ndikom [18] noted that, the slow pace of obvious implementation of the dredging project only portends negative economic impact on coastal lands and people, as this impedes the achievements of grassroots economic emancipation. He was of the opinion that, the massive injection of funds into the dredging project has, however, not resulted in the projected optimum outputs, even within the projects takeoff period at the end.

Evidently, references [4] and [19] established that, the Niger River, after which the country is named, and Benue, as its tributary, are the main rivers whose-channels provide the longest waterways into the hinterland of the country. Both rivers rise outside the country but meet at Lokoja confluence and later enter the Gulf of Guinea through a large network of creeks and tributaries which form the Niger Delta. They also noted that, rapids and falls are very common features along many Nigerian Rivers and that are partly responsible for the fact that, navigation is not possible along certain parts of these rivers. Adejare [1] and [20] note that, the capacity of Nigerian navigable waterways has increased to about 10,000 kilometer in addition to an extensive coastline of about 852 kilometers. As a result, he stated here that, the country has a huge potential to move goods and passengers from the coast to the hinterland by water. This is because the immense opportunities which the Nigerian inland waterways provide for rural business is yet to be tapped by potential investors of which, this is very regrettable. Ezenwaji [11] noted strongly that, despite her huge potential, inland water transport is yet to become an alternative means of transportation to road and air such that, passengers and cargo can sustainably and efficiently be moved to their destination through water. Reference [21] was of the views that, inland water transport is yet to receive the attention it deserves from the federal government particularly in the twin areas of funding and infrastructural development. Specifically, reference [21] outlined the physical impediments to improved performance in the sector to really include, non-channelization and dredging of navigable rivers, inadequate construction and rehabilitation of major river-ports, limited water transported infrastructures (comfortable boats, jetties and buoys) and safety and security concerns along the navigable water ways. Incidentally, reference [11] x-rayed on the poor usage of inland rivers as transport routes in Nigeria. He made a strong comparison as percentage share of that transport mode to others in Nigeria and elsewhere. He also noted that, in Bangladesh, water transport constitutes 32% of the transport sector movement [22]; 20% in Philippines [6]; 3% in Sierra Leone [23]; 0.15% in India [22] and only 0.08% in Nigeria despite the country's rich endowments of inland waterways (that cover over 8.575 kilometers) and some innovative initiatives introduced by the Nigerian Inland Water Ways Authority (NIWA). He obviously noted that, like reference [24] who note that, several natural factors negatively affect exact utilization of inland waterways as transport routes in Nigeria. Notably, reference [25] referencing to the work of [26] Douglas work (2001) and [27] Onuche (2007) [28] indicated strongly that, inland water transportation plays a key role in the socio-economic and political development in Nigeria as a factor of exchange, mixing of population and sub-regional integration. Collectively, they were of the opinion that, this mode of transport facilitates the movement of bulky goods over long and short distances and that, it is better appreciated when the source and destinations are of water front locations. They collectively agreed by x-raying that, in spite of the tremendous advantages associated with inland water transport, there seems to be a considerable decline in its usage rates in Nigeria, which is unfortunate at the end. A structurally reviewed recent study noted that, [13] was of the opinion that, viable opportunities which inland water transport offer to investors, include facility management, jetty operations and boat building. He agreed with an earlier opinion and observation that, security concerns seem to discourage potential investors from tapping into the viable business opportunities, which the Nigerian IWT provides. This is in turn, because of the fact that, there have been several reports of consultancies by development

agencies and firms, aspects of which have dealt with divers IWT development issues such as river channels dredging and maintenance, private sector involvement in the water transport sector, construction and rehabilitations of major River Ports, acquisition of passenger ferries, security boats, building of channels buoys and other projects. There are general conclusions reached that, investments apathy on the part of investors and conflicts between federal and state agencies involved in the obvious supervision of IWT in Nigeria, are some of the factors limiting the development of Nigeria's inland water transportation at the end. Incidentally, it is an obvious fact that, the spatial structural systems of inland water transport operations, its major contributions, socio-cultural constraints limiting its operation and policy trusts and targets remains largely unknown, hence the need for this critical and cardinal study to really bridge the existing gap in knowledge in the inland water transport sector in Nigeria [15].

2.2. Literature Gap

From the brief literature review in section 2.0, it is obvious that, though available empirical studies have investigated the need for the development of the inland water transport sub-sector of Nigeria; such studies however failed to provide evidence of the economic viability of the River-ports that will serve as nodes and links for the harnessing of the inland water trade and movement between the river ports and the seaports. Empirical evidence to back-up the viability claims of the major river-ports is important because private investors will only be motivated to make investments for the development of the river-ports and by extension the inland water transport systems, by first understanding the profitability potentials and economic viability of the rivers-ports in terms of passenger traffic potentials, vessel and cargo traffic potentials. Therefore, the gap of lack of available empirical literatures that provide evidence and support on the passenger traffic, vessel traffic and cargo traffic potentials of the major river-ports and inland river-routes is what this study seeks to bridge.

3. Methodology

This study is a cross sectional field sample survey approach that was used for adoption of data collection relating to two or more variables at a single time from respondents using simple random sampling techniques to select respondents' views.

A sample size population of three hundred was finally selected for the major River ports, as the research design was chosen because it provides appropriate methodology for opinions, beliefs and perceptions of respondents of River ports and Jetties that were covered on the study. Two self-developed close ended questionnaires were designed in conformity with the study structures. This was structured with 16 and 18 items respectively and which was administered to users and operators of the River-ports to generate information with respect to Research questions. The study made use of secondary data which generated information from books; journals and maps as data were analyzed using various simple statistical techniques such as totals, percentages, graphs, pie charts, bar charts and compound bar charts. Content validity for the instrument was ascertained by technocrats and professionals within the maritime industry. The test of reliability showed a correlation/reliability coefficient 0.80, which indicates about 80% reliability.

4. Data Analysis and Result interpretation

The Figure 1 reveals that Baro and Calabar River Ports had 90% response rate respectively while other River Port as listed on the graph had response rate within the range of 80-89 percent respectively.

Figure 2 above shows that Calabar and Makurdi River Ports had the highest proportion (100%) of operational level compare to Yenogoa and other river ports. The figure shows further that Baro River Ports had the highest proportion of Non-operational level compare to other ports.

The Figure 3 shows that Lokoja port had the highest proportion (92%) of transporting agricultural products. Yenogoa port had the highest proportion (40%) of transporting timber among other ports. Oron river port transport (45%) of the petroleum product. Onitsha port transport (40%) building material.

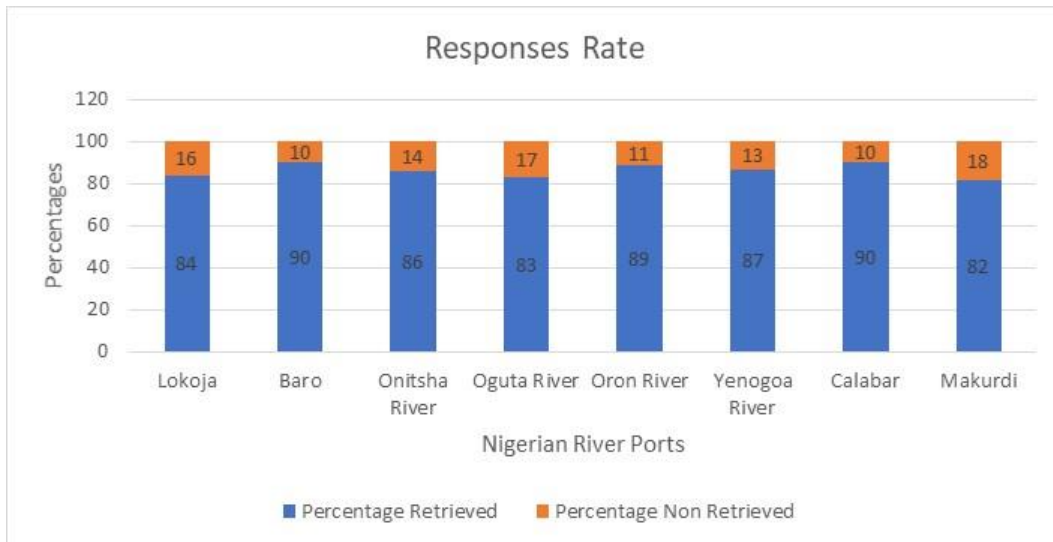


Figure 1. Response Rate

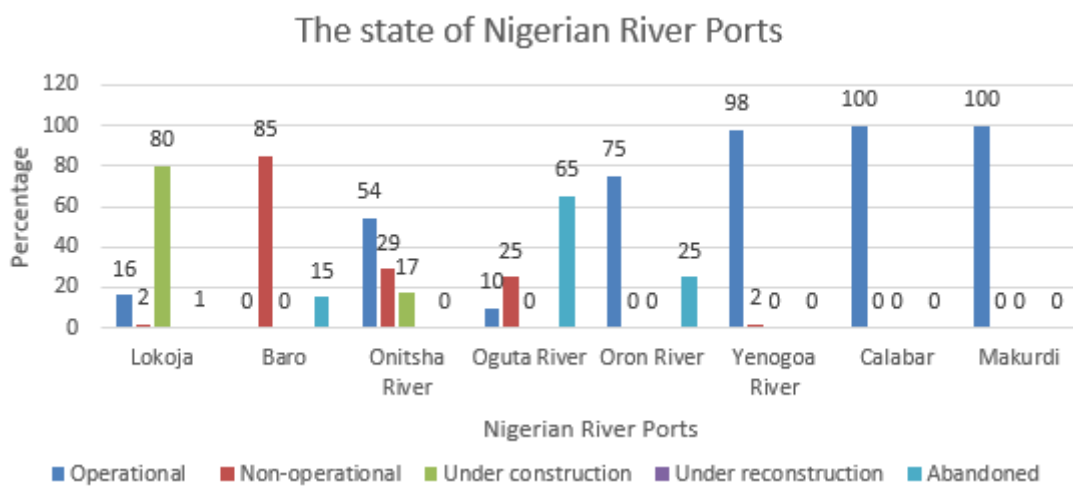


Figure 2. The State of Nigerian River Ports

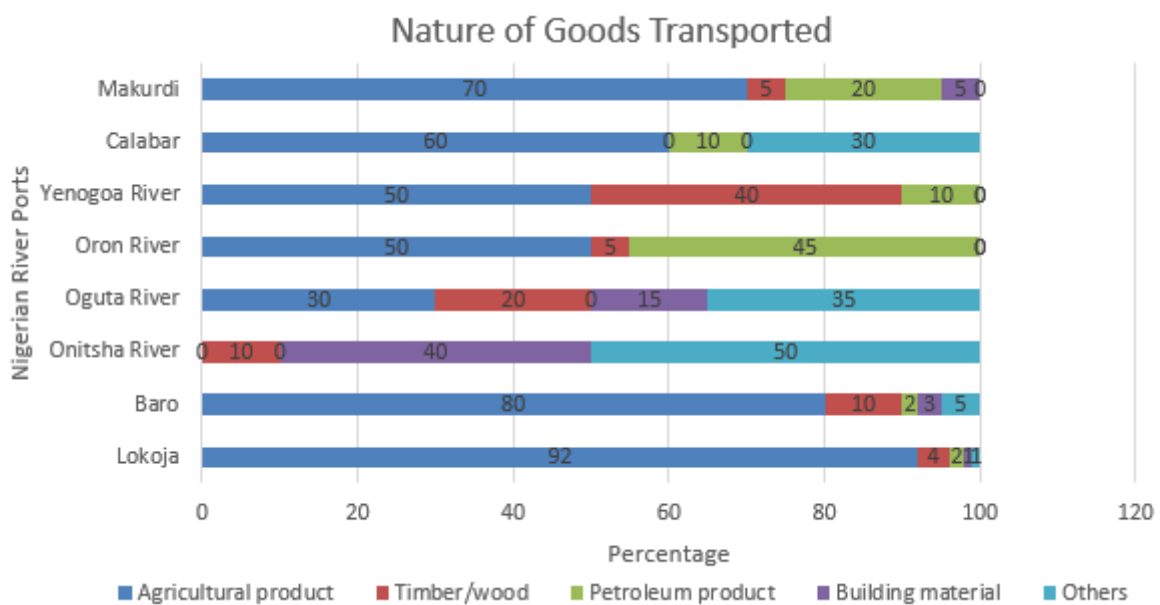


Figure 3. Nature of Goods Transported

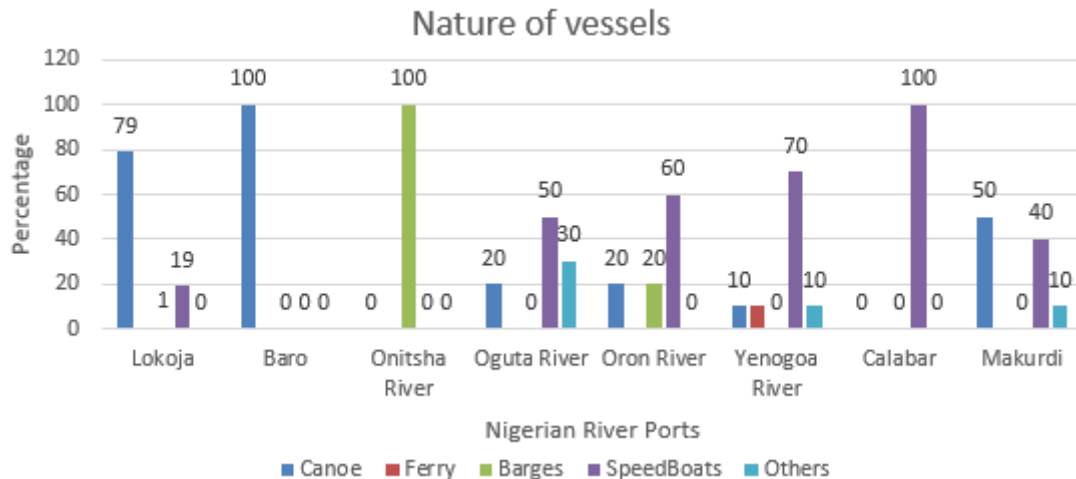


Figure 4. Nature of vessels

Among the other ports Baro had the highest proportion (100%) of the port that use canoe, Onitsha had the highest proportion of the usage of barges while Calabar had highest use of speedboats.

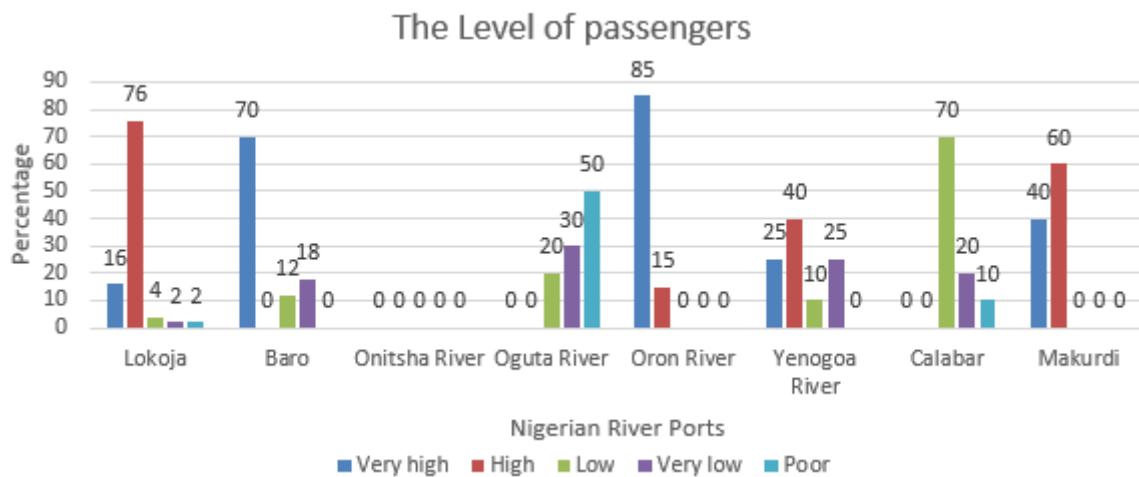


Figure 5. Level of passengers

The Figure 5 shows that Oron river port had the highest level of passengers (85%), Baro port is the second with very high (70%) while Calabar had the highest proportion (70%) with low level of passengers.

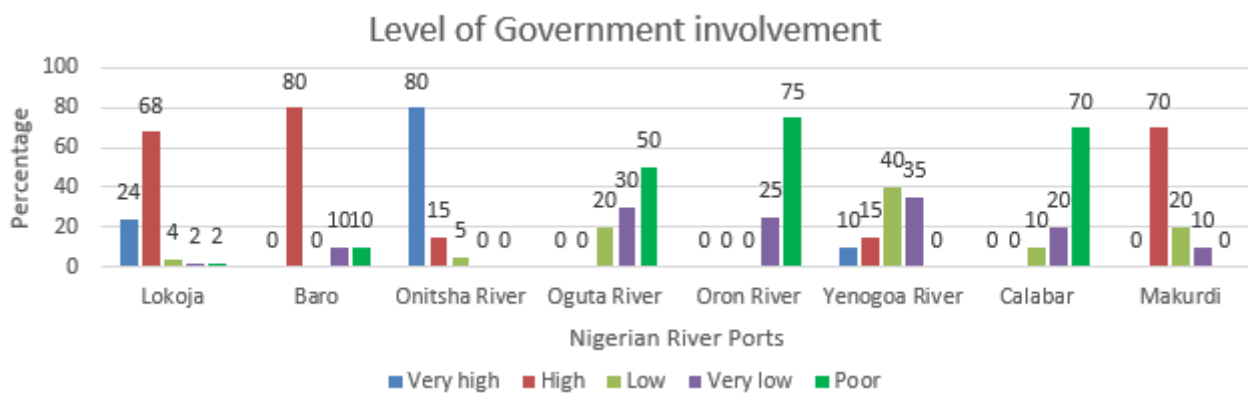


Figure 6. Level of Government involvement

Onitsha port had the very high (80%) level of government involvement while Baro port had (80%) of high level of government involvement.

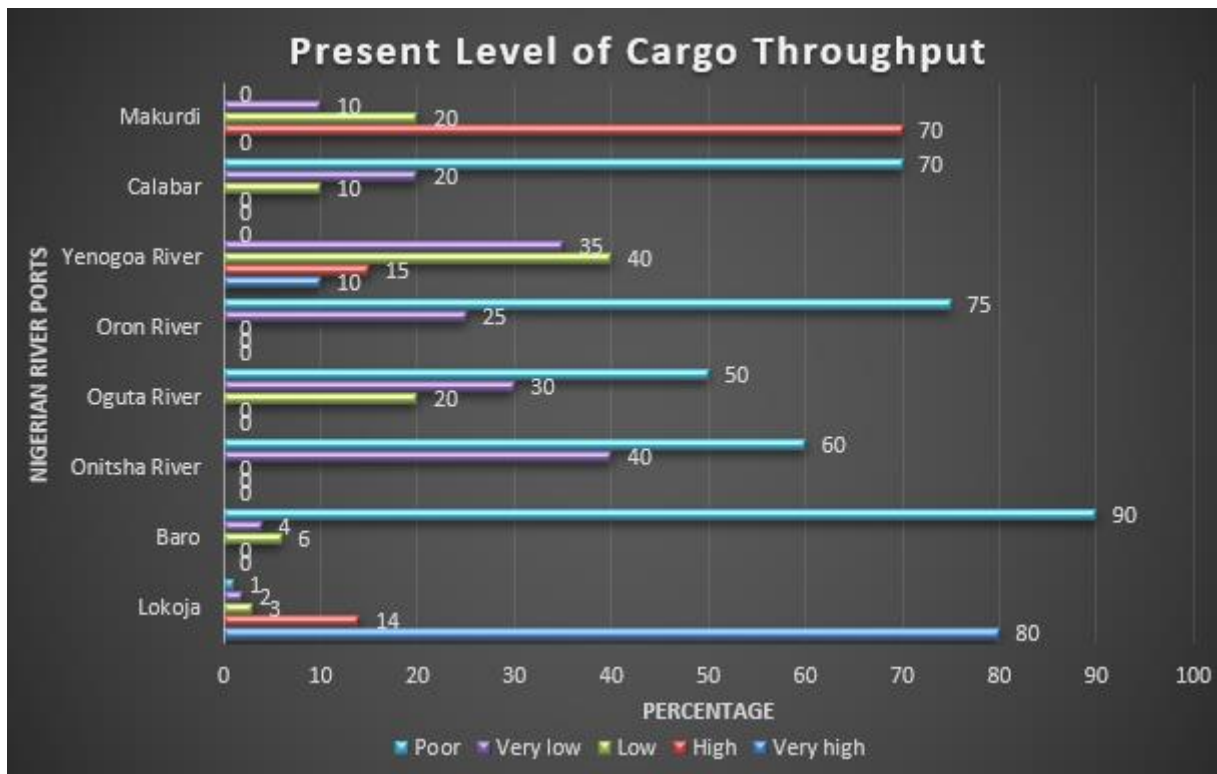


Figure 7. Level of cargo throughput

The Figure 7 reveals that Lokoja port had the highest (80%) level of cargo throughput across other port while Baro port had high proportion (90%) of poor level of cargo throughput.

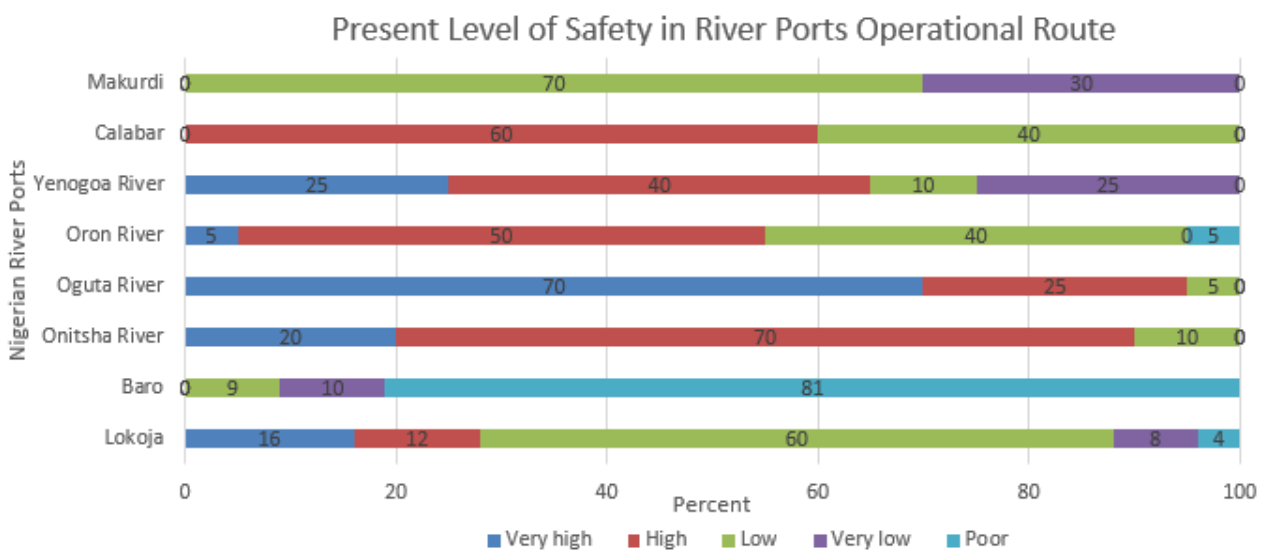


Figure 8. Present Level of Safety in River Ports Operational Route

The Figure 8 reveals that Oguta River Ports had the higher proportion (70%) of very high level of safety in river ports operational route compared to other ports. Makurdi port had the higher proportion (70%) of low level of safety in river ports operational route.

The Figure 9 shows that Oron, Makurdi river ports had higher proportion (100%) of theft/armed robbery experienced in the channels while Calabar port experience twenty percent rate of militancy

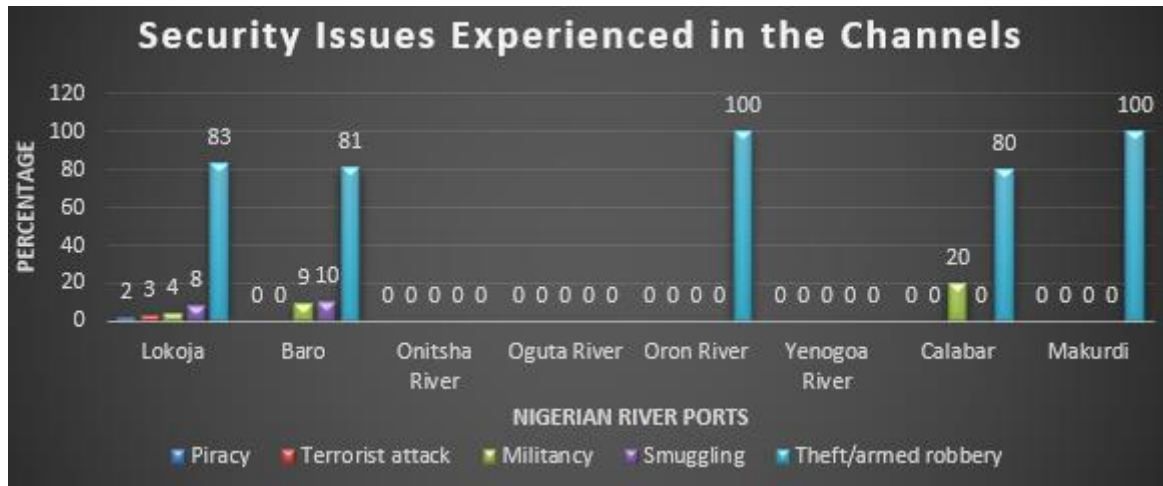


Figure 9. Security Issues Experienced in the Channels

5. Summary and Discussion of findings

The study on the eight (8) major River Ports is quite expository and provides empirical evidence on the current operations of the River Ports. There are only four River Ports where Government has shown interest and made some investments. They are Lokoja River Port in Kogi State, Baro River Port in Niger State, Onitsha River Port in Anambra and Ogwuta River Port in Imo State of which Onitsha and Baro river port had higher proportion of government involvement compared to other ports. Calabar and Makurdi River Ports had the highest proportion (100%) of operational level compared to Yenogoa and other river ports. Baro River Ports had the highest proportion of Non-operational level compare to other ports

Calabar and Makurdi River Ports had the highest proportion of operational level when compared to Yenogoa and other river ports. Baro River Ports had the highest proportion of Non-operational level compared to other ports. In the case of Baro River Port, which is not operational despite huge Government investments in infrastructural facilities since its lower Niger channels have not been dredged coupled with non-motorable road linking to the hinterland to Baro River Port. However, the ultramodern River Port is under lock and key as the case may be. Among the other ports, Baro had the highest proportion of the port operations that make use canoe in the movement of cargoes, while Onitsha had the highest proportion of the usage of barges while Calabar had highest use of speedboats.

For Onitsha River Port, it has been developed with strong platform and modern cargo handling facilities but has remained dormant due to dredging challenges. But during the study, a barge conveyed some containers from Onne Seaport to Onitsha River Port in what appeared a testing exploit. However, the dredging of the channels remains of utmost importance, if barges of heavy containers are to be transported to the River Port soon, it is obviously expected to open up economic activities. There is evidence of transportation activities at the jetties where goods and passengers are conveyed to and from the hinterland.

Oguta River Ports had the higher proportion of very high level of safety in river ports operational route compared to other ports. Makurdi port had the higher proportion of low level of safety in river ports operational route. Oron, Makurdi river ports had higher proportion (100%) of theft/armed robbery experienced in the channels while Calabar port experienced twenty percent rate of militancy

The Oguta River Port in Imo State has its developmental process abandoned. The space earmarked for the development of the ultramodern River Port is not operational. The Jetties close to the official location are busy with waterway transportation to and from the hinterlands. The *Pontu* which are locally made barges are utilized for transporting goods and passengers to and from the hinterlands on a viable scale.

The remaining so-called River Ports namely: Oron, Yenogoa, Calabar and Makurdi are either Jetties, Creeks or Beaches where River Port activities take place on limited capacities, and without any form of development in terms of platforms, quay apron and other modern cargo handling facilities.

6. Recommendations

- (i) Navigational aids such as buoys, lighting etc should be provided on each of the River Port channels.
- (ii) The railway system advocated for the River Ports should be both inbound and outbound, so as to reduce operational downtime.
- (iii) Dockyard(s) should be established for the maintenance of vessels/crafts used at the River Ports/ Jetties as none was found to be in existence within the River Ports/ Jetties vicinity.
- (iv) Marine Police services should be established in each of the River Ports.
- (v) Appropriate and comfortable crafts should be provided for ferrying only passengers in every River Port.
- (vi) Effort should be intensified to remove obstacles to safe navigation such as wrecks, derelicts, water hyacinths and other impediments on the waterways of each of the River Ports.

- (vii) There is urgent need for the training of the River Port operators on safety, navigational aids (IWT safety culture) to enhance competence and professionalism.
- (viii) There is need for storage facilities at each of the River Ports for the storage of bulk and wet cargo awaiting delivery.
- (ix) Given the economic viability potentials of the River Ports/Jetties, a public-private-partnership (PPP) management model is recommended in order to enhance operational and managerial efficiency, as well as revenue generation.
- (x) It is necessary that policies be developed for the phased investment in and development of viable river-ports and inland water transport sub-sector in Nigeria and encourage private sector participation in the development of the sector.
- (xi) There is for development of Maritime investment banks to create opportunities for ease of access to investment loans for private operators interested in developing the inland water transport sub-sector and river-ports.
- (xii) The institutional framework for the development of the river-port system and river transport sub-sector should be developed.
- (xiii) There is need for government to encourage inter-agency collaboration aimed at supporting projects that promotes the integration of inland water transport within intermodal transport systems and its integration into comprehensive planning for water resources management.
- (xiv) There is need for total recognition and strengthening of the role in socio-economic development of the country boats and small vessels operated by the informal sector, with particular reference to poverty alleviation in rural areas.

7. Conclusion

Considering the role which the River Ports played prior to the Nigerian civil war, in which they promoted the transportation of agricultural produce from the hinterland to the major seaports for export, it is evident that what is obtainable at the moment is a far cry. This is underscored by the findings of the study on the eight (8) major River Ports, in which economic viability is yet to be achieved. However, in anticipation of agricultural revolution through mechanized farming which has already started in some states e.g., Niger State and the need for multimodal transportation, equipping the River Ports with adequate facilities would enable them to function effectively in the export trade supply chain. While the adoption of public-private-partnership (PPP) management model would make Government investment in the development of major River Ports in Nigeria profitable. It is equally important to note that transshipment of cargo from the seaport to any of the River Ports through barges etc. will reduce heavy traffic gridlock currently experienced within the vicinity of the seaports, as well as reduce the pressure on the road transportation system. Consequently, Government is invited to expedite action of making the river ports functional.

The transportation activities in the water are very low. The traffic on the River Niger can be increased significantly. A river information service is a concept for harmonized information services to support traffic and transport management in land waterway navigation including interfaces to other transport modes. This is because, inland water transportation system (IWTS) offers an economic and eco-friendly mode of transport, particularly for the movement of bulk cargo and passengers (Adejaree et al., 2007). Inland waterways transportation is a key component of the intermodal transportation network and is very essential to Nigeria's economy, environment and quality of life. This is because, the nation's transportation system and taxpayers would really benefit from the completion of essential navigation infrastructure and the containment of cost overruns (Kuhreiber, 2007).

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