CONCESSIONING AND CONTAINER TRAFFIC OPERATIONS IN NIGERIAN PORTS

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ABSTRACT
This study examined the concept of concessioning and container shipping operations in Nigerian Ports and its effect on ports revenue. It analyzed the improvements in container traffic since concession, trend of container traffic after concession, and its influence on ports revenue. The major objectives however are to ascertain if there is a significant difference in the container traffic between the pre-concession era and post-concession era, to examine if there is a significant change in container traffic with respect to years of operations within the confines of the Ports system, and to ascertain if there is any significant influence of container traffic on ports revenue. Secondary data collected from government agencies were employed in this study. The study employed the use of descriptive, inferential statistics and trend analysis were used in analyzing if the container traffic can be predicted based on data from previous years of operations, simple linear regression was employed to ascertain the influence of container traffic on port revenue and T-test was used to find out if there is any significant difference between the pre and post concession era. The results from the findings indicated container traffic improvements after concession, and positive influence of container traffic on ports revenue. Also, the study found that there is no significant change in container traffic with respect to years of operations of the Ports. It was however recommended that the relevant stake holders in the Nigerian maritime industry should make concerted efforts to enhance container traffic to help improve ports revenue. The result of the findings also indicated that, the Container traffic has improved the ports output through the emergence of inland container depots and segmented bonded warehouses across the six geopolitical zones of the nation at the end.

Keywords: Concession, Container operations, Port Operations, Nigerian Maritime Environment, Infrastructural development and Pre-Post Concessioned era.

INTRODUCTION.
Over the years, the Nigerian government has actually addressed the substantial backlog of structural defects within the confines of the maritime sector through reforms (in the form of privatization and concessioning) with the aim of enhancing port efficiency and productivity. The concept of port reforms the world over is to deregulate, decentralize, privatize the sector and organize competition within it. It is pertinent to note here that, port productivity and performance are anchored on increased cargo throughput and reflective revenue generation at the end (Ndikom, 2006). The relevance and efficiency of any port under concessioning process is based on the degree of cargo traffic that passes through it. Concessioning is the process by which public assets of a State enterprise are entrusted for a limited period of time (duration can be extended to a private operator, with the responsibility to manage them in good shape). It reflects the actual contracting out of the management of the port to the private sector for a period of time (Folarin, 2009). This seems to be a clear reform concept that is aimed at improving the management and performance of the day-to-day running of a port, and is principally meant to reduce cost and increase productivity, efficiency, output and revenue (Folarin, 2009). Concessioning is thus, the temporary privatization of the management of an activity, but with the government retaining ownership of the assets and the concessionaire not automatically or immediately relinquishing to deliver certain aspects of the public services required of him under the said agreement (Ndikom, 2006). It is pertinent to note here that, before the ports were concessioned, the level of productivity, efficiency and revenue generation in terms of Cargo and Container traffics within the confines of the ports are nothing to write home about, due largely to inadequate and nonfunctioning of infrastructural facilities and equipment. The Post-Concessioning era of the
ports seriously saw improvements in Cargo and Container traffics and increased throughput within the confines of the ports system reflecting an increase in substantial revenue generation at the end (Ndikom, 2006).

Over the years, the concept of shipping trade all over the world has been improved tremendously by the emergence of container trade operations within the confines of every given maritime environment. This is because it is an operation that is a safer concept in moving goods on the sea from one point to the other (Ndikom, 2011). It is essential to note here that container trade is one of the mainstays and veritable concept of international trade and very suitable to withstand shipment operations. Containers are large metal or wooden boxes of standard sizes in which goods are packed so that they can be easily lifted onto a ship, train etc to be transported (Ndikom, 2011). They have become inseparable aspect of modern shipping business, vital tools in freight movement, requiring expert knowledge or proper usage, management and maintenance. The concept of containerization signposts the idea of storage arrangement of goods contained in containers with regard to the nature, sizes, volatility and delicateness of such goods loaded in the container. Containerization is the process of arranging mechanized consignment, goods, haulage, cargoes in a unitized form for proper effectiveness, safety and security of those goods. Over the years, containerization has helped in the development of intermodal transport system as it makes it easier for the conveyance of goods from one place to another. Containerization is a cost-effective means of consolidating goods together in order to achieve better service delivery in terms of cargo movement and transportation. (Ndikom, 2006)

It is a system comprising independent units or sets of smaller parts as obviously interlinked in a coordinated activity of goods delivery, either from one exporter in a foreign land to another importer in a destination port (Ndikom, 2011). Over three decades ago, it could be seen to be adjudged that containerized shipping trade operations is becoming the most preferred means of moving cargo from one part of the world to another. This is because, according to Omole (2004), the total Nigerian containerized cargo throughput is obviously expected to reach 0.59 million TEU by 2005. It is expected to note that, the takeover of terminals by concessionaires over the past twelve (12) years now, have obviously increased the container traffic and therefore improved cargo throughput. It is expected that the increasing trends and high demand traffic over these years could be seen by the establishment of inland container depot (ICDs) and a good number of bonded container terminals in a number of developing countries, including Nigeria, which readily affirms the growth and increasing importance of containerization as an important aspect of shipping (Omole, 2004).

The socio-economic stand of this critical and vital human invention concept, as regards container trends and traffic dimension in an obviously ports operational and shipping trade process at this modern age are invaluable and veritable indeed (Ndikom, 2017). This is because containerization has created a modern and irresistible taste in the world of effective Maritime-transportation. As this is an automated technological change which is very cost effective, efficient in nature, secure, safe and a reflective strong intervention method in the physical and health rescue inputs, it is very important that infrastructural development drives it to a logical conclusion aimed at improving ports output at the end. Also, it seems to really decrease the time of operation and the exact burden to man in controlling the task of the carriage of general cargo in the shipping chain (Ndikom, 2011). Without containerization, a great deal of physical human inputs at every stage in the enduring storage chain, carriage transport process will amount to 90 per cent of shipping time, negatively affecting the turn-round economics of the transport system, which is the basic instrument that reflects effective and efficient shipping services at the end (Ndikom, 2011). It is of interest to note here that the aim of this study is to examine the concept of concessioning and container traffic operations in Nigerian ports and its effects on port revenue. Also, the major
objectives however are to ascertain if there is a significant difference in the container traffic between the pre-concession era and post-concession era, to examine if there is a significant change in container traffic with respect to years of operations within the confines of the Ports system, and to ascertain if there is any significant influence of container traffic on ports revenue.

It is indeed pertinent to state here that, the latest method of handling and transporting goods in one fully integrated automated form or nature is through containerization. This system which has indeed and obviously revolutionized the maritime industry has ever since become popular in the 1970s, spreading round the world through seaborne transport, especially through container ships, deck carriers and so on. The origin of containers that we see today can be traced to the mid-1950s. They were developed through the inventive efforts of Malcolm Mclean, often referred to as the father of modern freight service across seas. With this development, the maritime sector sets-off the container revolution, with a universal acceptance as the viable technique of storing cargo in reusable containers of uniform sizes and shapes for transport (Ndikom, 2011). It is noted that, before containerization, ships often needed to be in the port for upward of 10 days to complete the process of discharging and loading of goods within the confines of the port environment at the end of the day (Ndikom, 2011). It is very interesting to note here that, however, with the arrival of containerization, it is obviously seen that, the turn-round time for vessels carrying goods became significantly reduced, to just one to three days, depending on the number of boxes to be handled as being carried by the vessels at berth (Ndikom, 2011). Omole (2004) opined that this new invention came with a lot of economic advantages to all groups involved in freight transport process through the sea.

Modern ships require modern equipment for operations because of their design. However, Nigerian ports seem to lack the ability to adapt efficiently in order to meet the ever-changing and developing needs of industries. This is particularly the case where levels of public finance are no longer forthcoming and the economic crisis has reduced the capacity of governments to finance long term infrastructure. It should also be considered that the heterogeneous nature of the port sector increases the complexity of guaranteeing consistent development of the sector as a whole. According to PwC and Panteia (2013) report, port authorities are often limited in their ability to determine the level of dues, thus to impact on their resources and determine their operating income. Port costs account for a greater share of total cost associated with the logistics chain, when compared to direct transport by road.

For container ships, the most common problems are too few cranes (preventing the ship from working as many holds as the operator would like) or the absence of ship-to-shore gantry cranes (resulting in slower handling rates). Yard congestion caused by lack of space can also slow down crane handling rates on the berth. For bulk ships, the most common problem is lack of automation (ship loaders and pneumatic or screw discharge equipment linked to high speed conveyor systems to the storage area or plant); and poor interface arrangements for rail and inland waterway transport. Part of the problem is when customers or shippers want to reserve berthing windows so that scheduled services are not disrupted by unforeseen delays waiting for a berth; to negotiate service contracts with the port authority or cargo handling company giving them a guaranteed loading/discharge rate or ship turnaround time; dedicated storage areas within the port and extended cargo collection and delivery times. Of course, these always tend to cause commotions and confusion at the ports (Okorigba 2008).

The concept of concessioning is one of the offshoots of the privatization policy which is anchored on restructuring and structural transformation of the ports industry. Business in Nigeria has over the years, been pretty difficult mainly because of prohibitive cost and numerous administrative bottlenecks—a situation which frightens both local and foreign investors, despite the huge
investment opportunities in the country. The port industry is not an exception in all these problems enumerated above (Folarin, 2009). The Government however has risen to the challenge of creating a congenial business environment by introducing several measures aimed at minimizing such malaise in the port industry. From the foregoing above, this is one of such positive steps in the on-going port reform and privatization programmes (Ndikom, 2017). Indeed, this reform programme has yielded positive results, notwithstanding some unavoidable problems. The reform of Nigerian port falls within the overall privatization and concessioning programmes of the Federal Government. The reform policy is aimed at creating an environment that will lead to the development of Nigerian ports in line with the trends and tenants of the globalization of port services (Okorigba, 2004). In the light of this, the act of conceding or yielding as a right or privilege, to the privatization Nigeria’s eight sea ports is to make the country the very hub of shipping and port business in Africa. This is because this would ultimately lead to the upgrading of Nigerian ports to the world standard, in other to meet the stated objectives of the Bureau of Public Enterprises. (Folarin, 2009). Today, it is very obvious that the management and terminal operations in these concessioned ports are quite encouraging and commendable in terms of services offered and rendered at the end.

Ihenacho, (2005), posited that, substantial progress and infrastructural development have been recorded as cargo throughput across the terminals particularly in Lagos ports have greatly improved. Other aspect of the subsisting agreement involving port infrastructural development under a new terminal development plan are allowed for monitoring and evaluation of such progressive developments. Based on this, Folarin, (2009), stated that, the Nigerian Port Authority (NPA) is determined to maximize the opportunities offer by the reform policy to the development of all port facilities. He also asserted that NPA’s management is aware of the peculiarity of the port in Delta State. Apart from having the concession agreements signed slightly later than others, the challenges of youth and community restiveness which has been the bane of development in that area in recent years take its toll on the efficiency and effective operations of the ports (Ndikom, 2006). Also, he stated that the renewed effort by both the State Government and NPA is aimed at repositioning port in Delta State for improved ship container traffic. There is, however, still the question on which labour group (Rivers, Cross River or Lagos State) that, the new relationship between Delta State and NPA will join (Ihenacho, 2005).

Omotosho, (2009) posited that the impact of shipping company and terminal concessionaire services on port operations in Nigeria has been impressive and wonderful in terms of operational performance, productivity, vessel discharge rates, documentation and delivery processes and customer satisfaction. He stated also that the segmentation of port operations in line with the agendas, visions and missions of different terminal operators is the best thing that has happened to the Nigerian port industry. The further maintained that Nigerian ports have witnessed some operational development over the years, which have earned them a very increasing records in port cargo throughput, vessel turnaround time reflecting on an enhanced revenue at the end. This is because, the role of Government should be redefined in terms of its responsibility in providing basic infrastructures, such as road connectivity for the ports, land development and dredging of channels, while market forces should dictate freely all related port services. This, privatization and concessioning policies in the country have over the years ignited a strong revolution in the national economy and socio-economic status of the citizenry at large (Ihenacho, 2005).

Over the years, the emergence and concepts of containerization reflects the idea of storage arrangement of goods contained in containers with strong regard to the nature, sizes and volatility and delicateness of such goods loaded in the containers (Ndikom, 2011). Omole (2004) opined that, the total Nigerian containerized cargo throughput which was expected to reach 0.59 million TEU by 2005. He suggested that, the expectation was surpassed and that, today (at 2008), the
number of container traffic recorded was about 2 million TEU, due largely to the emerging trend of port restructuring efforts of government of the day and the sustained effort to solve the problem of port congestion.

Omole (2004) also opined that, the takeover of the port’s terminals by concessionaires, over the recent years, have really increased the container traffic process and therefore improved cargo throughput at the end. He also maintained the fact that, the establishment of inland contain deports (ICDs), bonded warehouses within the port environment and Container Freight stations (CFs) really affirmed the growth and increasing essence of containerization as an important aspect of shipping operations at the end. Omole (2004) also maintained that, container or the method of safe cargo packaging in shipping operations called containerization, is very unique in nature and the structure required good understanding in terms of type, capacity and sizes, or specification, usefulness, protection, damage management, repairs and, above all, technique of handling at the end.

Ndikom (2011) opined that, over the years, the port industry had indeed faced different challenges of serious insecurity problems both at the ports of origin and destination. He also maintained that, it is on record that, some essential goods with high premium have been lost due largely to insecurity of cargo in the ports. Ndikom (2011) seemed to have the exact opinion that, the introduction of containerized concept has really signposted a shift from the loose concept of cargo handling, which helped to solve this aged long problem. He maintained that, containerization gave assured hope for effective security of goods at the ports. He was of the opinion that, this development had reflected containers shipped from port of sail to port of destination to have a seal from the shipping line seal and the number is therefore forwarded to the export desk, together with the container number, so that, this is truly reflected on the bill lading and manifest respectively. He also advised that, the seal serves as a security device for preventing unauthorized entry into the container. This seal is also in important factor for consideration in claims arising from broaching of containers (Omole, 2004). He emphatically maintained that, the seal used for a full container is usually made of solid stainless steel, which cannot be easily broken.

Folarin (2009) was of the opinion that, over the years, the shipping industry was totally confronted with problems in relation to loading and offloading of goods, due largely to the nature of the packaging and arrangement of goods and the manner they were obviously conveyed. He maintained that, this reflected in the slow process of operations in both loading and discharging points; thereby affecting vessel’s turn-round time. He suggested that, the onset of the user of containers for specific movements of cargo has, indeed, transformed the whole process of delivery of cargo at the port of discharge, leading to increased turn-round time of vessels at the port of destination. Omotosho (2009) was of the opinion that, the introduction of containers in modern shipping trend operations for conveying goods from one place to another, onshore and offshore operations of vessels were very cumbersome and complex in nature. He opined that the nature of goods and the ways goods were arranged in loose forms. He suggested that, the containers made the shipping operations of these goods much easier, and less cumbersome; hence, optimum productivity of vessels and dockworkers was achieved. Ndikom (2011) was of the opinion that, the exact level of man-hour lost in the process of loading and offloading of cargo in a vessel before the introduction of containers was very high. He opined that, this was due to the nature and package arrangements of those goods at the point of loading, there was a lot of time and efforts wasted in getting on to the vessels. He also opined that, this problem was overcome by the use of containers; hence, there is increased productivity, efficiency and reduced man-hour loss in the process of loading and delivery of goods at ports of origin and destination (Ndikom, 2006).
METHODOLOGY
The study obtained and used secondary data covering a period of 24 years from 1995 to 2018 as it relates to the effect of concessioning policies on container traffic operations in Nigerian ports and its attendant consequences on port revenue. The study employed the use of descriptive, inferential statistics and trend analysis to analyze if container traffic can be predicted based on data from previous years of operations. Simple linear regression was also employed to ascertain the influence of container traffic on port revenue and T-test, to find out if there is any significant difference between the pre and post concession era.

RESULTS
Table 1: NPA abstract of port statistics on container traffic 1995-2018

<table>
<thead>
<tr>
<th>Year</th>
<th>Container Traffic</th>
<th>Year</th>
<th>Container Traffic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>196888</td>
<td>2007</td>
<td>431950</td>
</tr>
<tr>
<td>1996</td>
<td>199844</td>
<td>2008</td>
<td>612982</td>
</tr>
<tr>
<td>1997</td>
<td>236683</td>
<td>2009</td>
<td>653584</td>
</tr>
<tr>
<td>1998</td>
<td>286657</td>
<td>2010</td>
<td>685937</td>
</tr>
<tr>
<td>1999</td>
<td>344354</td>
<td>2011</td>
<td>839977</td>
</tr>
<tr>
<td>2000</td>
<td>344229</td>
<td>2012</td>
<td>880597</td>
</tr>
<tr>
<td>2001</td>
<td>483223</td>
<td>2013</td>
<td>992666</td>
</tr>
<tr>
<td>2002</td>
<td>545797</td>
<td>2014</td>
<td>1063486</td>
</tr>
<tr>
<td>2003</td>
<td>588593</td>
<td>2015</td>
<td>939379</td>
</tr>
<tr>
<td>2004</td>
<td>513954</td>
<td>2016</td>
<td>808587</td>
</tr>
<tr>
<td>2005</td>
<td>575242</td>
<td>2017</td>
<td>822706</td>
</tr>
<tr>
<td>2006</td>
<td>637055</td>
<td>2018</td>
<td>775842</td>
</tr>
</tbody>
</table>

Source: Nigerian Ports Authority Statistics Report, 2019

Table 1 above showed that, there is no significant difference between pre-concession era and post-concession era. In spite of the above statistic, the table showed that there has been a steady and progressive increase in cargo throughput from 1995-2018. It also showed that the container traffic movement within the confines of the port before the concessioning for example in 1995 and 1996 the difference is 11,581 and after the post concessioning the difference in cargo container traffic between 2007 and 2008 is 181,032. This showed that there is an increase in vessel turn around time at post-concession era and the pre-concession era thereby reflecting in ports efficiency, productivity and port output.

Table 2: NPA abstract of port revenue statistics 1995-2018
Year | Nigerian Ports Revenue (Billion) | Year | Nigerian Ports Revenue (Billion)
---|---|---|---
1995 | 182991.01 | 2007 | 1537895.78
1996 | 269092.02 | 2008 | 1894802.96
1997 | 265271.34 | 2009 | 2097271.42
1998 | 291013.97 | 2010 | 3032330.35
1999 | 316756.59 | 2011 | 4036179.20
2000 | 342499.22 | 2012 | 3922662.31
2001 | 368241.84 | 2013 | 3885813.36
2002 | 393984.47 | 2014 | 3725872.02
2003 | 668530.30 | 2015 | 3850358.18
2004 | 879744.52 | 2016 | 4642958.70
2005 | 1327732.60 | 2017 | 8207123.28
2006 | 1342247.87 | 2018 | 5347578.54


Table 2 above showed that between 1995 and 1996 within the pre-concession era, port revenue recorded an increase of 86,101 but came down in 1997 and subsequently showed a progressive increase in all the years from 1998 to 2006. In the post-concession era from 2007-2018 there has been a significant and steady increase in port revenue. This showed that there is an increase in ship turn around time and effective discharge process which is a function of massive investment in infrastructural facilities and equipment. This to a large extent improved the cargo throughput, port efficiency reflection in an increase of port revenue at the end.

Hypothesis One
H₀₁: There is no significant difference in the container traffic between the pre-concession era and post-concession era.

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concession Era</td>
<td>12</td>
<td>412709.9167</td>
<td>162017.07634</td>
<td>46770.30132</td>
</tr>
<tr>
<td>1995 to 2006</td>
<td>12</td>
<td>792307.7500</td>
<td>175657.98629</td>
<td>50708.09284</td>
</tr>
<tr>
<td>2007 to 2018</td>
<td>12</td>
<td>792307.7500</td>
<td>175657.98629</td>
<td>50708.09284</td>
</tr>
</tbody>
</table>

The above analysis of the findings from the pre-concession era showed a reflection of mean score of 412709.9167, a standard deviation of 162017.07634 and standard error mean of 46770.30132. The analysis of the findings from the post-concession era 2007-2018 showed a reflection of a mean score 792307.7500, standard deviation score of 175657.98629 and standard error mean of 50708.09284. It shows that the analysis of the findings above reflected a better operational performance of the port during the post-concession era than the pre-concession era.
The data was subjected to a t-test analysis, to find out if there is a significant difference between the container traffic before concession (Pre-concession) and after concession (post concession). The data revealed an F-statistics of 0.099 at p-value>0.05, indicating that the model assumed equality of variance, however a t-test value of -5.503 at p<0.05 was observed at df=22, which is greater than t-tabulated with value 2.074, thus indicating a significant difference between the two periods, with the negative sign, revealing that the post-concession era is better than the pre-concession era with a mean difference of -379597.8333. Therefore, the null hypothesis which states that there is no significant difference in the container traffic between the pre-concession era and post-concession era is rejected and the alternate hypothesis accepted.

**Hypothesis Two**

H$_{02}$: There is no significant change in container traffic with respect to years of ports operations.

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**Model Summary and Parameter Estimates**

**Independent Samples Test**

<table>
<thead>
<tr>
<th>Equal variances assumed</th>
<th>Levene's Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>Concession Era</td>
<td>.099</td>
<td>.756</td>
</tr>
</tbody>
</table>

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**Figure 1:** Shows the Mean container traffic in Nigeria before and after concession.
The table above shows the trend analysis of the container traffic for the post concession era, the data was subjected to linear, quadratic and logarithmic models to see if there is a significant change in container traffic with respect to year, and thus if prediction for further years can be made. The table indicated an R-square value of 0.839 or 83.9% at p-value=0.000<0.05, with f-statistics=114.275 for the three models, which is significant and fit for the model. Therefore predictions can actually be made from the data. This therefore rejects the null hypothesis that says “There is no significant change in container traffic with respect to years of operation in the ports for the post-concession era” and accepts the alternate hypothesis.
Figure 3: Container Traffic in Nigerian Ports from 2003 to 2010

Figure 4: Container Traffic in Nigerian Ports from 2011 to 2018
Hypothesis Three
H₀₃: Container traffic does not have any significant influence on ports revenue.

### Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>Std. Error of the Estimate</th>
<th>R Square Change</th>
<th>F Change</th>
<th>df₁</th>
<th>df₂</th>
<th>Sig. F Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.787*</td>
<td>.620</td>
<td>.602</td>
<td>1326895.89431</td>
<td>.620</td>
<td>35.826</td>
<td>1</td>
<td>22</td>
<td>.000</td>
</tr>
</tbody>
</table>

*a. Predictors: (Constant), Concession Era*

### Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>-1715407.003</td>
<td>708191.339</td>
<td>-.2422</td>
</tr>
<tr>
<td></td>
<td>Concession Era</td>
<td>6.501</td>
<td>1.086</td>
<td>.787</td>
</tr>
</tbody>
</table>

*a. Dependent Variable: Revenue*

In order to ascertain the effect of container traffic on ports productivity or revenue, the data was subjected to a simple linear regression analysis, to find out if there is any significant effect of container traffic on ports revenue. Table 4 above depicts a strong relationship between container traffic and ports revenue. It shows that 78.7% level of coefficient exist between container traffic and ports revenue. The coefficient of multiple determination denoted by R-Square is therefore strong thus indicating that the data does fit well in the statistical model (62.0%) since it is very near to 100%, therefore a reasonable amount of port revenue is been determined by container traffic, this therefore appears to be useful for making predictions since the value of R-Square is close to 1.

Also when the R-Square was adjusted for possible error in fitness an adjusted error of 60.2% was observed, this normally do serve as an indication that some other explanatory variable(s) by which without them the dependent variable (ports revenue) cannot be fully measured. Therefore, other predictor variables are needed to be sourced out in order to fully measure the dependent variable (ports revenue).

An F-test was also performed to determine if the model is useful for prediction at 5% level of significance.

The F-ratio was calculated of the predictor variable to be 35.826 with an alpha value of 0.000 which was found to be higher than f-tabulated value at 0.05 and df= 1 and 22 is 6.61. This therefore shows that the model is useful for predicting ports revenue based on container traffic.

On these bases we therefore reject the null hypotheses that say “Container traffic does not have any significant influence on ports revenue” and accept the Alternate Hypothesis.

### Summary of Findings

1. There is a significant difference in the container traffic between pre-concession era and post-concession era with t-test value of -5.503 at p<0.05 at df=22, which is greater than t-tabulated with value 2.074.
2. There is no significant change in container traffic with respect to year for the post-concession era with R-square value of 0.893 or 89.3% at p-value=0.000<0.05
3. There is a significant relationship between container traffic and ports revenue with r-square value of 0.787 or 78.7% at p-value=0.000<0.05

### CONCLUSION

Over the years, it is interesting to note here that the application of concessioning concept and reform policies on maritime sector have indeed changed the operational modalities of the port system and transformed it into a competitive venture among the concessionaires. This is because
such application of concessioning policy framework over the years broke the complexities and manipulative tendencies of doing business in Nigeria thereby, making the operations of the port more functional, friendly, effective and efficient at the end. Such policy initiative have led to infrastructure development of the Nigerian port, in line with the current globalization of the port services. This has attracted much private sector capital investment especially in the areas of infrastructure development and development of port areas into industrial sites. Thus, privatization and concessioning have initiated a powerful revolution for transforming the face of the nation’s ports industry thereby reflecting in the increase of larger movements of containers from one port to the other. This, to a large extent, has improved our nation’s cargo throughput and revenue at the end.

Recommendations
To sustain and enhance effective cargo trade and Container operations within the confines of the Nigerian ports, especially in Apapa port, Government must as a matter of urgency ensure that efforts that are targeted at increased cargo throughput must be put in place such as improvement in port infrastructure, security and other port operational services. The following are also recommended:

1. It is recommended that the government should make frantic efforts to seriously ensure that both rail line and rail sidings should be connected to each of the inland Container Depots across the six geo-political zones of the country at the end of the day. This is because, these infrastructural facilities if achieved will resolve the problems of port congestion, thereby increasing port’s output, productivity and efficiency of the port system.

2. It is also recommended that, the Government should as a matter of policy through the supervisory coordination of the Nigerian Shipper’s Council to ensure that all the approved ICDs should be functional in terms of effective operational modality through the effective rail movements of these goods to the ICDs as expected. This will serve as a fillip to the efficient functioning of our ports system at the end of the day.

3. It is expected that, the Government should ensure that more ICDs should be opened in all the thirty six states of the federation in the new efforts of the government agenda in linking all states with railway lines. This will help in ensuring a further decongestion of our main ports, thereby improving ports outputs and revenue generation at the end.

4. Government investment in all major and supporting roads leading to seaports in Nigeria, such as the on-going Apapa road construction should be fast forwarded in terms of adequate funding from government. This will to a significant extent enhance port productivity, eliminate port congestion and road traffic crashes within the of the ports environment.

5. The Federal Government through the Ministry of Transportation and other relevant agencies should provide adequate computerized facilities to the port to aid in the facilitation of the operations of the ports. This is to further enhance and speed up port operations, efficiency and productivity at the end.

6. The Federal Government and other concerns MDAs should as a matter of urgency address all issues relating to the poor interface of rail and water ways transportation within the ambience of the ports system. This is to stimulate inter-modal transport.

7. The Federal Government should understand clearly that about 90% of the Nigerian economy is based on shipping activities and therefore should ensure effective implementation of existing shipping/transport policy frame work initiation and where necessary come up with sustainable and achievable framework to further enhance port operational effectiveness and efficiency.

8. The Nigerian Port Authority (NPA and other relevant agencies should maintain and employ more equipment for cargo operations as it is necessary for the facilitation of port effectiveness.
9. There should be constant and consistent dredging and maintenance of the waterways, port terminals and other facilities as it will enhance sub-regional transshipment trade in the country.

10. There should be adequate port security to avoid unnecessary breakdown of operations and other fraudulent activities within the port.
REFERENCES


Buba, J.G (2005): the Nigerian Customs and the port reforms. Paper presentation at the first sensitization workshop on port congestion at Port Harcourt, River State.


