

## Assessment of Vessel Traffic and Customers Patronage at the Rivers Seaport, Port Harcourt, Rivers State, Nigeria

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**Abstract:** The seaport is the mainstay of maritime activities in any region, Therefore, the collapse or decrease in customer's patronage will invariably affect its productivity and the economy of that region. The Rivers Port has recently been affected majorly by its decreased in vessel traffic (cargo throughput) as a result of unfavourable government policies as regards to foreign exchange, amongst other notable challenges. Hence, the study assessed vessel traffic and customers patronage at the rivers seaport, Port Harcourt. The research adopted a questionnaire base study to enable adequate collection of raw and accurate data as a primary source of data collection (interview were also conducted) while the secondary data was extracted from academic journals, related research works and NPA bulletin that were consider relevant. They data obtained were analysed descriptively using tables and standard deviation. Findings show that cost, cargo handling facilities, berthing space and government policy are very relevant in examining port productivity/performance, it also revealed that the Rivers port is faced with challenges, such as inadequate dockworkers (179), constraints with a single mode of transportation, inadequate infrastructure (289), contributing to this shortfall in vessel traffic include; long ship turnaround time, unnecessary delay in clearing of cargoes, security challenges, inadequate cargo handling facilities, and high clearing charge based on these, the following recommendations were made, that government should unify various charge/taxes, strengthen it port policies especially on foreign exchange, and taxes. The P.T.O should ensure the provision and maintenance of modern infrastructural facilities and among others.

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**Keywords:** Vessel traffic, customers patronage, rivers seaport, cargo throughput

### 1. Introduction

The seaport is one of the terminal points of maritime mode of transport. It consists of a shoreline holding virtually the entire operation where goods and services are transferred by ship to or from land. This type of terminal is well located or sited to optimize the access to land and navigable water. Seaport transportation in Nigeria dates back to the 15<sup>th</sup> century (1484) with Portuguese agreement to sail into Lagos with vessels to trade on artifacts in Benin City (Olaogbebikan et al. 2014). According to Jaja (2009), the development in maritime transportation led to the opening of ports at Apapa and the Rivers port in Port Harcourt which advanced the creation of the Nigerian Ports Authority (NPA) by the provision of Ports Acts 1954 to load, discharge and manage the ports in Nigeria. One of the main reasons that led to the development of the Rivers port was based on the discovery of coal in Enugu. The seaport was used to ease the exploitation and eventual exportation of coal and support the importation of goods and services. It helped to contain the high volume of traffic this mode of maritime transportation receives. In spite of the vast

value of ports in Nigeria it has degenerated over the years, the Nigerian civil war (1967-1970) constituted a major drop in the support of Port development in Nigeria due to the closure of Port Harcourt seaport to foreign traffic. This made way for only the Lagos port services in Nigeria by the then military government which enacted a decree to Nigerian Ports Authority (NPA) to acquire all private ports in Eastern Nigeria (Shneerson, 1981).

Over the years, the operational malfunctioning of the Rivers port system and the corrupt tendencies of Port Users and Operators' have affected the total vessel traffic in the port. Both importers and exporters resorted to patronizing other seaports within and outside Nigeria such as the Lagos deep seaports, Cotonou port, and the Kpeme port in Lome Togo to avoid paying the exorbitant tariffs and other related port dues thereby affecting the total cargo throughput and reducing revenue to be generated by government. The Rivers port complex in 2009 recorded a decline in ship traffic by 4.38% over 480 vessels entered as against a positive variance of 2.67% over 449 vessels cleared in previous year 2008 (Akinyemi, 2016).

Cargo throughput excluding petroleum recorded an increase of 5.05% over 4,894,111 metric tonnes recorded in 2008. The Rivers port recorded a decrease in naira revenue generated by 5.03% and 52.27% over ₦731 million and ₦1.26 billion respectively. Due to the global changes in reforms, there were difficulties in operations around the port, various forms of shoddiness, lack of plants and equipments, bribery and other vices were all carried out by miscreants coupled with unscrupulous labour workers who choose to hold ship masters and agents to ransom after the payment of fees, and the poorly coordinated Federal Law enforcement system kept the fate of this sector hanging which triggered infrastructural decay.

An inefficient maritime activity in any nation is indirectly the collapse of the port system, which would negatively affect the maritime industry and the economy. Thus a nation like Nigeria that is greatly an import dependent nation would be affected negatively. Nigerian ports have not recorded a significant impact as they have been facing challenges ranging from lack of adequate infrastructure, corruption, congestion of cargoes, insecurity of cargoes and excessive charges. It has been reported that Nigeria ports are among the slowest and the most expensive port in the world (Chukwuma, 2014). These challenges have affected the productivity and patronage of the Nigeria port severely. As at the 1990s, Nigeria seaports were considered inefficient, unsafe due to massive cargo theft and one of the most expensive port systems in the world. This resulted in long ship turnaround time and increased container dwell time.

The Rivers Port has in the recent past known to be inefficient and unsafe due to uncoordinated policies and approach to maritime issues and activities, unconventional practices, inadequate inter-modal connectivity, loss of goods, and adhoc approach to maritime issues and high level of corrupt practices that were associated to its operations. This high ineffective practice have led to high cost of imports, resulting in long turnaround time for ships operating and imposing congestion surcharges. The turnaround time of ships for 139 general cargo vessels that completed operations during the year 2010 stood at 10.50 days as against 8.03 days in 2009, indicating an increase in ship turnaround time (Onyema et al., 2015). All this caused a lot of problems to the maritime sector and the economy at large. This has led to the unwillingness of the government to provide funds to restore the deplorable state of the port facilities which is as a result of the inefficiency and dwindling corrupt practices in the system.

There have been studies which have dealt with aspects of the concession (Akinwale and Aremo, 2010; Ogbhojafor et al., 2012; Okeudo, 2013); which was introduced eight years ago. All have looked at the

private sector concession brought about by the Federal Government but none have been able to look critically at how this concession is affecting the growth of the sea ports in terms of its impact on the ports in the country especially in southern Nigeria. The Rivers seaport is experiencing a significant drop in customers' patronage including its inflow (import) and outflow (export) unlike the Lagos sea port which continue to grow in operations, experiences high freight traffic and is seen as the number one sea port in Nigeria when other operational seaports exist in the country, some goods and services which can be moved to other ports in the country are seen taken to the Lagos Seaports first and later conveyed -to other parts of the country (Akinwale and Aremo, 2010; Ogbhojafor et al., 2012; Okeudo, 2013). This can be made easier by using the other relevant ports directly. This practice has continued to cause pressure on the facilities and infrastructure in the Lagos Seaport when other sea ports do exist and are under-utilised in the country. It was reported that operational problem confronting the Rivers seaport is the issue of vessel traffic (cargo throughput). It was reported that about five years ago, the vessel traffic in Rivers port recorded a decrease against the preceding year (Somuyiwa and Ogundele (2015). There was a decrease of 6.2% in 2013 in vessel traffic and 13.61% in gross registered tonnage (GRT) other challenges such as high forex exchange, long vessel turnaround time, elongated cargo dwell time, security issues, inadequate cargo handling facilities, high landing and clearing charges on the little or no patronage and shortfall of personnel (the personnel strength of the Rivers port at of 2010 showed a decrease by -1.45%).

The Rivers Port system has been in dire need of a reform strategy that would be based on port productivity and operational performance. This must be anchored on increased vessel traffic (cargo throughput). The relevance and efficiency of any port are tied to the degree of vessel traffic in that port, port productivity that is based on increasing patronage and the level of efficiency, effectiveness and vibrancy of a particular port operating within the confines of the law. Therefore the study examined vessel traffic and customers patronage at the rivers seaport. With a view to establishing a relationship between patronage and ship turnaround time, cargo throughput, tonnage of cargoes and berth occupancy in Rivers seaport.

It was reported that there is improved efficiency at the Onne & Rivers Seaport ports after the reforms of 2006, as cargo dwell time and turnaround time of vessels reduced to an average of 2.45 days as compared to an average of 6.85 days and 10.43 days before the reforms (Okeudo, 2013). It was equally found out that infrastructural modernization and equipment enhancement reduced delays of cargo

discharge at the ports thus increasing efficiency of the ports. The government sougheed clear-cut objectives that could improve service delivery in the ports. It was suggested that processes that can be employed to achieve improved delivery included: enhancing management capabilities, creating a competitive institutional, legal and regulatory framework, developing private participation in financing, management and operations of port facilities, achieve operating targets, including decreased costs to users, faster cargo clearance and vessel turnaround and reduce pressure on government finances (Pallis et al., 2008).

Nigerian ports before port concession in 2006 includes long turnaround time for ships, insecurity of cargo, unproductive labour force in NPA, multiple government agencies in the port, corrupt practices and excessive charges on cargos (Oghojafor et al, 2012). Studies identified cumbersome clearing system as one of the problems of poor port performance in Nigeria as the cargo clearing system depends on manual paper and physical movement of document to and from various processing centers located within and outside the ports (Somuyiwa and Ogundele, 2015).

Historically, the rivers seaport was flourishing economically within the period under review, whereas it later suffered some operational setbacks. And some of these operational setbacks are seen to be the conflicting roles and activities of multi-various security agents which are associated with the porous nature of the ports in the port complex, arbitrary, uncontrolled and uncoordinated charges, nuisance of wharf rats who pilfer and port related fraud (Brown, 2013). It was viewed that cargo diversion could be influenced by the location of the operational offices of choice carriers (Ogah, 2002). Most shipping firms are moving away to clinch with neighbouring countries from where they are transshipping goods into Nigeria. This action has been condemned by a section of maritime operators but the companies could be justified because of Nigeria's inconsistency and unfavourable policies.

Many port premises and quay aprons had fallen to disaster and failed road sections inside the ports which has made movement of goods within port grounds difficult and very slow (Ndikom, 2013). Following the seaport congestion, complaints of untraceable or missing cargoes were being regularly lodged against the NPA, all to no avail. Security inside Nigerian seaports was compromised by the relentless ingress of multitudes of all shades of persons into the seaports. As a result, miscreants called wharf rats easily gained access into the ports and pilfered goods in storage or vehicle parts. In fact, security within port grounds was at the mercy of an elusive racket. For instance the turnaround time at the Lagos Port

Complex is still 11days meaning no significant improvement since 2000, the turnaround time in 1990 was about 8 days, 7 days in 1991, 10 days in 1992 etc (Chikere et al., 2014). During this period, number of vessels visiting the ports declined accordingly. It was viewed that port authorities should impose surcharges on vessels if port congestion occurs, so that vessels would divert to other ports where facilities are underutilized (Oyatoye et al., 2011).

Inefficient working of seaports could ultimately affect the whole economy assuming that such port serves the whole country (Stephens and Ukpere, 2011). Vividly inefficiency could lead to loss of patronage in a situation where there are competent neighbouring ports in the region. Shippers could decide to land their goods in a more promising nearby port and bring them into the country through road freight modes/land borders. It is this practice that maritime experts refer to as cargo diversion. In relation to the study, so many authors agreed directly or indirectly with the variables identified for the study. It took into cognizance of the important variables which are of great interest. It is therefore, the trust of this research study to investigate in particular, the vessel traffic and customers patronage at the rivers seaport Port Harcourt.

## 2. Materials and Methods

The study was carried out in of Port and Terminal Operation (PTO), Nigerian Maritime and Safety Agency (NIMASA) and Nigerian Ports Authority in Rivers State. Port Harcourt is located in latitudes between 4° 44' 58.8''N and 4° 56' 4.6''N and longitudes between 6° 52' 7.2''E and 7° 7' 37.7''E (Figure 1). Port Harcourt experiences a tropical humid climate with lengthy and heavy rainy seasons and very short dry seasons. The city is endowed with abundant sunshine and the average temperatures are between 25°C-28°C in the city (Ogbonna et al., 2007). Port Harcourt is dominated by low lying coastal plains, which structurally belongs to the sedimentary formation of the recent Niger Delta, with an elevation less than 15.24m (Chiadikobi et al., 2011; Emenike and Akpu, 2017).

The study adopted descriptive research design and made use of questionnaire, oral interviews and observations. Observations were held on different occasions with the officials of PTO, NIMASA and Nigerian Ports Authority; to collect data on operational performance at the port. Data on port performance indicators were obtained from the Nigerian Port Authority (Rivers Port Complex). Questionnaires were administered to users through the various shipping agencies operating within the seaport. The study made use of twenty two (22) shipping agencies operating within the seaport at the time of

this study and comprised of 1044 personnel's. From this total, 289 respondents were randomly selected for the study using the Taro Yamane formula (Arokoyu et al., 2016). Multiple Regression analysis was used to test the relationship between patronage and ship turnaround time, cargo throughput, tonnage of cargoes, and berth occupancy in the rivers seaport: All analysis were carried out using SPSS version 20.0.

### 3. Results

#### I. Operational Performance Indicators of Rivers Seaport

Vessel traffic across all maritime sector is conventionally measured through certain parameters likened to port performance indicators. Port performance indicators can be measured through so many parameters which include: cargo throughput, ship turnaround time, port personnel, cargo traffic loss to other ports, labour and ship productivity, volume on container traffic, high tariff/port related charges, annual generated revenue (AGR), functioning /non-functioning plants and equipment, vessel delay time/period, berth occupancy rates, berthing flow rates of vessels, management control abilities and port charges dues. The operational performance indicators adopted for this study are Berth occupancy, ship turnaround time, number of ships and tonnage of cargo. Therefore the table shows the distribution of the operational performance indicators within ten years trend.

The means of berth occupancy, turnaround time, number of ships, and tonnage of cargo are presented in Table 1. The analysis on berth occupancy revealed that the year 2007 had the light berth occupancy period of 84.22 hours, this is followed by the year 2005 with 80.34 hours. However, the year with the lowest period of berth occupancy is 2013 and 2015 with 48.05 hours and 56.57 hours respectively. This shows an improvement over the previous years under review ranging from 4.55 hours to 80.34 hours. It was shown in Table 1 above that an average turnaround time of vessels in Rivers Port at various years under review, the general comparison between the years in review, show that the Rivers port have had the highest vessel turnaround time of 12.46 days (2011) and 12.24 days as the second highest in 2005. In recent years under review 2013-2015, the port recorded the low at 6.83, 8.41 and 8.37 respectively, projecting to the port efficient operation in recent past. The standard measurement of average turnaround time, which is a primary indices for port performance per ship is at 24 hours (Emeghara and Ndikom, 2012). However, for shipping lines port efficiency and cost are major factors in deciding whether or not to call at a port (Emenike and Baridoma, 2017). The Rivers Seaport under the period of review recorded the highest cargo

throughput in 2011 followed by 2006 which stood at 475 vessels. While in 2010, the port recorded its third highest in ten (10) years at 473 vessels. In recent years between 2014-2015 the seaport was faced with a slight decrease in vessel/ship traffic between 253 and 218 vessels respectively gearing towards the early parts of 2016 when the country is faced with economic challenges resulting to government policy on forex exchange and other economic situations.

Furthermore, the gross registered tonnage (GRT) of 3,471,432 was registered in 2005 at the Rivers Seaport; the port experienced the highest cargo tonnage in the year 2011 at 7,463,801, while the lowest was recorded in 2006 at 3,001,019. Towards the recent years between 2014 and 2015 the port has witnesses a more decrease in vessel traffic but with adequate corresponding tonnage of 5,987,181 and 4,454,987 when compared over the years. The number of vessels in 2009 (ship traffic) showed a decline by 4.38% over 480 vessels entered as against a positive variance of 2.67% over 449 vessels cleared in year 2008. Cargo throughput for the current year excluding crude petroleum recorded an increase of 5.05% over 4,894,111 metric tonnes recorded in year 2008. In 2010 ship traffic recorded an increase of 6.01% and 2.60% when compared with 459 and 461 vessels that entered and cleared in the previous year. Similarly, Gross Registered Tonnage (GRT) of vessels that entered and cleared in the review period recorded an increase of 6.97% and 5.36% over 5,972,549 and 5,969,838 achieved in the previous year 2009. Cargo throughput for 2010 excluding crude petroleum showed an increase of 12.97% over 5,141,451 metric tonnes recorded in the year 2009. Ship traffic recorded a decrease in 2012 by 19.86% and 18.55% when compared with 461 and 566 vessels that entered and cleared in 2011. Gross Registered Tonnage of vessels that entered and cleared in 2012 recorded a decrease by 13.32% and 12.57% achieved in the year 2011. Cargo throughput for the year 2012 excluding crude petroleum showed a decrease by 25.13% over 7,463,801 metric tonnes recorded in 2011. In 2013, 439 ships with 4,935,944 Gross Registered Tonnage entered the port against 468 ships with 5,574,653 GRT that entered in 2012. A decrease of 6.2% and 13.61% was attained in ship traffic and GRT. In the last two years under review, the Rivers seaport experienced a drastic decrease in ship traffic that is 253 and 218 vessels in 2014 and 2015 respectively, recording its lowest ship traffic in the last (10) ten years.

In view of the above, the Rivers Port complex do experience various fluctuations in vessel traffic over the years but witnessed its highest in 2011 at 566 vessels and its lowest in recent years at 218 vessels in 2015 spreading towards early parts of 2016. Following the secondary data generated from the NPA annual



Reports, the Rivers port is experiencing its normal vessel traffic as stated, despite in recent years where government policies in terms of forex exchange is affecting its users from carrying out their normal operation, resulting to its shortfalls in vessel traffic. The operational capacity of the seaport is adequate enough to carter for its vessel traffic as the seaport is a small one in terms of size and the initial aim of its existence. From the survey 100% of port users agreed that the port is adequate enough to accommodate the patronage, only falling to the challenges of economy situation. Therefore cargo throughput has a significant impact on any port, that is the inflow and outflow of vessels that call at a port with a maximum gross registration tonnage can burst the economy of that seaport and the country at large thereby increasing the internally generated revenue (IGR) of that nation. And if the number of vessels traffic is limited in terms of its

capacity, it will invariably affect the economy of the maritime sector.

It can therefore be deduced that port efficiency and customers patronage does not only rely on vessel traffic/tonnage as it is not a major factor of the above rather other variables such as cost, cargo handling facilities, government policy and berthing space should be considered. Ship turnaround time cannot be measured for 24 hours owing to the fact that, the variation on the type of cargo/goods matters, and other factors such as adverse weather condition like heavy rainfall, etc., can prolong/extend a vessel turnaround time. Exclusively, turnaround time of a ship as gathered from this survey can be more than 24 hours resulting from deliberate delays from port terminal operators. Therefore, flexibility of turnaround time for a vessel depending on the type of cargo carried should be adopted.

Table 1. Rivers Port Ship, Cargo Traffic and Performance Indicators (2005-2015)

Year	Berth occupancy	Turnaround time	Number of ships	Tonnage of cargo
2005	80.34	12.24	453	3,471,432
2006	78.52	11.71	475	3,001,019
2007	84.22	9.99	446	3,112,518
2008	65.86	9.57	449	3,127,222
2009	75.58	8.03	461	3,384,160
2010	70.31	10.5	473	3,575,210
2011	64.55	12.46	566	7,463,801
2012	68.61	9.84	468	5,574,653
2013	48.05	6.83	439	4,935,944
2014	72.53	8.41	253	5,987,181
2015	56.59	8.37	218	4,454,987
Mean±Standard Deviation	69.56±10.6	9.81±1.8	427.36±101.1	4371647.91±1462067.6

Source: Emenike and Baridoma, 2017

## II. Factors Attributed to the State of Vessel Traffic at the Rivers Seaport

The factors of the rivers seaport that contributed to the low customer patronage of inflow and outflow of vessel traffic are presented in Table 2. The process of handling and clearing cargo at a port is yet to fully witness the gain of the last Nigeria Port System Reforms. Despite cargo handling operation were sublet to Private Terminal Operators, the gain of port reform is still far fetch and being limited by issues around damage, loss and especially delay of cargo at the port. The survey revealed that the seaport terminal operators Association of Nigeria (STOAN) shifted blame to inconsistent government policies, improper documentation by port users and under-declaration of cargo tonnage by importers as factors dwindling service delivery at the seaport.

The importance of port infrastructural facilities cannot be overstated as it negatively affects import and export especially as port would be struggling to

cope with cargo traffic. Therefore the Rivers seaport would be unable to handle the container and vessel traffic despite in this present economic situation. Due to the notable infrastructural problems which in turn contribute to delay in cargo export, the available functional ones are over-stretched and there is a berthing delay of several days. The berthing delays and operational bottlenecks/bureaucracy have affected vessel traffic to call at the port thereby constituting one of the reasons for diversion of vessel traffic to other seaports.

The size of the Rivers seaport complex is in relation to its initial intent of establishment by the colonial masters. The shallowness (depth) of the water is a major challenge to the size of acceptable vessel that is not more than (8) eight meters, this pose a lot of constraints to its vessel traffic over the years. The standard minimum width for deep-draft non-containerized ships using one side discharge is 60 feet, or 90 feet for two-side discharge. Container ships

require 80 feet and lighter ages either 35 or 42 feet. The minimum required depth below means low water by the draft of a ship, for deep-draft non container ship is 30 feet. For high speed container is 12 feet. In view of this analysis, the maritime industry has been performing quite well except in recent time where government policies are having an adverse effect on vessel traffic, which is the essence of any maritime

sector; there has been a reduction in the volume of cargo coming into the rivers port in the last few months. Some of these policies like the Central Bank policy on forex and the ban on importation of certain goods has not helped. According to the seaport terminal operators most of the seaport across the nation especially the Rivers port is operating at 30 percent to 40 percent of its usual capacity.

Table 2. Factors attributed to the state of vessel traffic at the rivers seaport

Factors	Observations
Unnecessary increase in vessel turnaround time.	164
Diversions of vessels to other seaports (Lagos Tin-Can Island and Apapa Wharf)	206
Inadequate infrastructure especially at the terminal/quarry axis to shield against adverse weather conditions that distort operational processes.	289
The seaport is constrained to just one (road) mode of transportation to ease mobility of goods out of the port.	281
Security across the waterways is porous.	201
Shallowness of the water (depth)	265
Vessels above 8 meters cannot berth at the seaport	289
Inadequate labour – field labourers	179
Unfavourable government policies, in relation to forex exchange and placing of embargo on certain commodities	269
The small size of the seaport, affects its capacity at a go	289
Variation in terminal operators policies	195
Bureaucracy in terms of document processing	205

### III. Operational Characteristics of Rivers Seaport

From Table 3, the Rivers Seaport operates between the hours of 8am to 6pm daily exception for certain cargo vessels that might extend to 24hours or beyond while the port operates in (8) eight terminals which include: berth 1-4 is managed by Port Terminal Operators Limited and berth 5-8 is managed by BUA Port and Terminal. The interview conducted revealed that port operators most times tend to delay vessels clearing and discharging of cargo/goods, etc. to attract additional charges thereby increasing berth occupancy rate and ship turnaround time. Also, there are other challenges that could extend the clearing and discharging of vessels/goods such as adverse weather condition, limited dock/field workers, and other logistic challenges. The research found out that 100% of port users agreed that the berthing space/quay for Rivers port is adequate. Though, the seaport is naturally small in size compared to other neighbouring seaports due to the fact that it was constructed by the colonial masters for the purpose of exporting coal and other minor products outside the shores of Nigeria. Invariably as a result of urbanization and the fast growing nature of Port Harcourt city residential and commercial building has taken care of the available space around the port that would have been an alternative for expansion. Vessel traffic into Rivers seaport has declined over a short period of time at

58.1%. This implies that, in the course of this study the Rivers seaport witnessed a drift from its normal traffic inflow over the years due to this major factor; that is, the recent government policy (increase in forex exchange). From the survey analysis, 100% of port users agreed that government policies at all levels has impacted negatively in doing business with the Rivers seaport. Most of these policies relates to total/partial ban on some major consumer's commodities, issues relating to forex trading/exchange rate or incentives/waivers to certain commodities to be imported. In line with the above, 55.3% of port users agreed that government is doing enough to attract cargo vessels into the Rivers Seaport but not as they do to other alternative seaports within the country like the Lagos Seaport.

Multiple regression analysis in Table 4 showed that number of ship was significantly related to the sea patronage in the study area ( $p=0.014$ ). Generally, number of ship, tonnage of cargo, berth occupancy and turnaround time had a strong multiple relationship with seaport patronage ( $r=0.935$ ,  $p<0.05$ ) while the coefficient of determination ( $r^2$ ) was 0.875 (Table 5). This shows that the number of ship, tonnage of cargo, berth occupancy and turnaround time can explain 87.5% of the vessel traffic (Seaport patronage) in the River Seaport. The multiple regression analysis therefore shows that the degree of vessel traffic is a

function of berth occupancy, turnaround time, tonnage of cargo and number of ship.

Table 3. Operational Characteristics of Rivers Seaport

Port	Operational hours	Terminals	Duration of cargo clearance
Rivers port	8am – 6pm, 24 hours (if need be)	Operate on (8) eight terminals; as berth 1-8	Average of 48 hours

Table 4. Multiple Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	3.709	.644		5.756	.001	2.132	5.285
1 berth occupancy	-.014	.008	-.328	-1.678	.144	-.035	.006
1 turnaround time	-.054	.052	-.209	-1.033	.342	-.181	.073
1 tonnage of cargo	5.707E-008	.000	.179	1.049	.334	.000	.000
1 number of ship	-.003	.001	-.593	-3.434	.014	-.005	-.001

1. Dependent Variable: vessel traffic (Seaport patronage)

Table 5. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.935 <sup>a</sup>	0.875	0.791	0.213

a. Predictors: (Constant), number of ship, tonnage of cargo, berth occupancy, turnaround time

#### 4. Conclusion

The study has been able to reveal certain findings in an attempt to examine vessel traffic and customers patronage at the rivers seaport Port Harcourt. The efficient function and patronage of the Rivers Seaport is not only a function of its operational performance indices but can also be measured via cost (charges), government policy, berthing quay/space, cargo handling facilities, and security. Based on the findings of this study, the study therefore suggested that government should strengthen its port policies with appropriate laws and legislation to empower private terminal operators to provide, maintain modern infrastructural facilities at the seaport complex; there should be provision of multimodal transportation system from the seaport to ease mobility and transfer of discharged goods; there should be adequate employment of workers including the dockworkers-field labour; government and Nigerian Port Authority should endeavour to unify various charges and taxes with other seaport across the country to foster uniformity in operation; operational facilities should be made functional; government policies toward seaport operations should be open to all ports across the country and incentives should be extended to all ports rather than a few where vessel traffic would be congested in an area/region of the country; policy makers within the maritime industry should review the port performance indicators to include cost, government policy, berthing space and handling facilities rather than the conventional variables; incentives and special policies given to one seaport or the other based on its location, should be given to all for equality and fairness across the country to enable

adequate vessel traffic; and government and relevant stakeholders should collaborate on acquiring properties of immediate cultural environment for the expansion of the Rivers seaport complex and gradual dredging of affected areas.

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