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ABSTRACT

Seaports play a vital role in global trade and commerce, serving as gateways for the movement of goods and facilitating economic growth. With the globalization of the world economy bringing changes into the port industry, Nigeria government is not left behind in evolving and embracing strategies for improved ports performance. Hence, the initiation and implementation of concession of the nation’s seaport located in Apapa, Tincan and Onne. As a result, this study has examined the users’ perception of the concession and the performance of Onne seaports in River State Nigeria. The study is anchored on the Productivity Model and the Concept of Seaport Concession. Also, both primary and secondary data were used for this study. The use of questionnaire was deployed to elicit data on the port performances at the pre and post Concession vis-à-vis users’ perception of the cargo throughput, vessel turnaround time, berth occupancy ratio, vessels call and labour productivity ratio. Also, data was collected on the factors such as automation of port services, port accessibility, multiplicity of government agencies, modern equipment, and inter-modal transport network. The collected data was analysed descriptively and inferentially. Findings revealed that improvement in ports operational parameters including the Average turnaround time (ATRT), Berth Occupancy Rates (BOR) and Cargo Throughput (CART), the post concession indicators are port users (consumers) satisfaction of port products (PUSPP), the quality of services provided at the real time (QSPRT), and the accessibility of port users to port environment (APUPE) after the concession. The study however, concluded that ports concession has brought significant improvement to operations and activities as well as the usher in a major relief to various categories of users; hence, the need to sustain and consolidate the gains recorded in seaport operations and performance at the post-concession period at Onne Seaport. Hence, the study recommended the consolidation of ports concession in line with the trends in the maritime sector and to further evolve mechanism for reducing cost of transit, enhancing quality services, encouraging cheap and users’ friendly ports among others.

Keywords: Port Concession, port productivity, port performance, port users and Onne seaport, Nigeria
1.1 Introduction

Seaports play a vital role in global trade and commerce, serving as gateways for the movement of goods and facilitating economic growth. The globalization of the world economy, no doubt has brought changes into the port industry. Meanwhile, seaports play major roles in the global trade logistics chain process which impacts heavily on the cost of many exported and imported goods (World Bank, 2016). However, the economic downturn of the 80s which triggered infrastructure obsolescence and decay in the maritime industry of most nations and accompanying low investment in ports infrastructure contributed to efficiency, and declining performance of many seaports.

Also, it has become evident that the government had no resources, or the managerial ability to effectively run a modern port successfully (Okeudo, 2013). The global trend in recent times favoured governments’ disengagement from port operations, and restricting her activities to regulation and the provision of enabling environment for the private sector to operate through concession contracts. Therefore, in order to efficiently manage and develop seaport infrastructure, many countries around the world have implemented seaport concession arrangements which involves the transfer of certain rights and responsibilities of port operations from the government to private entities for a specified period. In this wise, a concession is a grant by a government or port authority to a (private) operator for providing specific port services, such as terminal operations or nautical services (e.g., pilotage and towage) which are hitherto provided by government.

In this context, seaport concession refers to the transfer of a seaport's management and operation from the government to a private company or consortium for a specified period. This concept has gained widespread popularity due to the many benefits associated with it, including increased efficiency, modernization, and revenue generation. For instance, the concession of the Port of Antwerp (Belgium), Port of Rotterdam (Netherlands) and Port of Colombo (Sri Lanka) lead massive infrastructure investment by the private consortium, efficiency and increased productivity making the concept an outstanding prototype of seaport concession arrangement in the world (Tongzon & Hengz, 2005).

In the same way, seaports in Nigeria are gradually moving away from being publicly operated to engaging the private sectors in terminal operations through concessional arrangement. Being a contractual agreement between a port authority and a private company or consortium that grants the right to operate and manage a seaport facility for a specific period of time, seaport concession is to enhance the efficiency and competitiveness of the seaport, attract investments, and improve the quality of services. As a result, Akinwande and Aremo (2010) opine that the government’s role in port management is declining, while that of the private sector management and operations is waxing.

In Nigeria, container ports are facing unprecedented challenges under the context of increasing competition as users who interact with these ports are more likely to choose those that have optimal performance in efficient operations and service delivery. It is on this basis that the Federal Government of Nigeria embarked on Ports reforms and concession policy that allowed the transfer of certain ports operations and infrastructure provision and maintenance to private organisation. Therefore, this study appraised the users’ perceptions of the performance of Onne ports concession, Nigeria with a view to determine the
realization of the ports concession goal in the country.

2.0 Literature Review

2.1.1 The Productivity Model (Triple Ps Model)

Tangen (2004) attested that developing countries have taken their initiatives to improve upon the performances of their ports. Therefore, efforts are been targeted towards the port’s productivity by many maritime countries of the world. Productivity is the central core of the Triple P-model (figure 1), and rather has a straightforward operational definition as a relationship between the output quantity that is correctly produced and inputs quantity that may include all resources consumed in the transformation process (Jackson, 2000). Port performance is a construct of Profitability, and Productivity, also the attributes of quality, delivery, speed, flexibility, and price recovery.

In addition, performance is the umbrella body of excellence that embraces profitability and productivity as well other non-cost factor as well as quality, speed, delivery, and flexibility. Accordingly, Tangen (2002), described efficiency to mean speed, and reliability of port services that can be reflected in the freight rates charged by shipping companies, turnaround time of vessels, cargo dwell time in the ports. Furthermore, efficiency is strongly related to the utilization of resources, defined as the minimum resources level that is required to run the desired operations in a given system and is compared to how much resources that are actually used. In addition, efficiency is often referred to the utilization rate (i.e., the degree of utilization) meaning how much equipment or a process is used in practise compared to its maximum. Effectiveness and efficiency are cross-functional, whereas effectiveness represents the degree to which the desired results are achieved, efficiency represents how well the resources of the transformation processes are utilized.

Braid (2000), described the effectiveness of a port as “doing the right things” and in the other hand, effectiveness is often linked to the creation of value for port consumers, and often influenced by the output of the production ratio. Simply, effectiveness is described as the “ability to reach a desired objective or the degree to which the desired results are achieved”. While efficiency means “doing things right,” that can lead to the creation of value - addition to the output in a production process. The utilization of minimum resources, can influence the input factors of productivity process, thus, creating added value for the port’s consumers, and at the end affects the ratio of productivity.

Profitability is the overriding goal for the success and growth and can be defined as ratio between revenue and cost (i.e., profit and assets) and it could be stated that an increase in productivity does not necessarily lead to increase in profitability. Profitability is the relationship between output and input but also, includes the influence of price factor (i.e., Price recovery) inclusive. Performance is excellence and includes quality of services, speed, service delivery and flexibility (West, 1999). Also, Jackson (2000) states that the single good focus on efficiency does seem to be a fruitful way to increase productivity. Unfortunately, such single factor is often the case in the port industry, especially, when cost-cutting activities are employed. However, in a combination of high values of efficiency and effectiveness, in a transformation process can lead to a high productivity; thus, it is possible for an effective system to be inefficient it is also possible for an efficient system to be inefficient.
2.1.2 Concept of Ports Concession

The concept of seaport concession has evolved significantly over the past few decades. Initially, seaport management was entirely under the control of government entities, but the increasing demand for efficient and effective port services has led to the adoption of new approaches, including the concession model. This concept which was influenced by neoclassical economics and public choice gained prominence during the wave of privatization and liberalization that swept through many countries in the 1980s and 1990s when governments sought to reduce their direct involvement in economic activities and encourage private sector participation (Abdou and Mashiri, 2009). In other words, the concept of seaport concession evolved as a means to enhance efficiency, encourage private sector participation, and improve port infrastructure and services. This concept, according to Brooks (2005), involves the transfer of certain port operations, management, and investment responsibilities from the government or port authorities to private entities through long-term contractual agreements or concessions. By granting concessions, governments aim to leverage private sector expertise, capital, and innovation to optimize port performance and foster economic growth. The evolution of the seaport concession concept can be traced back to the late 20th century when various countries initiated reforms to liberalize their port sectors.

Also, Ndikom (2008) opine that these reforms were influenced by changing economic and political landscapes, globalization, and the need for modernization. In this regard, one of the earliest examples of seaport concession can be seen in the United Kingdom with the privatization of the port of Felixstowe in 1983 which was followed by countries...
such as Australia, Chile, and the Netherlands, which implemented similar models in the subsequent years. One significant milestone in the evolution of seaport concession is the introduction of the landlord port model. This model also known as the landlord-tenant model, according to Slack (2005), separates the landlord functions (port authority or government) from the operational functions (private concessionaires). The landlord port model provides a framework where the port authority retains ownership of the port infrastructure and focuses on strategic planning, regulatory oversight, and infrastructure development, while the concessionaires are responsible for day-to-day operations, maintenance, and investment in equipment and technology. This model aims to create a clear division of roles and responsibilities, allowing for specialization and efficiency gains.

2.2 Empirical Review of Literature

Scholars over the years have expressed the mix-feeling of concession and established that seaport concession can bring significant benefits to both the government and the private sector, despite the fact that the practice poses challenges that need to be addressed. Specifically, researchers and scholars have examined various issues influencing and affecting seaports across the globe over the years. For instance, Notteboom & Rodrigue (2005) examined the trend of port regionalization, which is closely related to seaport concession and as such, x-rayed the benefits and challenges of seaport concession, and how it can contribute to port regionalization by providing case studies of seaport concession in Europe, Asia, and North America. Moreover, Brooks (2009) proposes a conceptual model of the seaport concession process and the interface between the port authority and the private sector in which insights into the key factors that influence the success of seaport concession projects, including risk allocation, contract design, and performance monitoring are highlighted. In another study, Chen & Notteboom (2011) investigated seaport concession model in China, which has become one of the most active markets for seaport concession in the world, and identified that the key challenges facing the Chinese seaport concession model, include regulatory issues, institutional frameworks, and competition among ports.

Seaport concession is an effective tool to enhance the performance, efficiency and competitiveness of seaports and several studies have documented the examples of performance of seaport concession in recent times. For instance, The DP World (2017) x-rayed the benefits of concession to the Port of Antwerp, Belgium which is the second-largest seaport in Europe, handling over 238 million tons of cargo per year, but with it concession agreement with a consortium led by DP World for 42 years, and the consortium invested €197 million in the project and not only improved the capacity of the port, but also equipped it with the latest technologies, such as automated stacking cranes and optical character recognition. Also, the Port of Rotterdam, Netherlands handling over 460 million tons of cargo per year was concession to APM Terminals (2018) for 30 years for the construction and operation of a new container terminal on the Maasvlakte, and the consortium invested €750 million in the project. Accordingly, the new terminal, named APM Terminals Maasvlakte II, has a capacity of 4.5 million TEUs and is equipped with state-of-the-art equipment and software, such as automated guided vehicles and a terminal operating system. The Port of Colombo, Sri Lanka which is also the largest seaport in Sri Lanka, handling over 7 million TEUs of cargo per year was concession to a
Seaport performance which is influenced by a range of factors, including infrastructure, technology, labor, and government policies is the ability of a seaport to efficiently and effectively handle the flow of goods and services through its facilities, including cargo throughput, vessel turnaround time, and overall productivity. In a study by Zhang and colleagues (2019), it was found that seaports with modernized and advanced infrastructure are able to handle larger volumes of cargo and vessels, resulting in improved seaport performance. Additionally, the use of automated equipment and advanced technologies, such as container scanners and automated guided vehicles, has been shown to improve seaport performance by reducing vessel turnaround times and improving cargo handling efficiency (Chen, Notteboom & Zhang, 2019). Moreover, Nguyen, Truong & Liu, (2016) opine that the availability of skilled and efficient labor can improve seaport productivity and reduce vessel turnaround times, while labor disputes and strikes can have a negative impact on seaport performance, as demonstrated in the West Coast port congestion crisis of 2014-2015; hence, effective labor management and strong labor relations are essential for maintaining seaport performance. Meanwhile government policies and regulations play a role in seaport performance. In this regard, policies that support the development of seaport infrastructure and technology can improve seaport performance, while excessive regulations and bureaucracy can hinder seaport efficiency and productivity. In a study by Cheng and Song (2018), it was found that favorable government policies, such as tax incentives and funding support, can lead to increased investment in seaport infrastructure and technology, resulting in improved seaport performance.

3.0 Materials and Methods

3.1 Study Area

The focus of this study is Onne Port situated in River State, Nigeria. Specifically, Onne port complex is located at the centre of the Niger Delta and was developed to support the Port Harcourt Port capacity and traffic. It is situated on the Bonny estuary along Ogu creek at latitude 4° 39’N and longitude 7° 9’ 30”E. Onne port operates the landlord port model before the emergence of the privatization of the nations’ ports under the Public Private Partnership (PPP) arrangements. The Port complex as shown in Figure 1 is made up of the Federal Ocean Terminal (FOT) which has a Draft of 10 meters (low tide), industrial area of about 500,000m² and the warehouse of about 46,000m² and Federal Lighter Terminal (FLT) which has a Quay Length of about 1,675 meters, the Draft during low tide is about 8 meters high, Industrial Areas coverage 400,000 m² and the warehouse Area total areas length 33,000m². Also, the West African Container Terminal (WACT) located at the FOT, Onne has a staking area that measures about 165,000 m² and the berth length of 750 meters, operated by Maersk line limited and also, covers the Nigeria Liquefied Natural Gas jetties, NAFCON (now known as Notore jetty) and Bonny 9 (mid-stream discharge).
3.2 Methods

This study makes use of both primary and secondary data in line with the aim and objectives of the research. Data was collected through the administration of three hundred and thirty six copies (236) of questionnaires to the users in the Onne Port Complex. Data was collected on the port performances at the pre and post concession vis-à-vis users’ perception of the cargo throughput, vessel turnaround time, berth occupancy ratio, vessels call and labour productivity ratio. Also, data was collected on the factors such as automation of port services, port accessibility, multiplicity of government agencies, modern equipment, and inter-modal transport network.

The secondary data were obtained through the examination of data, based on archives of official documents, publications from annual reports, daily / yearly handbooks of Nigerian Port Authority (NPA), the terminal ports (concessionaires) from 1994-2019. Other sources include World Bank reports covering the period of this study 1994-2019, Central Bank of Nigeria (CBN) annual reports and bulletins of Nigeria Customs Service (NCS) etc., information from the data base of Nigeria Customs Service (NCIS 2-Nigeria Customs Integrated Systems II), publications /journals, magazines, printed and internet/websites related to maritime industry.

4.0 Results and Discussion

4.1 Socio-economic Characteristics of Respondents

This section presents the results of data analysis on the socio-economics attributes
of respondents administered with the questionnaire at Onne Seaport, Nigerian. The results in this sub-section include the analysis of age, sex, educational background, marital status, workplace/organisation, and duration of the position in the organisation.

It is important to state that the result of the data on gender classification of respondents revealed that a larger proportion are male (67.9%), while almost one-third are females (32.1%) are Females. Moreover, data on the age of respondents which was analysed and the results presented in Figure 2 showed that 22% of the respondents are between the age group 18-25years, while 7.8% (18) of the respondents are between the age group 26-35years, while 17.8% (41) and 35.7% (82) of the respondents are between the age group 36-41years and 41-49years respectively. However, the percentage of respondents whose ages are 50 years and above was 36.5% (84). This is an indication that majority of the respondents are not teenagers, but comprising of working age population who are agile and full of energy at the Seaport.

![Figure 2: Distribution of the age of respondents](Source: Field Survey, (2019))

With respect to the educational attainment, results of the analysis presented in figure 3 revealed the 35.9% of the participants had bachelor’s degree, 16% are master’s degree holder, 5% had a PhD, while 24.3% and 17% (35) of the respondents are HND and OND holders respectively. However, the remaining 6.3% of the respondents possessed Senior secondary School Certificate. Invariably, it can be deduced from this analysis that there is high literacy level among the workers and operators at the Onne seaport and the port is dominated by users with varying level of education.
The results of data analysis on the marital status of respondents are presented in figure 4. Accordingly, the results revealed that majority of the respondents are married (87.7%), while only 12.3% are single. This result shows that the users and operators of the seaport are matured and responsible family people with varying numbers of households and dependants. Hence, the tendency for commitment and passion for the job which gives them earnings for the sustenance of their families and livelihoods.

In addition, data was obtained on the work place/organisation of respondents. In this wise, Figure 5 revealed that 12.4% of the respondents work as Terminal Operator, while 22.1% are Freight Forwarders and 14.6% are Shippers or Importers. Also, 10.6% (24) and 13.7% (31) are Shipping Agents and Carriers respectively, while 9.7% (22) and 13.7% (31) of the respondents are from the Nigerian Ports Authority (NPA) and Nigerian Customs Service (NCS) respectively while 3.1% (7) are others.
4.2 Measurement of users’ perceptions of the pre and post concession

This section examined the users’ perception of the pre and post concession of the three (3) selected ports in Nigeria. From Table 1, it was found that port users in Onne poorly rated their satisfaction of the port services at Pre concession period (mean =1.86), while they rated their satisfaction at Post concession as good (mean = 3.12). At Pre concession, port users in Onne poorly graded the clearance of cargoes, and the provision of adequate and modern critical infrastructures and equipment (mean =1.90 and1.66), but rated same good at Post concession (mean = 3.18 and 3.56). They further perceived the managerial competency of the terminal operators as fair (Mean = 2.08) and poorly rated the relevance of ICT in cargo clearance at Pre concession (Mean = 1.53), but both were rated good at the post concession (mean = 3.43 and 3.80).

Also, port users’ perception of the performances of Onne port in Nigeria at Pre concession was poor (mean = 1.84) while it was graded good at Post concession (mean = 3.49). Meanwhile the level of corruption at the pre concession was rated low (mean = 1.69) to that of the post concession which high (2.96). The perception of port users in Onne at concession was good compared to the pre concession. The Users rated relevance of ICT in cargo clearance as most perceived good, while they assess the levels of corruption at Pre & Post concession at Nigerian seaports was perceived as least at concession in Onne.
### Table 1: Users’ perceptions of the pre and post concession of Onne port

<table>
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<tr>
<th>Statement on Pre and Post Perception of Port Users in Onne</th>
<th>Mean</th>
<th>N</th>
<th>Std.</th>
<th>Rank</th>
<th>Remark</th>
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</thead>
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<tr>
<td>Q2a: How do you rate the satisfaction of the port services at Pre &amp; Post concession?</td>
<td>1.86</td>
<td>76</td>
<td>.667</td>
<td>3</td>
<td>Poor</td>
</tr>
<tr>
<td></td>
<td>3.12</td>
<td>76</td>
<td>.864</td>
<td>F</td>
<td>Good</td>
</tr>
<tr>
<td>Q2b: How do you grade the clearance of cargoes in the Nigerian seaports at Pre &amp; Post Concession?</td>
<td>1.90</td>
<td>77</td>
<td>.680</td>
<td>2</td>
<td>Poor</td>
</tr>
<tr>
<td></td>
<td>3.18</td>
<td>77</td>
<td>.702</td>
<td>E</td>
<td>Good</td>
</tr>
<tr>
<td>Q2c: How do you rank the provision of adequate &amp; modern critical infrastructures and equipment at Pre &amp; Post concession?</td>
<td>1.66</td>
<td>77</td>
<td>.528</td>
<td>6</td>
<td>Poor</td>
</tr>
<tr>
<td></td>
<td>3.56</td>
<td>77</td>
<td>.659</td>
<td>B</td>
<td>Very Good</td>
</tr>
<tr>
<td>Q2d: How do you assess the managerial competency of the terminal operator and the Nigerian ports at Pre &amp; Post concession?</td>
<td>2.08</td>
<td>77</td>
<td>.703</td>
<td>1</td>
<td>Good</td>
</tr>
<tr>
<td></td>
<td>3.43</td>
<td>77</td>
<td>.715</td>
<td>D</td>
<td>Very Good</td>
</tr>
<tr>
<td>Q2e: How do you rate the relevance of ICT in cargo clearance at Pre &amp; Post concession?</td>
<td>1.53</td>
<td>76</td>
<td>.599</td>
<td>7</td>
<td>Poor</td>
</tr>
<tr>
<td></td>
<td>3.80</td>
<td>76</td>
<td>.566</td>
<td>A</td>
<td>Very Good</td>
</tr>
<tr>
<td>Q2f: How do you grade the performances of the seaports in Nigeria at Pre &amp; Post concession?</td>
<td>1.84</td>
<td>75</td>
<td>.594</td>
<td>4</td>
<td>Poor</td>
</tr>
<tr>
<td></td>
<td>3.49</td>
<td>75</td>
<td>.724</td>
<td>C</td>
<td>Very Good</td>
</tr>
<tr>
<td>Q2g: How do you assess the levels of corruption at Pre &amp; Post concession at Nigerian seaports?</td>
<td>1.69</td>
<td>77</td>
<td>.591</td>
<td>4</td>
<td>Poor (fair)</td>
</tr>
<tr>
<td></td>
<td>2.96</td>
<td>77</td>
<td>1.081</td>
<td>G</td>
<td>High</td>
</tr>
</tbody>
</table>

**Source: Field Survey (2019)**

**Mean Rank:** Excellent = 4.21-5.00, Very Good = 3.41-4.20, Good =2.61-3.4, Fair = 1.81-2.6, Poor = 1=1.8

The results of the analysis of the measures of the factors influencing the performance of Nigerian seaports was presented in Table 2. Accordingly, it was found that respondents poorly rated the port operational performances in Onne port at the Pre concession (mean = 1.83) while they rated the port operational performance at Post concession as good (mean = 2.95). The results in Onne at Pre concession assessed the automation of ports services and ICT of cargo clearance as poor (mean = 1.19) while they were rated good at Post concession (mean = 3.36). Respondents also poorly rated the accessibility of the users to the ports environment and the connectivity to the hinterland intermodal network at pre concession (mean = 1.65), while they were ranked fair at Post concession (mean = 2.45). They further assessed the presence of multiple government agencies operating within the port environment and the clearance process in the seaports of Nigeria at Pre concession as poor (mean = 1.58), while it was assessed as fair at Post concession (mean = 2.57). The Results also
showed that the port users poorly graded the capacity of the infrastructures/equipment and the handling of the containerized cargoes at Pre concession (mean = 1.59), but it was graded good at post concession (mean = 3.58).

Generally, the results showed that the most important factor that influenced port performance in Onne port at the period of this study was the capacity of the infrastructures/equipment and the handling of the containerized cargoes (mean = 3.58), followed by the automation of ports services with ICT in cargo clearance (mean = 3.36), the port operational performances (mean = 2.95), presence of multiple government agencies operating within the port environment (mean = 2.57) and the accessibility of the users to the port environment and the connectivity to the hinterland intermodal network (mean=2.45) respectively.

Table 2: Factors influencing the pre- and post-performance of Onne Port

<table>
<thead>
<tr>
<th>Statement on factors influencing the pre- and post-performance of Onne Port</th>
<th>Mean</th>
<th>N</th>
<th>Std. Dev</th>
<th>Rank</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q3a: How do you rate the port operational performances of the Nigerian seaport at pre and post concession?</td>
<td>1.83</td>
<td>75</td>
<td>.476</td>
<td>1</td>
<td>Fair</td>
</tr>
<tr>
<td></td>
<td>2.95</td>
<td>75</td>
<td>.399</td>
<td>C</td>
<td>Good</td>
</tr>
<tr>
<td>Q3b: How do you assess the automation of ports services with ICT in cargo clearance at the pre and post concession?</td>
<td>1.19</td>
<td>75</td>
<td>.392</td>
<td>5</td>
<td>Poor</td>
</tr>
<tr>
<td></td>
<td>3.36</td>
<td>75</td>
<td>.483</td>
<td>B</td>
<td>Good</td>
</tr>
<tr>
<td>Q3c: How do you rate the accessibility of the users to the port environment and the connectivity to the hinterland intermodal network?</td>
<td>1.65</td>
<td>75</td>
<td>.581</td>
<td>4</td>
<td>Poor</td>
</tr>
<tr>
<td></td>
<td>2.45</td>
<td>75</td>
<td>1.031</td>
<td>E</td>
<td>Good</td>
</tr>
<tr>
<td>Q3d: How do you assess the presence of multiple government agencies operating within the port environment and the clearance process in the seaports of Nigeria?</td>
<td>1.58</td>
<td>76</td>
<td>.572</td>
<td>3</td>
<td>Poor</td>
</tr>
<tr>
<td></td>
<td>2.57</td>
<td>76</td>
<td>.838</td>
<td>D</td>
<td>Good</td>
</tr>
<tr>
<td>Q3e: How do you grade the capacity of the infrastructures/equipment and the handling of the containerized cargoes at Pre and Post concession</td>
<td>1.59</td>
<td>76</td>
<td>.593</td>
<td>2</td>
<td>Poor</td>
</tr>
<tr>
<td></td>
<td>3.58</td>
<td>76</td>
<td>4.734</td>
<td>A</td>
<td>Good</td>
</tr>
</tbody>
</table>

**Source:** Field Survey, (2019).

**Mean Rank:** Excellent = 4.21-5.00, Very Good = 3.41-4.20, Good =2.61-3.4, Fair = 1.81-2.6, Poor = 1=1.8

With respect to the performance of Seaport Model, Table 3 summarized the basic statistical features of the performance indicators in Onne seaport and the control variables. The performance indicators are average turnaround time (ATRT), Berth Occupancy Rates (BOR) and Cargo Throughput (CART), the post concession indicators are port users (consumers) satisfaction of port products (PUSPP), the
quality of services provided at the real time (QSPRT), and the accessibility of port users to the port environment (APUPE), while the moderating variables are size of the seaports (POS), the geographical Location (GLSP) and Technical Infrastructure (FIT).

Based on performance indicators, Berth Occupancy Rates (BOR) was the most performing indicator at the period of this study, out of the three indicators in Onne. The highest performance of Berth Occupancy Rates (BOR) at this period was 37.58 per cent, and the lowest of Average turnaround time was 2.52 per cent. This is an indication that the performance of Onne seaport in Nigeria between 2006 and 2019, was determine by the Berth Occupancy Rates (BOR) and the low Average turnaround time in days at the port. Concerning the concession indicators, the result revealed that the average value of the quality of services provided at the real time (QSPRT), was the highest with 15.67%, followed by the accessibility of port users to the port environment (APUPE) which was 9.75% closely followed by port users (consumers) satisfaction of port products (PUSPP) with an average value of 9.67%.

Moreover, the average value of 15.67% per cent implied the average value of the quality of services provided at the real time in Onne port in Nigeria between 2006 and 2019. The minimum and maximum port users (consumers) satisfaction of port products (PUSPP) in Onne seaport were between 5 and 16 percent, respectively. Taking into consideration of the moderating variables, GLSP, POS and PTI has an average of 17.67, 17.92 and 19.58 per cent respectively and they range between -0.47 and 1.57 with a standard deviation of 3.20 for GLSP. The skewness of the data series showed normal distribution that maintained positive or negative skewness.

Table 3: Descriptive Statistics of Onne Model

<table>
<thead>
<tr>
<th></th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance Indicator</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATRT</td>
<td>1.93</td>
<td>2.87</td>
<td>2.52</td>
<td>0.45</td>
<td>-0.65</td>
<td>6.45</td>
</tr>
<tr>
<td>BOR</td>
<td>4.97</td>
<td>64.45</td>
<td>37.60</td>
<td>16.30</td>
<td>-0.59</td>
<td>5.81</td>
</tr>
<tr>
<td>CART</td>
<td>20.06</td>
<td>23.50</td>
<td>13.16</td>
<td>55.26</td>
<td>2.94</td>
<td>13.98</td>
</tr>
<tr>
<td>Independent Variable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PUSPP</td>
<td>5.00</td>
<td>16.00</td>
<td>9.67</td>
<td>3.34</td>
<td>0.45</td>
<td>2.78</td>
</tr>
<tr>
<td>QSPRT</td>
<td>0.00</td>
<td>1.00</td>
<td>15.67</td>
<td>2.35</td>
<td>6.16</td>
<td>38.93</td>
</tr>
<tr>
<td>APUPE</td>
<td>0.13</td>
<td>0.94</td>
<td>9.75</td>
<td>3.77</td>
<td>-1.18</td>
<td>4.47</td>
</tr>
<tr>
<td>Moderating Variable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GLS</td>
<td>-0.47</td>
<td>1.57</td>
<td>17.67</td>
<td>3.20</td>
<td>-0.17</td>
<td>4.73</td>
</tr>
<tr>
<td>POS</td>
<td>4.92</td>
<td>8.98</td>
<td>17.92</td>
<td>2.71</td>
<td>0.00</td>
<td>2.70</td>
</tr>
<tr>
<td>PTI</td>
<td>1.00</td>
<td>4.84</td>
<td>19.58</td>
<td>2.19</td>
<td>0.02</td>
<td>2.93</td>
</tr>
</tbody>
</table>

5.0 Conclusion and Recommendations

The importance of seaports to naturally endowed countries including Nigeria cannot be under-estimated. Basically, seaports play a vital role in global trade and commerce, serving as gateways for the movement of goods and facilitating economic growth. With the globalization of the world economy bringing changes into the port industry, Nigeria government is not left behind in evolving and embracing strategies for improved ports performance. Hence, the initiation and implementation of concession of the nation’s seaport located in Apapa, Tincan Island and Onne ports. As a result, this study has examined the users’ perception of the concession and the performance of Onne seaports in River State Nigeria.

The findings revealed and established the improvement in ports operational parameters including the Average Turnaround Time (ATRT), Berth Occupancy Rates (BOR) and Cargo Throughput (CART), the post concession indicators are port users (consumers) satisfaction of port products (PUSPP), the quality of services provided at the real time (QSPRT), and the accessibility of port users to the port environment (APUPE) after the concession of the Onne seaport by the Federal Government and significant improvement in users’ satisfaction with the port performance.

From the results of the study, it was found that concession have been beneficial to all the ports and the economy by improving the cargo throughput in the ports, drop in the berth occupancy rates, Improved vessel turnaround time and this was attributed to cargo throughput and improved vessel’s sizes, equipment, also increased in ship traffic. In this regard, the study concluded that ports concession has brought significant improvement to operations and activities as well as the usher in a major relief to various categories of users; hence, the need to sustain and consolidate the gains recorded in seaport operations and performance at the post-concession period at Onne Seaport.

Based on the foregoing, the study recommended the consolidation of ports concession in line with the trends in the maritime sector and to further evolve mechanism for reducing cost of transit, enhancing quality services, encouraging cheap and users’ friendly ports, increasing healthy competition between ports among others. Also, strong institutional and legal framework are required to maintain and sustain not only the gain of concession, but also boost the confidence of the users and operators for optimal service delivery in Nigeria seaports.

Moreover, the remaining bottlenecks which ineffective customs clearance services and other bureaucratic procedures have to be strategically addressed, while the inefficiencies attributed to low turnaround time for vessels, increase container dwell time, unsecured cargo (pilfering, theft), excessive port related charges, government policy inconsistency and poor port management among others have to be addressed.
REFERENCES


