An Examination of Nigerian Seaports Performance and Consistency

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ABSTRACT

An essential measure of a port's effectiveness is its efficiency; a well-run port lowers transportation costs, gets rid of traffic, and shortens vessel turnaround times. This study examines users' perceptions of the pre- and transition phase of performance of Nigerian seaports. The study deployed the use of qualitative and quantitative research methods, with data spanning between the periods 1994 and 2021. The results from the study, reveal that the geographical location and the quality of port services were positive, the users rated the selected port with various variables which include, Port Services, Managerial Competency in Terminal Operations, Provision of adequate and Modern Critical Infrastructure, the use of Information Technology for cargoes clearance. In the table below, Satisfaction of port services were poorly rated during the pre-concession era with the mean value of 1.70, while at the era of post concession it was rated with the mean value of 2.75. The study concludes that the implementation of concessions during the period of this study had a positive but weak effect on the performance of seaports in Nigeria. This could be attributed to the continuous level of government interference in port operations despite concessions, which impedes the smooth performance of the nation's ports. The study recommends that efforts should be made to enhance the policy of eradicating corrupt practices in the seaport.

Keywords: Efficiency, Seaport, Performance, Consistency, Port Services.

INTRODUCTION

Port performance and consistency are crucial to the efficiency and resilience of global supply chains, given that over 80% of global trade by volume is facilitated through seaports. The growing complexities in global trade, including the rise of containerization and increasing cargo volumes, make it imperative for ports to operate with optimal efficiency and minimal disruptions. Port performance, broadly defined, refers to the ability of a port to efficiently manage cargo throughput, reduce vessel turnaround times, and maintain operational sustainability while minimizing delays and emissions. Consistency in performance is equally important, as it ensures predictability, reliability, and cost-effectiveness in maritime logistics, which in turn supports economic competitiveness.

Seaports in Nigeria are gradually moving away from being publicly operated to engaging the private sector in terminal operations through concession contracts. It is globally acknowledged in the maritime environment that governments 'role in port management is declining while private sector management and operations are waxing stronger. Most container ports have been reformed, while specialised ports and terminals are either privately owned or leased. The belief is that ports play a major role in global trade logistics chain process, and this impacts heavily on the costs of many imported and exported goods Megginson, &. Netter, (2001).

The Nigeria maritime sector has been facing unprecedented challenges in the context of increasing competition, as users who interact with these ports are more likely to choose those that have optimal performance, efficient operations, and high levels of service delivery. It is on this background that this study seeks to address this objective.

1. assess user's perception of the pre and post concession of Nigeria seaport

RELATED LITERATURES

Conceptualizing Port Services

Port services play a pivotal role in facilitating global trade by providing the essential infrastructure and support that enable the smooth flow of goods across international borders. Conceptualizing port services involves understanding the wide range of operations and functions that a port undertakes, including cargo handling, vessel services, logistical support, and value-added services. These services are critical in ensuring that ports not only function as gateways for trade but also act as key nodes in the broader global supply chain network.

Categories of Port Services

Core Port Services (Cargo Handling and Vessel Services):

At the heart of port operations are the core services that directly handle cargo and vessels. Cargo handling involves the loading, unloading, and storage of goods, whether they be in containers, bulk, or liquid form. The efficiency of these operations is central to the overall performance of a port, as delays in cargo handling can result in significant disruptions to global supply chains. Vessel services include piloting, towing, berthing, and the provision of fuel and maintenance for ships. According to MDPI (2024), ports that excel in these areas typically demonstrate higher throughput, reduced vessel turnaround times, and greater competitiveness Amaral, Pedro, Ferreira, & Marques, (2022)

Logistical and Supply Chain Services

Beyond the basic cargo handling and vessel services, modern ports increasingly offer a range of logistical services designed to enhance the efficiency of the supply chain. These include warehousing, distribution, customs clearance, and intermodal transport services, such as rail and road connections to inland destinations. By integrating these services, ports are able to reduce transit times, improve supply chain coordination, and offer more competitive pricing for shipping lines and cargo owners. As described by S&P Global (2024), ports in East Asia have been particularly successful in integrating these services, further bolstering their role in global trade

Value-Added Services

In addition to traditional logistical functions, many ports provide value-added services that enhance the attractiveness of the port as a logistics hub. These include services such as cargo consolidation, labeling, packaging, and processing, as well as free trade zones where goods can be imported, handled, and re-exported without the intervention of customs authorities. Ports that offer such services create additional value for their clients and become integral parts of global manufacturing and distribution networks. Paulo, Maris, Pedro & Rui (2024), highlights that ports with such capabilities tend to attract more business, particularly from industries with complex supply chain needs.

Technological and Environmental Services

Modern port services are increasingly focused on adopting cutting-edge technology to improve operational efficiency and environmental sustainability. The integration of digital technologies, such as blockchain for secure transactions and real-time data analytics for monitoring cargo movements, allows for better decision-making and reduces the risks of delays. Furthermore, ports are now more conscious of their environmental impact and are investing in green technologies, such as renewable energy sources and electric cargo-handling equipment. These efforts not only align with global sustainability goals but also improve the overall operational performance of ports. Kishore, Pai, Ghosh, *et al.* (2024) notes that ports prioritizing environmental efficiency often rank higher in global performance indices

Conceptualization of port services involves understanding the intricate web of functions that ports perform to support global trade. From core operational services like cargo handling and vessel maintenance to value-

added and environmental services, ports are evolving into dynamic logistics hubs. As international trade continues to expand and environmental concerns grow, ports must continually adapt and innovate their service offerings to maintain competitiveness and sustainability in the global supply chain

The perception of port users, shippers, shipping lines, freight forwarders, terminal operators, and other stakeholders plays a crucial role in assessing the performance and competitiveness of ports. Their experiences and satisfaction levels directly influence a port's reputation, cargo throughput, and overall success. Understanding how port users perceive various aspects of port performance, including efficiency, cost, infrastructure, and services, is essential for continuous improvement in port operations.

Port performance is typically evaluated based on a variety of criteria such as operational efficiency, service quality, cost-effectiveness, infrastructure adequacy, and the ability to meet the evolving demands of global trade. However, beyond these technical metrics, port users' perceptions are equally important in shaping the overall image and effectiveness of a port. Port users are the customers of port services, and their satisfaction influences the competitiveness and attractiveness of the port in the global supply chain (Notteboom & Rodrigue, 2021).

Key Aspects of Port Users' Perception

2.2.2 Operational Efficiency: Port users often prioritize operational efficiency, particularly the speed and reliability of cargo handling, vessel turnaround times, and the availability of berths. Ports with advanced infrastructure and technologies that minimize delays and disruptions are typically rated higher in terms of performance (Nguyen et al., 2022).

2.2.3 Cost and Tariffs: The cost of port services, including handling charges, port dues, and other tariffs, significantly affects port users' perception. Ports perceived as having high costs without corresponding service quality may lose competitiveness to more affordable alternatives (Tongzon, 2020).

2.2.4 Infrastructure Quality: Adequate and modern port infrastructure, such as container terminals, deep-water berths, and equipment like gantry cranes, positively influences port users' perception. Infrastructure that facilitates smooth and fast operations, including hinterland connectivity (rail, road, inland waterways), is a critical factor (Merk, 2021).

2.2.5 Customs and Regulatory Processes: Efficiency in customs clearance and regulatory processes is a significant determinant of user satisfaction. Slow or complex bureaucratic procedures can negatively affect port users' perception, even if other operational aspects of the port are efficient (Cheon & De Langen, 2022).

2.2.6 Customer Service and Communication: Effective communication between port authorities and users, including real-time updates on ship schedules, cargo tracking, and issue resolution, impacts users' overall perception of service quality. Ports that provide timely information and responsive customer service are often viewed more favorably (Alderton, 2023).

2.2.7 Sustainability and Environmental Performance: Increasingly, port users are considering the environmental performance of ports, including green initiatives, energy efficiency, and the reduction of emissions. Ports with strong environmental credentials and sustainability initiatives tend to be preferred, especially by environmentally conscious companies (Gritsenko, 2022). Research has shown that the perception of port users is a key determinant of a port's competitiveness in regional and global markets, a study by Tongzon (2020) found that ports with high user satisfaction in terms of operational efficiency and cost-effectiveness were able to attract more shipping lines and cargo volumes. Ports perceived as inefficient or expensive were often bypassed in favor of more user-friendly alternatives.

Notteboom and Rodrigue (2021) emphasize that ports in competitive regions such as European or Southeast Asian ports must focus not only on improving operational metrics but also on building strong relationships with users. The study highlighted that port users are highly sensitive to delays, cost structures, and the quality of customer service, and that a negative perception could lead to a shift in shipping routes or logistics chains.

The Port of Rotterdam is consistently ranked as one of the top-performing ports in Europe due to its advanced technological infrastructure and strong focus on customer service. According to a 2021 survey of port users, the port's use of digital technologies, such as cargo tracking systems and automated terminals, has significantly improved its operational efficiency and positively influenced user perceptions (Merk, 2021).

The Port of Singapore is one of the busiest and most efficient ports globally, and its high operational efficiency and advanced infrastructure have earned it a positive reputation among port users. Nguyen et al. (2022) found that users rated Singapore highly for its fast vessel turnaround times, high-tech facilities, and strong customer service. Despite its relatively high costs, users valued the port's reliability and efficiency.

The Port of Antwerp has made significant strides in improving its environmental performance, which has positively impacted user perceptions, Gritsenko (2022) noted that port users are increasingly considering sustainability in their evaluations, and the Port of Antwerp's focus on green logistics and reducing its carbon footprint has helped attract environmentally conscious companies. In the study of Nwokedi, Nwachukwu, & Ogwu, (2022) on Lagos Port complex (port performance), the study noted the following as the contributing factors to low port performance at Nigerian ports: (a) poor service delivery and poor cargo handling; (b) documentation procedures characterised by long procedures; (c) poor labour performance; (d) queuing for berths problems and allocation of vessels; (e) poor customs and port authority relationship; and (f) corruption and port pilfering.

Port users' perception of port performance is a critical factor in determining a port's competitiveness. Operational efficiency, cost-effectiveness, infrastructure quality, customer service, and sustainability are all key elements that shape how users evaluate port performance. Ports that prioritize these factors and adapt to changing industry trends are more likely to maintain positive user perceptions and remain competitive in the global market.

MATERIALS AND METHODS

Study Area

The study area was conducted among the ports/terminals of AP Moller container terminal (Apapa Lagos), Onne Port (Port Harcourt, River State) and Warri Port (Delta State). The three container ports were selected based on geographical location, port size, age, homogeneity of the imported cargo (containerised) and economic viability of the terminal ports (cargo availability).

Figure 3.1: Map of Nigeria showing Major Sea Ports (study Area)
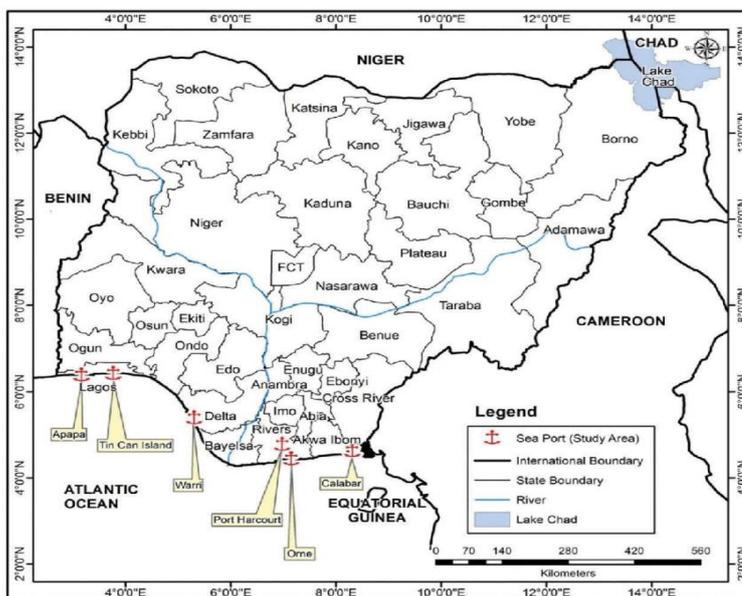
Source: Modified from the Administrative Map of Nigeria, 2021

Apapa Port Container Terminal

The Lagos Port Complex harbours the Apapa Port, which is referred to as the premier port and the largest in Nigeria, situated in Apapa, Lagos, the commercial nerve centre as well as the key industrial and consumer markets. The Apapa Port was converted into five terminals for private operators in 2006; these include AP Moller Terminal, Apapa Bulk Terminal (ABTL), ENL Consortium, Green view Development Nigeria (GDNL), and Flour Mills Nigeria Plc.

The AP Moller container terminal port is among the three other port terminals selected as the focus of this study. It is the biggest container terminal in West Africa with a paved yard area of 55 hectares and a quay length of about 1005 metres.

Plate 3.1: Aerial view of AP Moller Terminal

Source: Apmterminals.com, 2023

Plate 3.2 Aerial view of Warri Port in Lagos Seaport

Source: Intel Services.com, 2023

Plate3 .3: Aerial view of Onne Port, F.O.T

Source : Intel services. Com, 2023

Methods

Data Collection

Primary Source of Data

The primary data were collected with the aid of two research instruments: the questionnaire and interview schedules (where necessary).The questionnaire elicited information from the objectives of the study in the literature reviewed. In addition, the questionnaires were both open and closed-ended, while interviews were conducted to complement the information drawn from the questionnaires. Three hundred and thirty-six (236) copies of questionnaires were administered to the various port users selected for the study. Responses were collected after the completion of the exercise.

Secondary Source of Data

The secondary data were obtained through the examination of the archives and database of the Nigerian Port Authority (NPA) and the terminal ports (concessionaires). Other sources include the World Bank reports covering the period of this study, the Central Bank of Nigeria (CBN) annual reports, bulletins, information generated from the database of the Nigeria Customs Integrated System (NCIS2.0), and publications/journals, magazines, printed materials and internet/websites related to the maritime industry (1994-2021). The variables sourced were the volume of goods processed by the post over a specific period, number of ship handled within a specific period and port activity level.

Users' perceptions of the pre-and post- concession of Nigerian seaports

This part of the questionnaire stimulated respondents' perception regarding the pre- and post-concession of Nigerian seaports. It was divided into five elements: perceptions of the needs and expectations of the users about the performance of the ports, perception on the increase in customers' satisfaction, perceptions of the dwell time/operational delays in the release/exiting of cargoes, provision of adequate manpower/labour (stevedoring/dockworkers) and provisions of infrastructures/equipment.

RESULTS AND DISCUSSION

Measurement of Port Users' Perceptions of the Pre-and Post-Concession of Seaport Performance in all the Seaports

This section examined the users' perceptions of the pre- and post- concession of the three (3) selected ports in Nigeria. The results were summarised in Tables 4.1, 4.2 and 4.3. From Table 4.1, it was found that port users in Onne rated their satisfaction of the port services at pre-concession poorly (mean =1.86), while they rated their satisfaction at post-concession as "good" (mean = 3.12). At pre-concession, port users rated the clearance of cargoes and the provision of adequate and modern critical infrastructures and equipment at Onne Port poorly (mean =1.90 and1.66), but were rated 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 post-concession (mean = 3.43 and 3.80).

Port users' perception of the performance 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 pre-concession was rated low (mean = 1.69) compared to that of the post-concession period, which was rated high (2.96). The perception of port users in Onne at the concession was good compared to the pre- concession. The users rated relevance of ICT in cargo clearance as most perceived good, while assessing the levels of corruption at pre-and post- concession at Nigerian seaports was perceived as least at concession in Onne.

Table 4.1: Distribution of Respondents on Users' Perceptions of the Pre- and Post-Concession of Onne Seaport

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

Source: Field Survey (2023)

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

In Table 4.1, it can be deduced that port users in Apapa Port rated their satisfaction of port services at pre-concession poorly (mean = 1.53), while they perceived their satisfaction at post-concession as good (mean = 2.70). At pre-concession, port users in Apapa Port perceived the clearance of cargoes, the managerial competency of the terminal operators, and the provision of adequate and modern critical infrastructure poorly (mean = 1.93, 1.83 and 1.40). They were rated fair at post-concession (mean = 2.82, 2.87 and 3.36).

The result showed that the relevance of ICT in cargo clearance at pre-concession was perceived as poor (mean = 1.73), but was rated good at post-concession (mean = 3.64). Port users in Apapa Port perceived the level of corruption better at the pre-concession period (mean = 1.54) than at the post-concession period, where the level of corruption was perceived as fair (mean = 2.83).

Port users perceived the performance of Apapa Port at pre-concession as poor (mean = 1.88) while it was perceived as good at post-concession (mean = 3.11).

The perception of port users in Apapa Port at concession was good compared to the pre-concession period. The users perceived relevance of ICT in cargo clearance at the highest level, while the levels of corruption were perceived as the least at concession.

Table 4. 2: Distribution of Respondent Users' Perceptions of the Pre and Post Concession of Apapa Seaport

Statement on Pre and Post Perception of Port Users in Apapa seaport.	Mean	N	Std. Deviation	Rank	Remark
Q2a: How do you rate the satisfaction derived from the port services at pre & post concession?	1.53	98	.645	5	Poor
	2.70	98	.911		Good
Q2b: How do you grade the clearance of cargoes in the Nigerian seaports at Pre & Post Concession?	1.93	98	.876	1	Fair
	2.82	98	.889	F	Good
Q2c: How do you rank the provision of adequate & modern critical infrastructures and equipment at Pre & Post concession?	1.40	98	.685	6	Poor
	3.36	98	.790	B	Good
Q2d: How do you assess the managerial competency of the terminal operators and the Nigerian ports at Pre & post concession?	1.83	98	.746	2	Fair
	2.87	98	.970	D	Good
Q2e: How do you rate the relevance of ICT in cargo clearance at Pre & post concession?	1.73	98	.892	3	Poor
	3.64	98	1.086	A	Good
Q2f: How do you grade the performances of the seaports in Nigeria at pre & post concession?	1.88	98	.900	1	Fair
	3.11	98	1.024	C	Good
Q2g: How do you assess the levels of corruption at pre & post concession at Nigerian seaports?	1.54	98	.852	4	Poor
	2.83	98	1.324	E	Good

Source: Field Survey, (2023) .

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

Table 4.2 also showed that port users rated their satisfaction of port services at pre-concession in Warri poorly (mean = 1.78), while they perceived their satisfaction at post-concession as fair (mean = 2.34). At pre-concession, port users in Warri Seaport poorly perceived the clearance of cargoes as well as the provision of adequate and modern critical infrastructure, while the managerial competency of the terminal operator was perceived as fair (mean = 1.63, 1.60 and 3.27). In the post-concession period, they were all rated as fair (mean = 2.55, 3.36 and 2.05). The result showed that the relevance of ICT in cargo clearance at pre-concession was perceived as poor (mean = 1.88), but was rated good at post-concession (mean = 3.42). Port users in Warri Port also perceived the level of corruption better at pre-concession (mean = 1.75), than the post-concession period, where they perceived a fair level of corruption (mean = 2.57). Port users perceived the performance of Warri Port at pre-concession as poor (mean = 1.75) while it was perceived as good at post-concession (mean = 3.09).

The perception of port users of Warri Port at the concession period was good compared to the pre-concession era. The users rated relevance of ICT in cargo clearance as highest, while the level of corruption were perceived least at pre-concession, and high at post-concession during the period of this study.

Table 4.3: Distribution of Responses on users' Perceptions of the Pre- and Post-Concession of Warri Seaport

Statement on Pre and Post Perception of Port Users in Warri seaport	Mean	N	Std. Deviation	Rank	Remark
Q2a: How do you rate the satisfaction of the port services at Pre & post concession?	1.78	58	.879	3	Poor
	2.34	58	.849	G	Fair

Q2b: How do you grade the clearance of cargoes in the Nigerian seaports at Pre & Post Concession?	1.63	56	.822	6	Poor
	2.55	56	.829	F	Fair
Q2c: How do you rank the provision of adequate & modern critical infrastructures and equipment at Pre & Post concession?	1.60	55	.784	7	Poor
	3.27	55	1.130	B	Good
Q2d: How do you assess the managerial competency of the terminal operator and the Nigerian ports at Pre & Post concession?	2.05	57	.811	1	Fair
	3.18	57	1.071	C	Good
Q2e: How do you rate the relevance of ICT in cargo clearance at pre & post concession?	1.88	57	1.019	2	Fair
	3.42	57	.944	A	Good
Q2f: How do you grade the performances of the seaports in Nigeria at pre & post concession?	1.75	56	.769	4	Poor
	3.09	56	1.066	D	Good
Q2g: How do you assess the levels of corruption at Pre & post concession at Nigerian seaports?	1.75	56	.792	4	Poor
	2.57	56	1.346	E	Fair
Grand Mean	1.78				Poor
	2.92				Good

Source: Field Survey, (2023) .

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

Table 4.4 examined the combined perception of port users in all the selected seaports, the table shows that port users rated their satisfaction of port services at pre-concession in all the ports poorly (mean = 1.70), while they perceived their satisfaction at post-concession as fair (mean = 2.75). Also, at pre-concession, port users in all the ports poorly perceived the clearance of cargoes and the managerial competency of the terminal operators, as well as the provision of adequate and modern critical infrastructure (mean = 1.84, 1.53 and 1.97). In the post-concession era, the clearance of cargoes was rated as fair, while the managerial competency of the terminal operator and the provision of adequate and modern critical infrastructure were rated as good (mean = 2.87, 3.40 and 3.13) respectively.

The result showed that the relevance of ICT in cargo clearance at pre-concession was perceived as poor in all the ports (mean = 1.70), but was rated good at post-concession (mean = 3.64). Port users in all the ports perceived the level of corruption lower at the pre-concession stage (mean = 1.64) than at the post-concession (mean = 2.87). Port users in all the ports selected showed the performance of all ports at pre-concession as poor (mean = 1.83), while it was perceived as good at post-concession (mean = 3.23).

The perception of port users in all the selected ports at concession period was good compared to the pre-concession period. The users rated relevance of ICT in cargo clearance as poor; satisfaction with the port services were perceived least at the concession stage.

Table 4.4: Distribution of respondents on users' perceptions of the pre and post concession in all the Seaports.

Statement on Pre and Post Perception of Port Users in All the seaports of study.	Mean	N	Std. Deviation	Rank	Remark
Q2a: How do you rate the satisfaction of the services provided during the Pre & Post concession eras?	1.70	232	.729	4	Fair
	2.75	232	.925	G	Good

Q2b: How do you grade the clearance of cargoes in the Nigerian seaports at Pre & Post Concession?	1.84	231	.809	2	Fair
	2.87	231	.848	E	Good
Q2c: How do you rank the provision of adequate & modern critical infrastructures and equipment at Pre & Post concession?	1.53	230	.671	7	Poor
	3.40	230	.850	B	Good
Q2d: How do you assess the managerial competency of the terminal operator and the Nigerian ports at Pre & Post concession?	1.97	232	.755	1	Fair
	3.13	232	.949	D	Good
Q2e: How do you rate the relevance of ICT in cargo clearance at Pre & Post concession?	1.70	231	.851	4	Poor
	3.64	231	.916	A	Very Good
Q2f: How do you grade the performances of the seaports in Nigeria at Pre & Post concession?	1.83	229	.777	3	Fair
	3.23	229	.961	C	Good
Q2g: How do you assess the levels of corruption during the Pre & Post concession era in Nigerian seaports?	1.64	231	.761	6	Poor
	2.81	231	1.257	F	Good
Grand Mean	1.74				Fair
	3.12				Good

Source: Field Survey, (2023)

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

Table 4.5 examined the paired sample test of port user's perceptions of the pre- and post- concession in all the selected seaports. The pair sample t- test was used to test the difference between the sample means for the pre-concession era and the post-concession era to validate if there exists any statistically significant contribution of the concession policy. The test showed that concessions of seaports in Nigeria were positive and significant to all the ports examined. It showed that there was an improvement in the provision of adequate and modern critical infrastructures and equipment at concession. The relevance of ICT in cargo clearance and clearance of cargoes in the Nigerian seaports improved at concession. The managerial competency of the terminal operator and the satisfaction of the port services also improved. However, during the period of this study, assessment of the level of corruption was found to be positive and significant at concession. It shows that with reasonable limits of accuracy port concession impacts positively on port operations, thus serving as a boost to the economy through revenue generation, reduction in cost of importation, as well as in employment generations

Table 4.5: Paired sample test of port user's perceptions of the pre- and post- concession in all the selected seaports

		Paired Differences	T	Df	Sig. (2-tailed)
Pair 1	How do you rate the satisfaction of the port services at Pre & Post concession?	-.916	-15.236	231	.000
Pair 2	How do you grade the clearance of cargoes in the Nigerian seaports at Pre & Post Concession	-.900	-15.565	230	.000
Pair 3	How do you rank the provision of adequate & modern critical infrastructures and equipment at Pre & Post concession?	-1.733	-27.024	229	.000

Pair 4	How do you assess the managerial competency of the terminal operator and the Nigerian ports at Pre & Post concession	-1.021	-16.107	231	.000
Pair 5	How do you rate the relevance of ICT in cargo clearance at Pre & Post concession	-1.772	-22.838	230	.000
Pair 6	How do you grade the performances of the seaports in Nigeria at Pre & Post concession	-1.260	-20.081	228	.000
Pair 7	How do you assess the levels of corruption at Pre & Post concession at Nigerian seaports	-1.013	-14.777	230	.000

Source: Field Survey, (2023)

CONCLUSION AND RECOMMENDATIONS

In conclusion, based on the findings from the study, there are uniformity in the low performance of seaports operations in all the ports and the average performance of selected ports dwindled across the years after concession. The satisfaction of the port services, the provision of adequate & modern critical infrastructures and equipment, and the relevance of ICT in cargo clearance at the Post concession were better than the pre-concessions, while the level of corruption at concession remains a mirage in the Nigeria seaports.

The study hereby recommend that, terminal operators should be encouraged to improve the technical infrastructure within their terminals (berths and quay areas) to improve cargo handling, which will further improve turnaround time as call ships will spend less time at the ports resulting in a higher number of call vessels that could eventually boost berth occupancy,

Management of Nigeria seaports should be encouraged to have improved service quality to ensure that more vessels visit them and boost berth occupancy.

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