

An Evaluation of the Delay Factors in Nigeria Seaports: A Study of the Apapa Port Complex, Lagos

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Abstract

This study examined the evaluation of delay factors at the Nigeria seaports; a study of the Apapa seaports. A well-functioning seaport is expected to improve the ease of doing business in a nation, however, the Nigeria experience has been very sour in this regard due to heavy port congestions and delays. The specific objective of this study is to evaluate the various delay factors at the Nigeria seaports and the specific delay factors at the Apapa seaports. The research used primary method of data collection via questionnaire application, using the Taro Yamane's population sampling method and results analyzed using the ANOVA statistics. The findings revealed a statistically significant effect of Port delay factors at the Nigeria seaports on national output and a significant effect of Port delay factors at the Apapa seaports on Nigeria economic output. The study concludes that port delay factors at the Nigeria seaports and the Apapa seaports significantly affects economic activities in Nigeria and recommends the creation of more Evacuation Corridors at the seaports to facilitate prompt service delivery and improve the country's ease of doing business amongst others.

Keywords: Ports; Operations; Apapa Seaports; Delay Factors; Congestions

JEL Classification: HE199, HE323, HE380, HE561, HE730

1.0 Introduction

With globalization, government realized that it lacked the resources and managerial abilities to drive a modern seaport successfully (Razak, 2005). Around the world, governments and port authorities have withdrawn from port-operations knowing that enterprise based port services and operation would allow for greater flexibility, efficiency, and better services to port consumers (Notteboom, 2010). This made the disengagement of government from the activities that could be more efficiently provided by the private corporations for the better of the society.

However, human society especially today as business life is structured by time-tight schedules. Time has been established as an expensive commodity. Ship voyage plan takes account of the time and its value. Voyage is a function of two variables namely:

- (a) Transit Time
- (b) Port Time

With the technological development and improvement in speed, most modern ships transit time has been reduced to the barest minimum. This has helped to focus the voyage plan in relation to time in present port days (Konig, 2002).

Similarly, the average waiting time of vessels in Nigerian ports has been reduced very drastically as most berths remain empty, yet the average turn-round time of vessel remains higher.

1.1 Statement of the Problem

Nigeria as a coastal nation depends heavily on the Maritime Industry (her second highest revenue generator which indeed is pivotal to her socio-economic and political development) not only for her international trade in import/export but also for her neighbouring land-locked nations.

The port as an integral part of the maritime industry vested with important function of facilitating the transshipment of cargo from water to land mode and vice versa could lead to enormous loss to the nation's economy if its operations are hampered by delays at port operational facilities thereby inhibiting economic development. The persistent port

congestion in Nigeria has resulted in the following among other anomalies.

- (1). The goods when eventually produced at high production cost are transferred to the final consumer at exorbitant prices.
- (2). The manufacturing factors are either slowed down or temporarily shut down as imported raw materials are stuck at the ports for months.
- (3). Exporters lose their customers overseas to other competitors for their inability to make timely delivery of consignments meant for export to their various destinations.
- (4). Nigerian importers lose millions of Naira annually to unnecessary demurrage and related charges.
- (5). Nigeria loses billions of naira that the ports should have earned through import duties and other port charges to neighbouring countries' ports as vessels originally destined for Nigeria are diverted to such ports.

The above factors prompts the investigation into this area of Delay at Apapa Port Complex, Lagos and hence necessitates the research questions as; is there any relationship between delays and various causative delay factors in relation to Apapa Port Complex Lagos. The study attempts to address these anomalies and unwarranted port delays which have resulted to colossal loses to the Nation, affecting negatively the economy and polity with the view to proffering solution to correct and enhance economic development of the nation.

Objectives of the Study

The study is aimed at accomplishing the following specific objectives;

- (a) To identify the key determinants of delays in Nigerian Seaports.
- (b) To determine the causative delay factors specific to Apapa port complex, Lagos.

1.2 Literature Review

The chapter examines the problems of delay in Nigeria ports most especially high turn-round time and also some researcher's view with regards to the ports and its attendant efficiency (Ndikom, 2006).

1.2.1 Conceptual Frame work

PORT EFFICIENCY AND PRODUCTIVITY

The port is the Life-Line of maritime activities. Hence, the collapse of the port system would result in the collapse of the maritime industry and economy, especially an import-dependent nation like Nigerian. The port has strategic implications for the Nigerian economy, especially now that the oil sector is beginning to experience imminent collapse with the sharp fall in the prices of crude-oil in the international market (Ndikom, 2005). But Nigerian port system has been in dire need of realistic reforms for the past two decades, in need of a reform strategy that would be based on port productivity and operational performance. It is pertinent to note that, as earlier mentioned, port productivity and performance are anchored on increase cargo throughput. The relevance and efficiency of any port are tied to the degree of cargo traffic in that port. Hence, there is need, presently, to develop a sustainable and viable heterogeneous maritime transport system which will automatically help to eradicate and tackle the problem of delays and congestions in our ports, thereby user in an increased port performance and productivity.

Port productivity is the level of efficiency, effectiveness, and vibrancy a particular port is operating at within the confines of the law (Ndikom, 2006). Ideally, the productivity and efficiency of a given port are measured with certain indications. As a maritime nation, Nigeria must develop a dependable, safe and affordable maritime system that is efficient, accessible, competitive and technologically advanced. Maritime transport needs to be promoted as a cost effective energy-efficient and environment friend mode (Ndikom, 2006).

1.2.2 Contributions by Other Authors

Ndikom and Emeghara (2012) describes a sea port as a subsystem of the maritime transportation system. It is an essential organ of the transportation system of a nation. A seaport is also recognized as an entry point for goods leaving the country for other countries. There is a positive relationship existing between a ship and a port. This relationship Esra and Walters (2002) described as a servant/master relationship. In order words, the main function of a port is to provide all necessary facilities to accumulate calling ships as well as enable the ships load and off load cargoes.

Clerk et al (2001) consequently described a port as an enterprise that must provide quality services to her customers to survive economically. This is because shippers as well as ship owners demand efficient services from port operations for continuous patronage. Ugboma et al (2004) sees a port as a service her master efficiently if its

usefulness and performance level is to be recognized. According to Ugboma (2006), just as the shipping industry's usefulness, efficiency and overall performance is evaluated in the light of services rendered to the ships, so also the usefulness of the seaport relate to the entire economy.

The number of customers to a commercial organization determines the viability of the enterprise. Likewise, the volume of ship traffic to a port determines the property and life of the port. Huybrechts et al (2002) agrees with Ugboma (2006) that a seaport is a center of attraction. As a service Centre its viability is measured by the volume of ship and cargo traffics attracted to it over a period of time they conducted a survey evaluating the attractiveness of the port of Antwerp to shippers and ship owners. They were able to identify several factors that determine port choice in a competitive environment.

1.2.3 Relevant Models and Theories

Using China as a case- study, Tiwan et al (2003) applied stated preference choice model in assessing port selection behaviour by shippers and ship owners.

Tongzon (2002) conducted similar survey in South East-Asia. Using a survey questionnaire approach, Tongzon (2002) targeted the relationship existing between shippers / ship owners and choice of ports or ports attractiveness, attractiveness.

These studies all concluded that service quality was very important in port attractiveness to customers. It must be emphasized that most of these determinants relates positively to delays in the ports. In his conclusion, Tongzon (2002) identified time efficiency as the factor that rated highest among other factors. This is consistent with the global trend and practice with the adoption of modern logistical approach like "Just-in-time" delivery, Tongzon (2002) is of the opinion that high value added products need to be delivered in time or pass through the port fastly to avoid high charges accumulation.

Time in port has always been a major or an important determinant of port attraction to port users. Kio Yu (2006) assessed the attractiveness of ports in the North European container transshipping market. Kio concluded that Hamburg and Rotterdam are the most attractive port user's option. Consequently, they act as transshipping hub with European markets.

Alpharliner (2005) assessed port attractiveness through soliciting the opinions of shipping lines that are the major and direct port users. He used a targeted survey respondents consisting of chief executive officers, general managers, operation managers, district managers, purchasing managers, including various maritime transport scholars and shipping consultants.

His conclusion deviated slightly from the other studies or views discussed earlier. Though loading and offloading facilities, accommodation for large volume shipments, frequency, port charges, assistance in claim flexibility, ability in meeting special handling requirements were recognized as port choice determinants he rated the availability of information flow very high. Other studies that investigated port choice or attractiveness includes: Song and Yeo (2004), Begnon (2002), Chivolka and Raith (2001) etc.

Nigerian Ports Facilities and Services

The port system is vital to Nigeria import and Export and to her production. With the exception of the oil sector, the sea ports have since 1984 accounted for approximately 99.2 percent by volume and 95% by value of the total imports and exports of Nigeria. Ndikom (2005) stressed the importance of the ports in the statement "the ports are a focus of a broad spectrum of maritime activities generating significant job creation and economic growth. This is true of Nigerian ports.

Nigeria has eight (8) major ports, Eleven (11) oil terminals and twenty seven (27) private jetties within her port system. The various ports excluding the oil terminals that have a cargo handling capacity of 35 million tones per annum, the berthing facilities at the port include ninety-three (93) general cargo berths, eleven (11) liquid cargo berths, sixty-three (63) buoy berths, in addition to a large number of privately owned jetties.

Nigeria cargo storage facilities are composed of sixty-three (63) transit shades twenty-two (22) back shades, four (4) carbon shades and forty (40) warehouses all with a total storage of over four hundred and sixty thousand, four hundred and fifty-nine (4, 60459) square metres, there are also available at the ports, a fleet of fifty-four (54) operational labour crafts as well as Six hundred and ten (610) different types of cargo handling plants and equipment.

Table 1

In addition to the above, there is the ultra-modern Federal Ocean terminal near completion in Onne, River State.

The multi-purpose ultra-modern port, the largest of its kind in Africa is expected to adequately export from the country's

petrochemical complex industry. The port is designed to have a total of one thousand five hundred and ninety (1590) meters with six berths – three for general cargo one each for container RoRo and bulk cargo berths respectively. The bulk cargo berths is expected to accommodate vessel up to fifty –five thousand (55,000) dwt with a draft of thirteen (13) meters and several transit shades, warehouses, Lorry Park starting areas, service jetties and control tower.

With the introduction of over (10) ten approved inland container depots (ICD's) across the nation owing to the recent port reforms and port decongestion strategies, the Nigeria ports capacity and facilities to handle cargo is bound to improve considerably.

A virile maritime industry depends on efficient port system and availability of shipping vessels. Both are essential to international trade which in turn is one of the most important contributors to economic development.

Given the benefits and potentials associated with the nations maritime industry / sector as enumerated above, it's quite revealing that no government will allow such a sub-selector that contributes so much to the national economic development and revenue base to depreciate, deteriorate or under-developed, (Osadume and Okuoyibo, 2020).

The various forms of delays to ships lead ultimately to port congestions. According to oxford learning Dictionary, congestion is defined as the state of being crowded, blocked or full, causing difficult in movement. This follows that a crowded office block is also congested, if a 500 capacity lecture room admits 650 students, it becomes congested making movement difficult.

Similarly, traffic congestion can occur as a result of poor traffic control, wrong driving, and lockage caused by broken down vehicles, port-holes etc Gabriel (2019). Congestion (Delay) therefore is an abnormal situation arising from an imbalance in the flow of service from a provider to the consumer. For instance, non- functioning of some service facilities such as fuel pumps, traffic lights, poor condition of roads, fewer attendants in an office etc. could lead to various kinds of congestion. (Emeghara, 2012).

Gabriel (2019) in the early 70s and up to 80s, our seaports were usually a beehive of activities as a result of high level of importation then. Shortly after the war and up to 1975, the Apapa port was always congested culminating to the setting up of a taskforce for clearing congestion.

Delays in our various ports which resulted to port congestion was indeed first noticed in Nigeria in the early seventies (70s) when Nigeria imported too much cement than her ports could handle (cement Amada). During this era vessels were reported to have waited up to 240 days at our premier ports of Apapa Lagos before gaining access of allocated berth.

In recent times Nigeria had another round of port congestion at Apapa port particularly. This was traced to government policy inconsistency in 2001 on issues of imports such as tokumbo cars, used fridges, air-conditioners, and other essential goods and in the frequent charge from destination inspection (PI) and back to DI over the years.

It's important to note that prior to the policy charge on bared cargo, most Nigeria importers have already placed order for such goods now seen as contra-band and hence were abandoned by these importers for fear of being prosecuted with the numerous charges enumerated thereby culminating delay and congestion at the ports. Gabriel (2019).

TYPES OF DELAYS / PORT CONGESTION

Port congestion and delays comes in different forms at our ports manifesting into inefficiency, unproductively and stagnation of terminal operations.

Ndikom (2006) stressed that on critical examination the following types of congestion can be distinguished in ports as follows:

SHIP / VESSEL TYPES

A situation where vessel are already berthed at the ports but witnessed prolonged delay due to poor functioning of equipment and control. The vessel therefore spends longer time than necessary at the berths before been offloaded thereby increasing the number of vessel waiting to be served.

BERTHING FACILITY TYPE

This is a very serious type of port congestion /delays that result from lack of berthing facilities as quay infrastructures at the port used for the purpose of husbanding of vessels stay at a particular berth for too long without completing discharge due to non-functioning of plants and equipment. This usually has multiplier effects on vessels calling at the ports for berthing, thereby culmination unto long waiting time.

Emeghara (2012) states that delay is characterized by the numerous vessels waiting for too long at high sea or fare-way buoy. For instance, vessels waiting for up to 90 days on the sea just to be called for a berth in recent times at

Apapa ports. The high sea congestion is mostly responsible for the congestion surcharge by some ship owners for Nigerian band cargoes which later translates to high cost of goods.

This occurs when containers outflows and inflows are not removed from the space and staking areas by importers and shipping agents. The remote cause of container traffic type of port congestion can be poor clearing / inspection procedures or non-functioning of plants and equipment required for the clearance of such container from the ports. Container traffic type of congestion is currently experienced at the Apapa container terminal which has crippled functionality, productivity, and the performance of the industry.

It is important to note that there are many other problems which could cause a vessel to stay more than expected at the berths such as, Seizures of vessel, Arrest etc, and so affect the productivity, efficiency and performance of the port system.

QUAY APRON / STACKING AREA TYPE

This type result from quay Aprons and stacking area being heavily loaded with un-cleared goods by shipping agents or ports management, thereby making it difficult for vessels to further discharge due to space problem. Sometimes, it is caused by non-functioning of the plants cranes and other cargo handling equipment employed to more container and other general cargos off the quay areas.

CAUSES OF PORT DELAY / CONGESTION

There are numerous factors responsible for delays and congestion been experienced in our ports. Emeghara (2012) suggests numerous factors as; Strikes, Severe weather or seasonally high number of cargos for port congestion. In the Nigeria context, the causes seem to expand and deviated towards man-made / managerial inefficiency. The endemic port congestion bouts in the Nigerian ports are traceable to a number of factors as follows:

GOOD FUNCTIONING CARGO HANDLING EQUIPMENT / PLANT:

They are required for quick loading, off-loading and transferring of cargos from one point to the other in ports.

Scholars believe that lack of plant and equipment creates room for corruption as lack of plants result to rationing of the few available plants for staking, positioning for examination and delivery. In line with the above Maduka (2000) stressed the importance of maintenance infrastructural facilities staking that the level of efficiency in ports operations generally as a function of the availability of stock of cargo handling plants and equipments the further reported that as at 1999, Nigeria had only less than 300 functioning plants and equipment in our various ports it is quite discouraging to note that by 2005 only 20% of about 569 plants and equipment as recorded in 2002, were functioning after the private terminal operator (PTO) took over. Emeghara (2012) stressed that in Apapa container terminal, it was discovered that the two cranes used in loading and discharging cargoes from ships in the heat of port congestion are same ones used in bringing containers for custom examination. This implies that when the equipments are working on the ship; importers who are ready for inspection must wait. The story is not much different from other busy ports in Nigeria.

SPACE: Its of paramount importance for terminal operations, enormous space is required for temporal storage of cargo customs inspection, trailer parks, maneuvering of cranes and cargo handling equipment and for container operations. Gabriel (2019) observes that at a stage in Apapa container terminal in 2005 more than 200 cargo ships were waiting to berth, those that have already berthed could not find space to off load their cargo as block stacked containers much like mini-sky-scrappers took over the available space. This implies that 260,000 to 300,000 containers are yet to get to their owners or importers and over 200,000 containers are staked around the port for inspection.

Again in most Nigerian ports manufacturing industries occupy up to 60% of available space that should have been dedicated to containers and other cargo storage. Port -Harcourt port which also harbors the Dangote cement / depot suffers congestion to the extent that lorries waiting to load cement take up available spaces in ports and down the major roads thereby causing both port and road congestion.

MUTIPLE AGENCIES: Ndikom and Emegara (2012) states that the presence of statutory agencies in ports could be traced from 1913, when the colonial government steps up the maritime department primarily to provide platform for the evacuation of produce to the United Kingdom.

The multi agencies, majority of which are not supposed to be seen in the port, they further noted that, such agencies as police for instance has no role to play in the examination or clearance unless the Nigeria customs service needs their attention; constitutes syndication, toll gates, extorting huge sums of money from importers and causing delays for incoming promising victims thereby encouraging port congestion. There are more than 17 agencies and 13 different customs units and importers must settle or pass through before goods are released. These agencies include

among other; the national Drug law enforcement agency (NDLA), National Agency for food and drug administration and control (NAFDAC), Nigeria police, and Nigeria Police, and Nigeria Navy quarantine etc. The agencies often duplicate offices and obstruct trade facilitation (Oyatoye, Adebisi, & Okoye, 2011). The studies further points out that the agencies who are involve in the clearance of cargo obstruct the concept of selectivity and introduce procedures which are not in consonance with facilitation of trade.

INCONSISTENT POLICIES: Government policies in the transport sector should be geared towards increased participation of the private sector for efficiency and productivity. As Ndikom (2013) explains, deregulation entails the general principle of limited intervention by the government and the principle of allowing free market forces to play dominant role in the determination of demand and supply.

Emeghara (2012) states that the government has the duty to ensure that the maritime industry is given impetus and favorable condition to strive through the enactment of law and consistent policies with legal frame work. But the reverse is the case as government's trade and fiscal policies have over the years have devastating effects on the operational functionality of the ports. Buttressing the importance of consistent policy, the author further asserts that for transport department to be functional, however, the organization must build their transport policy around issues such as the economy, and efficiency in transport operations. Cost-effectiveness of operations, improved standard of which include maintenance and higher standard of management.

The habitual shift from destination inspection to pre-shipment inspection and back to destination inspection through the period 1976-2001, is a good example of policy in consistent leading to a clog in operational functionality.

Reacting to the port congestion that resulted from the changes from pre-shipment inspection to destination inspection, Onwuegbuchunam (2013) remarks that it is a fraud for anybody to suggest that he can do destination inspection immediately, time is required to put the infrastructures in place which will also reduce contacts among operations with customs officers to eliminate corruption at our ports. It took Ghana a smaller country over six (6) years to have a successful transfer from pre-shipment inspection to destination inspection.

Nze and Onyemachi (2018) argues that the part of the reasons for delays and congestion in our ports is that destination inspection took off while customs computation project is yet to be completed the result is that the processing of document is still done manually which usually takes time. Again government policy on band cargo contributed to the congestion of years 2001 through 2006. Over 60% of imported cargoes were affected by the policy as importers fled the ports abandoning their consignment for fear of possible prosecution. The antics of these multiple examiners is well explained by Ndikom (2005) that unfortunately, the so called joint examination of cargo by the multiplicity goods from our ports because these cargo examiners have bags of tricks to compel freight forwarders to seek for settlement. This cause delays as the importers and their agents often source for more funds to grease the palms of the multiple security agencies.

The reintroduction of destination inspection and the use of ASYCUDA +++ were promoted by the government eagerness to expedite the clearing procedures, but owing to poor implementation and operation, the reverse is the result leading to increased congestion particularly in Apapa ports. Ndikom (2006). The merit of automated clearing procedure is seen in the reduction of documentation, as Soludo (2017) declares; a single good declaration form C 2010, have come to displace the various bills of entry formally used in Nigeria normally filled by freight forwarding agents and presented to custom with other documents. The federal government contracted Cotecna inspection S.A of Switzerland to handle the destination inspection in the western axis where congestion has paralyzed activities and society general surveillance (SGS) to handle Warri and Port-Harcourt ports, Soludo (2017). The study further indicates that importers and clearing agents are complaining that cotecna does not have enough scanners to do the job. The report indicates that apart from the fact that the procedures for doing the scanning is rather cumbersome and time consuming, Coctecna has only 2 scanners doing its job instead of 30 scanners needed given the high volume of business in the western axis.

This implies that thousands of containers are queued up to be scanned by each scanner at any point in time. The obvious result is increased congestion / delays and staff of AP Mollar (one of the P.T.O at the Apapa Container Terminal) in the past it took between 2-3 weeks to clear goods on arrival in the ports, but now at the moment, an importer or agent would consider him-self lucky if his consignment is cleared in 3 months to 4 months. This becomes more intolerable when compared with ports of neighboring countries like Ghana, Benin Republic and Togo where consignment are cleared between 5-7 days of arrival. The use of non-professional (who lack the ability to co-ordinate operational functions and quay side arrangements of containerize cargo as top management and administrations) in

our ports also accounts for high percentage of the cause of port congestion. The inability of the Authority to co-ordinate the inflow and outflows of containerized cargo in and out of our ports are extra reasons for port congestion, Ndikom (2006).

Ogwude (1997) submits that for the ports to be profitable it has be managed like an enterprise, Nigeria ports needs technical managers, port planners and port economist.

EFFECTS OF DELAYS / PORT CONGESTION

The negative effects of port congestion on the Nigerian economy are enormous and multidirectional. Port congestion seem to hinder maritime transport, this in turn, effects international trade which is the panacea for development. And international trade does not make serve in the absence of maritime transport. The stake holders in the maritime industry submits that the losses incurred are unquantifiable as it cuts across through federal government, port authority, importers, exporters, bakers, consumers, etc, Onwuegbuchunam (2013).

However, the resultant effect of delay / port congestion can be further buttressed in the following ways:

Due to the delay experienced by importers in getting their goods cleared in the peak of port congestions in Nigeria, they now resent to diverting their goods to more efficient and freer ports of Cotonou and Togo. This poses a threat to the Nigeria Maritime industry, Onwuegbuchunam (2013).

Ogwude (1997) explains the emerging role of ports as a regional load centre, is due to its geographical position as well as developed infrastructures and efficient services offered by the port administration.

It is therefore a little wonder that the European /West African trade agreement, effect from 1st October, 2005, states that all Apapa bond containers be surcharged on extra 200-300 Euros on 20/40 feet containers respectively. The shipping agencies also increased their fees from \$2500 to \$2600 owing to delay suffered in our ports. Loss of Revenue as a result of delays and congestions in our ports. The importers, who divert their consignment to neighboring ports, transfer much revenue that should have accrued to the coffers of the government to better the lots of such neighboring countries economy. The importers pay for the period the containers remains in the ports even for no fault of their and the time the vessels are delayed in ports. The shipping companies are charging 20 Euros for the first nine (9) days and 25 Euros after nine days on every 20 foot container for demurrage per day. When this figure is multiplied by the number of days the containers remains in the ports and by the numbers of containers we get an insight as to what an importer pays for demurrage while his consignment are not cleared within five days (Ugboma, Ibe, & Ogwude, 2004).

Most importers obtain facilities from banks, due to port congestion and the result delays, they either do not pay back at all or payment is delayed. The Banks are also reeling under the pain of port congestion as some Banks, for instance are holding seminars to x-ray the challenges, posed by the re-introduction of destination inspection, Emegbara (2012).

Ndikom (2013) points out that delays/congestion has led to revenue loss to both consignment owners and the funding banks.

2.0 METHODS

2.1 Research Design

A descriptive survey design was chosen for this study. The population of the study comprises of the 426 companies located in Apapa seaport complex, Lagos doing business in the Apapa Wharf. The sample of population was made up 2130 maritime related workers from the target population located in the seaport complex in Lagos State.

Simple random sampling was used to select 337 participants with a 5% level of significance from the population using

Taro Yamane's formular: $n = \frac{N}{1+N(e)^2}$.

The questionnaire comprised of three sections, Section A, section B and section C. Section A contains items which elicited responses to questions on respondents' demographic data, while Section B contains questions to objective one. Section C deals with questions to objectives two and three which are relevant in testing the stated hypotheses.

In order to ascertain the extent of reliability of our research instrument, we conducted a pilot study on 60 persons, which were not part of the sample adopted for the main study. The administration of the questionnaires was carried out six times within an interval of two months and the outcome of the survey were correlated using Cronbach alpha and reliability coefficient of 87% was obtained. Thus, the instrument was adjudged reliable given its high reliability

coefficient.

Of the 337 questionnaires sent out, 92% return rate was experienced. Microsoft Excel software was used to enter the data while the SPSS software was used for analysis of the data. Tables were used to show some of the required data. Thus, the researcher adopted the percentage method of data analysis to analyze the generated data from the field work. Items on yes or no point scale will be analyzed using mean scale. The cut off mean will be derived as follows $5 + 4 + 3 + 2 + 1/4 = 15/5 = 3$ (approximately).

Decision rule:

Items with mean of 3 and above are accepted while Items with mean below 3 are rejected. Thereafter, simple regression in SPSS version 28 was applied based on the following rule: In order to validate (accept) or nullify (reject) any stated hypothesis tested with the multiple regression, major attention was paid to the P- values of the tested constructs. Therefore, we will reject the null hypotheses where the SPSS p-values are less than alpha (0.05) and the alternative hypotheses accepted.

2.2 Description of Study Area

The population of the research comprises of the entire service providers and all port users in Apapa port complex. The service providers consist of staff of Nigerian Port Authority (former port operators), the staff of the private terminal operators, the dockworkers as presently managed by the Nigeria Maritime administration and safety Agency (NIMASA). The port users consist of the staff of all the shipping companies as well as clearing and forwarding companies.

It was not easy to have the staff population of these organizations present, and the assumption here is that the population is large. Consequently, the adoption of a judgment or purposeful technique was used to arrive or determine those to be interviewed (sample size).

2.3 Sources of Data

The researcher will utilize both primary and secondary sources of data. The secondary instruments will include text books, published materials, journals and the internet, while the primary instrument will be the collection of data through use of the questionnaire and the design take into consideration the objective of the study. Also the method used in this research will include the collation of port statistics data that relates to port-delay/congestion, such as ships turn round time, ships waiting time, cargo throughput etc from the ports statistician's office at Apapa ports complex.

2.4 Procedure for Data Collection and Analysis

From the discussion so far, the following research questions relative to Apapa ports complex operation including the ones earlier raised are identified. These research questions form the basis for the selection of tools for data analysis.

- (1). Are there key determinants of delay in Nigerian Ports?
- (2). What are the causative delay factors specific to Apapa port complex, Lagos?

To answer these questions call for the application of multi-regression model and the kaiser's measure of sampling adequacy of the factor analysis. The multi-regression technique helps in performing correlation analysis of the relationship between the delay determinants and the delay values. In other words, the techniques looked at the delay causative factors at disaggregate level. Customers suffer unaccountable demurrage costs as a result of delays in clearing goods.

Multi-regression techniques believes that there are critical factors that determine delay in port. The list of these factors is inexhaustible. You can add more and more factors according to environment location in an attempt to build a port delay model, the major task of the study.

In multi-regression analysis, the coefficient of each delay variable X_1, X_2, \dots, X_n determines the weight or influence of each causative factor. Consequently, a partial analysis on each causative factor is conducted to determine the change in Y (time in port) the determinant variable relative to X_1 when X_2, \dots, X_n are held constant. To determine the value of a, b_1 , etc. which represent the co-efficient of the independent variable (causative factors) calls for the solving of three multi-regression equations simultaneously. Also, the factor analysis was employed to analyze the data using the Kaiser's measure of sampling adequacy as an index of ranking the factors. The higher the Kaiser's value, the more significant the factor becomes.

$$\Sigma y = na + b_1 \Sigma X_1 + b_2 \Sigma X_2$$

$$\sum xy_1 = a \sum X_1 + b_1 \sum X_1 + b_2 \sum X_1 X_2$$

$$\sum X_2 y = a \sum X_2 + b_1 \sum X_1 X_2 + b_2 \sum X_2$$

2.5 Models Applied

One of the major output expected from the study is the over-all delay model for Apapa ports complex respondents were asked to show their perception on each delay causative location. This was modeled using a multi-variate regression analysis that links delay to causative factors. This is a very useful tool in dealing with variable relative to many explanatory variables to establish the relationship between each explanatory variable and the turn-round time of ships in the port.

The basic model will look like this;

$$Y_{it} = A_0 + b_1 X_{1i} + b_2 X_{2i} + b_3 X_{3i}$$

Where $X_{1i}, X_{2i}, X_{3i}, \dots, X_{ni}$ delay variable

i = any port, e = error, t = time.

3.0 RESULTS

In this section, we focused on presenting our data, analyzing and discussing same. Our distributed and retrieved questionnaires experienced a 92% return rate, translating to 310.

Table 2

In table 2, the return rate of the questionnaires was 310 out of 337 distributed. The male respondents recorded 209 (67.42%) over female respondents that was 101 (32.58%). From marital status, those who are married were 161 which was 51.94%, single recorded 44.84%, and divorce recorded only 3.23%. In the age distribution section, respondents who are below 25 years were 38 (12.26%), 25-34 years 135 (44.55%), 35-44 years 102 (32.90%) and 45 years and above 35 (11.29%).

While in educational level section, O'level certificate had 99 (31.94%), respondents with diploma 81 (26.13%) while Graduate were 130 (41.94%)

Objective one: To identify the key determinants of delays in Nigerian Seaports

Table 3

The result in Table 3 indicates that 96.77% were of the opinion that there are key determinants of delays in Nigeria's seaports while 3.23% disagreed to this.

Table 4

From the table 4 above the mean record showed that all variable has positive impacts and was therefore accepted. Thus key determinants of delay factors has been able to reduce the key delay factors to poor infrastructure problem as 217 respondents agreed to it. Increase in cargo traffic was agreed to by 219 respondents as a major determinant of delay factor at the seaport. Inefficient clearing procedures was heightened as a key delay determinant at the seaport with 205 agreeing to this. Reduced productivity by Port workers way also noted to be a major delay factor determinant as 254 respondents believe that this is, and responded in the affirmative. Another interesting factor that surfaced and had the agreement of 260 respondents was Consignee attitudes. 205 respondents agreed that Poor terminals and poor delivery 'plans are responsible for delays at the Nigerian seaports.

Objectives two: To determine the causative delay factors specific to Apapa port complex, Lagos

Table 5

From the table 5 above, 293 respondents were of the opinion that shoddy implementation of Port reform programme at Apapa seaport complex including no stacking area reserved for the Nigeria Customs Services caused untold delays in the clearing of port consignments. 197 respondents believe that terminal operators inefficiencies and the imposition of unreasonable high port dues affects speed of consignment release from the Apapa seaport. Inadequate port facilities at the Apapa seaport was seen by 279 respondents as being responsible for delays in the discharge of consignments from the Apapa seaport. Government policies at the Apapa wharf are believed by 195 to be a major cause of clearing delays at the Apapa seaport. 244 respondents agreed that inadequate transport network system linked to ports is responsible for delays at the Apapa seaport complex.

High cost of Demurrage and cumbersome procedures for clearing goods causes delays of consignments clearing at the Apapa seaport complex was supported by 291 respondents.

H_{01} : Delay factors does not significantly affect Seaport Performance in Nigeria.

H_{A1} : Delay factors significantly affects Seaport Performance in Nigeria.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.851 ^a	0.761	0.752	-0.31979	2.168

a. Predictors: (Constant), Nigeria Seaport Delay Factors

b. Dependent Variable: Seaport Performance

ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	47.954	2	47.954	48.914	0.000 ^b
	Residual	12.681	270	0.102		
	Total	60.635	272			

a. Dependent Variable: Nigeria Seaport Delay Factors

b. Predictors: (Constant), Nigeria Seaport Performance

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.149	0.106		20.364	0.000
	Nigeria Seaport Delay Factors	0.559	0.026	0.889	21.654	0.000

a. Dependent Variable: Nigeria Seaport Delay Factors

The results show that Nigeria Seaport Delay Factors will result to 76.1% fall in Nigeria Seaport Performance with adjusted R-square value of 0.761.

H₀₂: Delay factors does not significantly affect Apapa seaport Performance.

H_{A2}: Delay factors significantly affects Apapa seaport Performance.

.Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.706 ^a	0.687	0.614	-0.31979	1.928

a. Predictors: (Constant), Apapa seaport delay factors

b. Dependent Variable: Apapa seaport Performance

ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	47.954	2	40.154	51.914	0.000 ^b
	Residual	12.681	269	0.102		
	Total	60.635	271			

a. Dependent Variable: Apapa seaport delay factors

b. Predictors: (Constant), Apapa seaport Performance

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.149	0.106		22.364	0.000
	Apapa seaport delay factors	0.659	0.066	0.789	24.654	0.000

a. Dependent Variable: Apapa seaport delay factors

The results show that Apapa seaport delay factors will result in 68.7% decline in Apapa seaport Performance with adjusted R-square value of 0.614.

4.0 DISCUSSIONS

The results show that Nigeria Seaport Delay Factors will result to 76.1% fall in Nigeria Seaport Performance with adjusted R-square value of 0.761. Besides, the beta value of 0.559 and p-value that is less than 0.05, it is established that there is a significant influence of Nigeria Seaport Delay Factors on Seaport Performance in Nigeria. Therefore, null hypothesis is rejected and we accept the alternate hypothesis that there is significant effect of port delays on port performance in Nigeria. This is in line with the results of Onyema, Obinna, Emenyonu, & Emeghara (2015), Ugboma, Ibe, & Ogwude (2004) and Ndikom (2013) who all agreed that port clearing delays and congestion results to losses for both consignment owners and the government/economy.

The results show that Apapa seaport delay factors will result in 68.7% decline in Apapa seaport Performance with adjusted R-square value of 0.614. Besides, the beta value of 0.659 and p-value that is less than 0.05, it is established that there is a significant influence of entrepreneurship on employment creation. Therefore, null hypothesis is rejected and the alternate hypothesis accepted. This result agrees with the work of Ndikom (2006) and Emeghara (2012), who both agreed that delay factors at the Apapa seaport significantly affects its performance.

5.0 CONCLUSION

This study set out to evaluate the delay factors at the Nigeria seaports and studies particularly the effect of the delay factors at the Apapa seaports and attendant effect on the economic performance of Apapa seaport. The study used primary data through the administration of questionnaires to a port sample of 337, [arrived at using the Taro Yamane's population sample formular] and a respondent feedback of 310. The resulting responses were analyzed and tested using the ANOVA statistic and the results of the tests indicates a significant effect of the delay factors on the port outputs in Nigeria and at the Apapa seaport in particular.

Based on the forgoing, we recommend as follows;

1. The Federal government should endeavour to create more evacuation corridors to the seaports particularly the Apapa seaports, as this will facilitate prompt service delivery in the seaport complexes and improve the ease of doing business.
2. The government should create functional and efficient evacuation infrastructures at the Apapa seaports including reducing multiplicity of agencies in the seaport to unhealthy competition and clearing bureaucratic bottlenecks.

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Appendix

An Evaluation of the Delay Factors in Nigeria Seaports: A Study of the Apapa Port Complex, Lagos

List of Tables

Table 1: Nigeria Ports and Facilities.

S/N	Ports	Location	Max Depth of Berth (M)	Quay Length (M)
1	Apapa Port	Lagos	9.0	2459
2	Tincan Island	Lagos	11.5	2045
3	Roro Port	Lagos	11.5	705
4	Container Port	Lagos	10.5	1005
5	Delta Port	Warri	11.5	2506
6	Calabar Port	Calabar	11.0	1137
7	Port-Harcourt	Port-Harcourt	7.5	1877
8	Federal Light Terminal	Onne	5.7	1185

Source: NPA Handbook; 2018

Table 2: Demographic Factors

Gender	Frequency	Percentage
Male	209	67.42
Female	101	32.58
Total	310	100
Marital status		

Single	139	44.84
Married	161	51.94
Divorce	10	3.23
Total	310	100
Age		
Below 25 years	38	12.26
25-34 years	135	43.55
35-44 years	102	32.90
45 years and above	35	11.29
Total	310	100
Highest level of education		
O`level certificate	99	31.94
Diploma	81	26.13
Graduate	130	41.94
Total	310	100

Authors' field work questions, 2022

Table 3: Key determinants of delays in Nigerian Seaport n=310

Is there any determinant of delay in Nigerian Seaport?	frequency	Percentage
Yes	300	96.77
No	10	3.23

Authors' field work questions, 2022

Table 4: Key determinants of delays in Nigeria Seaports n=310

Statements	SA	A	SD	D	Mean	Decision rule
Poor infrastructures is responsible for delays in Nigeria Seaports	76	141	13	63	2.74	Accepted
Increase in cargo traffic is a major cause of Port delays	91	128	39	52	2.83	Accepted
Inefficient clearing procedures causes delays at Seaports	109	96	12	86	2.73	Accepted
Reduced Productivity by Port workers causes delays at the Nigeria Seaports	109	145	33	25	3.09	Accepted
Consignee attitude affects the rate of cargo release at the Seaports in Nigeria	114	146	26	21	3.14	Accepted
Poor Terminals and poor delivery Plans causes delay at Nigeria Seaports	110	95	13	85	2.73	Accepted

Authors' field work questions, 2022

Table 5: The causative delay factors specific to Apapa port complex, Lagos

Statement	Yes	No	Total
Does shoddy implementation of Port reform programme at the Apapa seaport complex including no stacking area reserved for the Nigeria Custom Services create delays in the clearing of consignments?	293	17	310
Terminal operators' inefficiencies and the imposition of unreasonable high port dues affects speed of consignment release from the Apapa seaport.	197	113	310
Inadequate Port facilities at the Apapa seaport causes delay in discharge of consignments from the seaport.	279	31	310
Government policies at the wharf results to clearing delays at the Apapa seaport	195	115	310
Inadequate transport network system linked to ports is responsible for delays at the Apapa seaport complex.	244	66	310
High cost of Demurrage and cumbersome procedures for clearing goods results to delays consignment clearing at the Apapa seaport complex.	291	19	310

Authors' field work questions, 2022