

NEXUS BETWEEN NATURE OF BUSINESS AND DELAYS EXPERIENCED IN CARGO CLEARANCE PROCESS IN LAGOS SEAPORTS

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ABSTRACT

This study analyzes the relationship between nature of business and delays in container clearance process. It also examines major causes of delay in each of the identified seven stages of the cargo clearance process in Apapa and Tin Can Ports, Lagos, Nigeria. The identified stages include: e-Form M processing; Pre-Arrival Assessment Report (PAAR) processing; assessment of Duty; payment of Duty; Examination; Customs release and Delivery. The study's population consists of 43 publicly quoted manufacturing companies listed on the Nigerian Stock Exchange and which regularly import containers through Lagos Seaports. Structured questionnaires were administered to the 41 firms selected, but only 23 were actually filled and returned. This number represents 56 percent of the sample size. Analysis of data was done with the aid of SPSS. The results show that major causes of delay include incomplete and poor documentation problem with a share of 68.4%, 88.2% and 37.5% for e-form M, PAAR and Assessment of Duty stages respectively. Other causes of delays include: network or server problems which account for 53.8% (Payment of Duty); delays related to physical examination of containers which covers 29.4% (Examination); network and valuation problems which stand at 30% (Customs Release). Port congestion and port logistics problems also constitute problems which account for 44.4% and 33.3% respectively (Delivery). This paper recommends that importers and exporters should use highly trained staff or outsource documentation to professional brokers to avoid delays resulting from incomplete or inaccurate documentation.

Key words: Nature of business, customs procedures, delays in clearance, analysis.

JEL. Classification: L95; L91; L98

1. INTRODUCTION

Empirical data have shown that effective customs clearance influences firms' performance. The study of Li and Wilson (2009) on trade facilitation and expanding the benefits of trade at the firm level showed that improvement in trade facilitation indicators tends to increase the probability that firms will become exporter as well as their export propensity. Similarly, the work of Persson (2010) on whether trade facilitation affects the extensive margin, found that if export transaction costs: measured by the number of days needed to export a good, declined by 1 per cent, the number of exported differentiated and homogeneous products would rise by 0.7

and 0.4 percent respectively. Policy simulations further illustrate that the number of exported differentiated and homogeneous products would increase by 64 and 29 per cent respectively. Additionally, the suggestion of Manufacturers Association of Nigeria (2019) that delays in cargo clearance at the port should be investigated in order to improve manufacturing performance in Nigeria also reveals the importance of cargo clearance in firms' performance. It is therefore clear, based on the aforementioned evidences that an efficient cargo clearance in seaports enhances a business location advantages.

Studies have identified seaports' logistics costs as one of the main factors to be mitigated in order to improve firms' performance in Nigeria (Omoke *et al.*, 2017 and Ekpo 2019). A seaport is the most significant node of the maritime transport mode where a major proportion of transportation cost is incurred. Among seaport logistics costs, a study by Deloitte (2017) found that customs clearance alone accounts for over 80 percent of overall seaport charges borne by manufacturers at the Nigerian seaports. Similarly, Cotecna (2021) has observed that it takes two to three weeks instead of 48hours United Nations benchmark to clear cargo in Nigerian seaports and delays translate to a cost (Carballo *et al.*, 2014). High cost of business operation results in an increase in the price of goods and a decrease in the demand of such goods (Akintayo 2010). Thus, a decrease in seaport logistics costs will result in a decrease in the cost of business. Similarly, a decrease in price of goods leading to an increase in the demand of such goods will lead to improvement in firm's performance (Akintayo 2010; Carballo *et al.* 2014).

The manufacturing sector is a good area to examine the nexus between nature of business and delays experienced in cargo clearance in seaports. Available indicators such as contribution to Gross Domestic Product (GDP) and Manufacturing Value Added (MVA) show that the sector is far from becoming its best (Yusuf, 2023). A World Bank national accounts data (2020) showed that there was no indication of steady growth in the Nigerian Manufacturing Value Added (MVA) over a period of almost four decades (1982 – 2018). According to the data, Nigeria's Manufacturing Value Added (MVA) was \$33.3 billion in 1981. Instead of increasing, the value reduced rather sharply until it hit \$5.1 billion in 1993. Gradually, it rose till it got to \$27.5 billion in 2008. Then it dropped to \$22.9 billion in 2009, and from there, it skyrocketed to an all-time peak of \$54.8 billion in 2014. In 2015, it reduced to \$46.6 billion and it's continued on a downward curve ever since. Surprisingly, the figure as of 2018 (36 years later) was \$30.9 billion which was the same with as it was sometime in 1982.

Several works have been done on customs clearance delays both in inside and outside the seaports. In a study by Shepa (2013), it was discovered that a 10-day delay in customs clearing of imported goods, on the average reduces imports by 1.6 %. In another study by Carballo *et al.* (2014), it was found that port-delays due to Customs procedures affect firms' productivity. Other related studies by Kwoli (2012); Agbesi (2013); Abeywickrama, & Wickramaarachchi (2015); and Kilibarda, Andrejic and Popovic (2017); have investigated impact of technology, and single window implementation on the efficiency of customs process. Similarly, Sirika and Gizaw (2016) investigated the factors affecting custom clearance cost and reported that the delay time significantly affect customs clearance cost. Again, Rhodalyn (2018), showed that implementation of single window system leads to a reduction in transaction time and the cost of goods clearance. Furthermore, Nguyen *et al.* (2021) indicated that e-Customs implementation positively influenced firm performance.

Most of these studies apart from depending solely on import and export data, could not clearly explain causes of delays in cargo clearance. They: also failed to consider nature of businesses in relation to delays in cargo clearance. Thus, many of past studies did not take a holistic

perspective of the entire customs process of cargo clearance and how they cause delays. Analyzing cargo clearance process as a system, for instance, suggests that elements (specific procedure) interact together to form the clearance system. Thus, there is a need to analyze specific business and procedure in the system to be able to identify the actual causes of inefficiencies in the clearance system. The questions here are: (i) Is there any connection between nature of business and delays in the container clearance time? (ii) What are the peculiar delays at each stage of the containers clearance process in Lagos seaports? The paper is organized into five sections. Following the introduction section is section two where studies relevant to delays in cargo clearance process in relation to firms' performance were reviewed. The third section outlines the methodology. Section four presents the results and discussions on them. Section five presents the conclusions and recommendations.

2. LITERATURE REVIEW

2.1 Customs Procedures and Delays

Several researches have been conducted on clearance time, delays in Customs procedures and their effects on firms' activities. For instance, the work of Anton (2013) investigated the effect of customs clearance time on the percentage of imported goods. The results showed that a 10-day delay in customs clearing of imported goods, on average; reduce their imports by 1.6 %. This finding implied a relationship between customs clearance time and imported goods. Notwithstanding, the study did not reveal the causes of delays; thus, emphasizing the need for a holistic approach to cargo clearance process studying. Similarly, Shepa (2013) investigated the challenges behind ineffective customs clearance of goods at seaports using medical stores in Dares Salam as a case study. It was found that lengthy payment and clearance procedures (due to small numbers of clearance staff), corruption arising from circumventing various documentation requirements and lack of transparent procedures were the main challenges. This is a foreign study and may not apply to Nigerians seaports since ports are unique. Besides, nature of business was not considered.

In their study, Carballo *et al.* (2014) estimated the impact of port-of-entry delays due to clearance procedures on firm-level imports in Peru. Using regression models, the result shows that an additional day of delay raises cost for small firms by about 0.7% and by 0.9% for large firms. Based on the result, there is a relationship between clearance procedure and firms' productivity. This study is foreign-based and limited in scope. It does not show the relationship between procedure-specific delays on firm-level of imports. Again, the study does not allow for business-specific case studies. It is necessary, therefore, to understand the relationship between nature business and specific delays in each part of the process.

Martincus *et al.* (2015) estimated the effects of custom-related delays on firms' exports. The study used a unique dataset that consists of the universe of Uruguay's export transactions over the period 2002–2011 and includes precise information on the actual time it took for each of these transactions to go through customs. The study accounted for potential endogeneity of these processing times by exploiting the conditional random allocation of shipments to different verification channels associated with the use of risk-based control procedures. The study's results suggest that delays significantly negatively impact firms' exports along several dimensions. Impacts are more pronounced on sales to newer buyers. The study is similar to the study of Anton (2013) which was earlier reviewed.

Furthermore, Sirika and Gizaw (2016) analysed factors affecting custom clearance cost in Ethiopian Revenue and Customs Authority, Addis Ababa, the result showed that the delay time has a significant effect on customs clearance cost. The study of Hoffman *et al.* (undated, cited

in Oni & Ojekunle, 2022) on the contributions of customs, traders, and the port terminal operator to cargo time delays through the parallel customs and ports processes, found that customs processes are the primary sources of import cargo delays, while terminal operator processes are the primary sources of transit cargo delays.

Nguyen *et al.* (2021) identify the drivers and barriers of e-customs implementation in Vietnam (known as a developing country with a lower technological environment) along with determining the impact of e-customs on firm performance. The survey was conducted with managers of firms in five cities and provinces dominating Vietnam’s international trade. The data was analyzed using structural equation modeling (SEM). The findings show that relative advantages and national culture are the two significant drivers while compatibility and ease of use are the barriers. Additionally, the study established that e-customs implementation positively influenced firm performance in Vietnam. This study is foreign-based and limited in scope.

In Nigeria, Cotecna (2021) stressed that the change from the pre-shipment inspection policy to a destination inspection policy for imports is the reason behind delays in cargo clearance. Under the new systems, all imports are examined on arrival. Meanwhile, the international standard for the efficiency of customs regulatory procedures as contained in the International Convention on the Simplification and Harmonization of Customs Procedures (better known as the Revised Kyoto Convention); states that to the extent possible, each country shall adopt or maintain procedures allowing, goods to be released: first, within 48 hours of arrival or as soon as practicable; and second, where possible, at the point of arrival, without temporary transfer to warehouses (Oni & Ojekunle 2022). Table 1.0 shows import and export process timelines in Nigerian seaports.

In most of the aforementioned studies, the actual causes of delays in cargo clearance are not clear. Additionally, these studies failed to show how nature of business is connected to causes of delays in cargo clearance. Thus, many of past studies did not take a holistic perspective of the entire customs process of cargo clearance and how they cause delays. The current study is of the opinion that analyzing the delays, based on business sectors and at every stage of the process, will make problems identification easier. This will enhance sustainable solutions implementation. Hence, the nexus between nature of business and delays experienced in cargo clearance process at Nigeria seaports will improve cargo clearance process at Nigerian seaport.

Table 1.0: Import and export process timelines in Nigerian seaports

S/N	description of process	Initialization	Conclusion	Timeline
1	FORM M Approved by Custom Service	Authorized Bank verify the e-form M Application, Validate and Upload to NCS	Register e-Form M	24 Hours
2	PAAR issue	Authorized bank capture data, upload and validate scanned copies of final documents to NCS PAAR Platform	Generate PAAR	24 Hours
3	Examination Release	Placement of Container for physical examination	Release Customs	by 48 Hours

4	Endorsement of NXP Form for export by custom	Submission of NXP form by Exporter or Agent	Endorsement and Dispatch to Exporter or Agent	24 Hours
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Source: Nigerian Customs Service, Apapa Command, (2020)

3. METHODOLOGY

3.1 Theoretical Framework.

This study hinges on organizational system theory which explains how constantly interacting elements (units) work together to achieve a common goal (Kast & Rosenzweig 1985; Ohida, *et al.*, 2023). Afolayan, (2004) applied the organizational system theory to seaport operations and found that seaport operations such as the discharge, transfer, storage and delivery of cargo: work together to achieve the ultimate goal of an efficient seaport system. Again, Martinez and Eguren, (2013) analyzed the maritime transport process using organizational system theory. Their study found that if there is no physical transformation, the cargo constitutes both the system input and output. This assertion suggests that no matter the number of interacting elements in the system, they are only working to fulfill the common goal - transporting cargoes. In the same vein, the cargo clearance process in Lagos seaports is a system where constantly interacting elements (units) work together to achieve a common goal. Seven procedures including processing of Form M; processing of Pre-arrival Assessment Report (PAAR); assessment of duty; payment of duty; cargo examination; custom release and delivery operations work together to form the clearance system. To understand actual causes of delays in the process therefore, a holistic perspective of the entire customs process is imperative since the system is made up of specific procedure with unique characteristics. Thus, organizational system theory is considered the most suitable theory to explain the relationship between cargo clearance process and delays experienced in the process.

This study runs a rank cross tabulation and frequency table in SPSS. Findings are presented on Table 3.0 for business sectors delay by rank Cross-tabulation and Table 4.0 for frequency table of major causes of delays in container clearance. This study adapts the methodology of Shepa (2013) who investigated the challenges behind ineffective customs clearance of goods at seaports using medical stores in Dares Salam as a case study.

3.2 Data Sources

The study focuses on three categories of manufacturing sectors which import cargo regularly through Lagos seaports. Twenty-three (23) firms comprising of 7 consumer goods, 10 health care, and 6 industrial goods were studied. This represents 30.4%, 43.5%, and 26.1% of sampled firms respectively. The study employed primary data which were collected through a questionnaire survey. The study population consists of 43 publicly quoted manufacturing companies listed on the Nigerian Stock Exchange (NSE) (2020) and which regularly import containers through Lagos Seaports. These companies are those located at Ilupeju, Agbara, Ewekoro, Ikeja, Ikorodu, Isolo, Oregun Ota and Shagamu: (which constitute the major industrial estates in Lagos and Ogun States). Using National Education Association (NEA) formula, a sample size of 41 firms was arrived at from a study population of 43. Structured questionnaires were administered to the 41 firms selected, but only 23 were actually filled and returned. This number represents 56 percent of the sample size. The data were analyzed using descriptive statistics.

Each questionnaire was divided into four sections. The first section presents demographic data including: age, educational qualification, area of operations, and work experience of

respondents, mode of transport used, location of business and distance from the seaports. The next section contained items for data on container clearance in Lagos seaports such as the total number of steps taken to complete each procedure, the total number of agencies involved, total number of documents and mode of operations. In the third section, questionnaire items for data on expected and actual time for container clearance at every stage of the process were presented. The last section contained items for data collection on causes of delays in the process.

4. RESULTS AND DISCUSSION OF FINDINGS

4.1 Description of the Container Clearance Procedures in Lagos seaport.

The container clearance system in Apapa and Tin Can Island Seaports consist of seven identified stages based on the field survey. In each of the stages, four elements were measured namely; steps required, the number of agencies involved, the number of documents involved and the mode of operation (manual or electronic). The identified seven stages that make-up the container clearance system include; (i) Processing of e-Form M (ii) Processing of PAAR (Pre-Arrival Assessment Report) (iii) Assessment of Duty (iv)Payment of Duty (v)Examination (vi)Customs Release (vii) Deliver.

Table 2.0: Description of container clearance process in Apapa and Tin Can Island Seaports.

S/N	DISCRIPTION OF PROCESS	AVERAGE NUMBER OF STEPS REQUIRED	AVERAGE NUMBER OF GOVERNMENT AGENCIES INVOLVED	AVERAGE NUMBER OF DOCUMENT REQUIRED	MODE OF OPERATION (MANUAL OR ELECTRONIC)
1	Processing of e-FORM M	3	4	4	100 percent electronic
2	Processing of PAAR	3	3	6	100 percent electronic
3	Assessment of Duty	2	2	4	95 percent electronic
4	Payment of Duty	2	2	3	100 percent electronic
5	Examination	3	6	8	74 percent manual
6	Customs Release	3	4	7	70 percent electronic
7	Delivery	3	5	7	65 percent electronic
8	Total	19	26	39	

Source: Field survey, 2021

In Table 2.0, 19 steps are required to complete the container clearance process in Apapa and Tin Can Ports on the average. A total of 26 government Agencies and 39 Documents are involved in in the container clearance. Regarding the mode of operation, Processing of e-form M, Pre-Arrival Assessment Report (PAAR) and Payment of Duty (which are the first three stages), are 100 percent automated. For Assessment of duty, the level of automation stands at 95 percent. The level of automation in Examination, Customs release and Delivery stages, stands at 74, 70 and 65 percent respectively.

4.2. Nature of Business and Delays in Container Clearance Time

To analyze the relationship between nature of business and delays experienced at the Lagos seaports, SPSS analysis was carried out on the data and the results are shown on Table 3.0

Table 3.0: Business sectors delay by rank Cross-tabulation

Manufacturing sector * Delay by rank Crosstabulation					
		Delay time %		Total	
		Less	High		
Manufacturing sector	Consumer goods	Count	4	3	7
		% within Manufacturing sector	57.1	42.9	100.0
	Industrial goods	% of Total	18.2	13.6	31.8
		Count	1	3	4
	Health care	% within Manufacturing sector	25.0	75.0	100.0
		% of Total	4.5	13.6	18.2
	Others	Count	3	7	10
		% within Manufacturing sector	30.0	70.0	100.0
	Total	% of Total	13.6	31.8	45.5
		Count	1	0	1
	Total	% within Manufacturing sector	100.0	0.0	100.0
		% of Total	4.5	0.0	4.5
	Total	Count	9	13	22
		% within Manufacturing sector	40.9	59.1	100.0
Total	% of Total	40.9	59.1	100.0	

Source: SPSS Analysis.

In Table 3.0, containers of consumer goods has a high delay time of 42.9% of the time, while containers of industrial goods and healthcare goods stands at 75% of the time and 70% of the time, respectively. This results suggest that containers of consumer goods are likely to experience lesser delays (42.9% of the time), while containers of industrial goods and healthcare goods are more likely to experience higher delays (75% of the time and 70% of the time, respectively).

4.3. Major Causes of Delays in Container Clearance

In analyzing the major causes of delays in container clearance, SPSS Analysis was carried out. The results of the descriptive analysis for all the stages in the container clearance system, is shown on table 4.0.

Table 4.0 Major causes of delays in container clearance

Procedure	Causes of Delays	Percentage
Processing of Form M	Error due to documentation	15.8
	Incomplete documentation	52.6
	Network problem	5.3
	Technical problem	26.3
	Total	100.0
Processing of PAAR	Error due to documentation	17.6
	Incomplete documentation	70.6

	Negligence	5.9
	Technical problem	5.9
	Total	100.0
	Delay in issuance of rotation number	6.3
	Incomplete documentation	25.0
	Negligence	6.3
	Network problem	18.8
Assessment of Custom Duty	None	12.5
	Poor documentation	12.5
	Rotation number	6.3
	System blockage	6.3
	Technical error	6.3
	Total	100.0
	Network problem	53.8
	None	15.4
Payment of Custom Duty	Technical error	15.4
	Technical problem	15.4
	Total	100.0
	Lack of equipment	11.8
	Network problem	17.6
	No scanner	17.6
Examination	None	11.8
	Physical examination	29.4
	Positioning of container	11.8
	Total	100.0
	Lack of equipment	10.0
	Network problem	30.0
	None	10.0
Custom Release	Query from custom	10.0
	Short payment	10.0
	Valuation problem	30.0
	Total	100.0
	Non availability of trucks	11.1
	None	5.6
Delivery	Port congestion	44.4
	Post logistic problem	33.3
	Traffic gridlock	5.6
	Total	100.0

Source: **SPSS analysis**

4.4. Discussion

The results on Table 4.0 show that documentation-related problems account for 68.4% of the causes of delay in e-FM processing while Network and technical problems account for 31.6%. It is evident here that the prime causes of delays in container clearance in FM processing are incomplete and poor documentation with a share of 68.4%. Similarly, incomplete or poor documentation problems, account for 88.2% of the delays in container clearance under Pre-Arrival Assessment Report (PAAR) while negligence and technical problems account for 5.9% respectively. Here, the major causes of delays in container clearance are incomplete and poor documentation with a share of 88.2%. Regarding Assessment of Duty, the share of causes of delays in container clearance show that the delays due to issuance of rotation number accounts for 12.6% while incomplete or poor documentation stands at 37.5%. Network related problem such as system blockage accounts for 25.1% and technical problems accounts for 6.3% of the delays in the Assessment of Duty stage. Thus, the major causes of delays in the Assessment of Duty stage are incomplete and poor documentation with a share of 37.5%.

Furthermore, analysis of causes of delays in the Payment of Duty stage shows that Network-related problem accounts for 53.8% while technical error/problem shares 30.8%. Here, the major cause of delays is Network or server problems (53.8%). Under the Examination stage, the result shows that lack of equipment (11.8%): network problem (17.6%): absence of scanner (17.6%): physical examination problems (29.4%) and positioning of containers (11.8%) are the causes of delays. Thus, the major cause of delays in the examination stage is physical

examination of containers with a share of 29.4%. In the case of Customs Release, causes of delays include: lack of equipment (10%); network problem (30%); query from Customs (10%) and valuation problem (30%). Major causes of delays under Customs Release procedure include: network and valuation problems with a share of 30%. For the Delivery stage, causes of delays include; non availability of trucks (11.1%); port congestion (44.4%); port logistics problem (33.3%) and traffic gridlock (5.6%). So, the major causes of delays include in the delivery stage are: port congestion and port logistics problem with a share of 44.4% and 33.3% respectively.

5. CONCLUSION AND POLICY RECOMMENDATIONS

This paper analyzed major causes of delays in the container clearance system in Apapa and Tin Can Ports location. Three out of the seven stages namely: processing of e-form M, pre-Arrival Assessment Report (PAAR) and Payment of Duty are currently one hundred percent automated. Assessment of duty is ninety-five percent automated while the remaining five percent is done manually. Examination, Customs release, and Delivery, stages are currently seventy four, seventy and sixty five percent automated respectively. The claim of the Nigerian Customs Service (CNS) in 2021 (Guardian of 24th December, 2021) that it has integrated and automated over 90% of its activities is only true of four out of the seven procedures in the clearance system. Only processing of FM, PAAR, Assessment of Duty are one hundred percent automated. The remaining three procedures namely; Examination, Customs release, and Delivery operations are 74%, 70%, and 65 % automated.

This study is in agreement with some past researches. Among these is the work of Shepa, (2013) who found in Dares Salam seaports that lengthy payment procedures, lengthy clearance procedures (due to small numbers of clearance staff), corruption due to various documentation requirements and lack of transparent procedures were the main challenges behind ineffective customs clearance of goods. The current study contributes to the literature by showing that delays experienced in cargo clearance process in seaports vary across business sectors. For instance, consumer goods businesses are likely to experience lesser delays than industrial goods and healthcare goods businesses respectively. Again, major delays experienced in each of the seven stages of the clearance process are highlighted.

It is imperative for trade facilitation stakeholders and policymakers to improve the efficiency in cargo clearance process in Nigerian seaports. This study, therefore, recommends that:

1. Importers and exporters should use trained personnel or professional brokers to handle the processing of e-Form M, PAAR and payment of duty to avoid delays resulting from incomplete or inaccurate documentation.
2. Nigerian Customs Service should tackle challenges associated with the current Customs Integrated System (NICIS) by a way of upgrading.
3. It should also complete the automation of the entire cargo clearance system to eliminate delays resulting from physical examination of cargoes.

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