FACTORS INFLUENCING CONTAINER CARGO CLEARANCE AT THE INLAND CONTAINER DEPOT EMBAKASI

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A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF ECONOMICS, ACCOUNTS AND FINANCE ADMINISTRATION IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF THE POST GRADUATE DIPLOMA IN CUSTOMS ADMINISTRATION OF JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY

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DECLARATION

This project is my original work and has not been for academic award in any other university.

Signature…… Date……

Lawrence Ayugi

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This project has been submitted for examination with my approval as the appointed supervisor

TIMONAH NAMUTILA

Signature…… Date……

DEDICATION

I dedicate this study to the strong woman in my life; who surround me as a family and a friend; for your unfailing encouragement, love and prayers.

To my daughter Olivia - may this accomplishment be an inspiration to you, in your pursuit of knowledge and excellence. Always keep in mind, that anything is possible; and that you can do it!

ACKNOWLEDGMENT

I hereby appreciate my beloved family for their understanding and invaluable support in writing the project

I also sincerely thank my supervisor for having agreed to supervise this research project, the guidance, comments and patience in reading the drafts without which the research would not have been a reality.

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ACRONYMS

ICD:	Inland Container Depot
ICDE:	Inland Container Depot Embakasi
ICDN:	Inland Container Depot Nairobi
KPA:	Kenya Ports Authority
KRA:	Kenya Revenue Association
KEBS:	Kenya bureau of standards
TEU:	Twenty fort equivalent unit

DEFINITION OF TERMS

CARGO CLEARANCE: Passing of goods through the customs so that they can enter or leave the country (Lyons 2012).

CARGO: Load of goods which are sent in a ship or plane (Lambert et al, 2011).

CONTAINER: The term container includes maritime containers, aircraft containers and any portable compartment in which freight is placed (as on a train, truck, aircraft or ship or any other means of conveyance) for transportation. (WCO SAFE, 2018)

DEMURRAGE: Money paid to a customer when a shipment is delayed at a port or by the customs (Jean, 2012).

DOCUMENTATION: All documents referring to something (Holgan et al 2010).

SHIPMENT: includes a maritime cargo container, aircraft container, truck trailer or rail car. (WCO SAFE, 2018)

SCANNING: Means capturing information (which may include images or radiation signatures) goods and means of transport by utilizing non-intrusive detection equipment. (WCO SAFE, 2018)

STAKEHOLDER: Mean a person or a group that has direct or indirect stake in an organization because it can affect or be affected by the organization objectives and policies (Stakeholders report, 2012).

ABSTRACT

Delays on container cargo clearance has emerged and evident at ICD Embakasi Nairobi with indicated long clearance period or overstay of received containers at the port for more than 10- 12 days. The delay in clearing containers at the ICD is made worse by unclear communication in nominating containers for clearance at the ICD, inadequate cargo handling equipment, and long customs clearance procedures and requirements. The objective of the study is to assess the factors influencing container cargo clearance at the ICD Embakasi with focus on specific objectives, to establish the effects of customs documentation process on container cargo clearance at the ICDE, to determine the effects of handling equipment on container cargo clearance at ICDE and to find out the effects of transport infrastructure on container cargo clearance at ICDE This study adopted a descriptive research with survey of a total population of 200 and apply a stratified random sampling technique to select a sample size of respondents. The study uses questionnaires in order to bring out the results of the study as expected. Respondents are drawn from the departments within Kenya Revenue Authority, Clearing agents and Kenya Port Authority. The study analyzes the data using Statistical Package for Social Sciences (SPSS). From the research findings, the study concluded all the independent variables studied have significant effect on container cargo clearance at ICDN as indicated by the strong coefficient of correlation and a p-value which is less than 0.05. The overall effect of the analyzed factors was very high as indicated by the coefficient of determination. The overall P-value of 0.00 which is less than 0.05 (5%) is an indication of relevance of the studied variables, significant at the calculated 95% level of significance. This implies that the studied independent variables namely custom documentation process, handling equipment and transport infrastructure have significant effect on container cargo clearance at ICDN.

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

Container cargo clearance is the time taken in processing the received cargo, unloading, verification, internal movement of container to Inland Container Depot and issuing of the container cargo to logistic firms, owner or transshipping in case of container cargo on transit. Container cargo clearance is the process by which: the processing time of documents, offloading, verification, inland haulage and issuing of cargo is not done according to stipulated time. Cargo delays originate either from ill adapted infrastructure; insufficient level of traffic within the physical and environmental constraints or due to lack of technical capability contributes to cargoes delay on cargo clearance in several ports in the world. "Administrative procedures or handling problems are other causes of delays on cargo clearance in port terminals of the world" (Cuadrado et al. 2010).

According to Antwerp, (2011), the overall level of delay on cargo clearance is not alarming as in the United States, Asian and Russian ports. The optimal utilization of the port terminal is difficult to deal with situations where port is full to capacity at the peak period. The UK port of Southampton has had serious Cargo clearance with ship operators opting to unload cargo at Rotterdam or Antwerp and then feed the freight back to the UK by shipping on smaller vessels through alternative ports. At port level the cargo delays adversely affect all operators namely the carriers, terminal operators and road haulers'.

The port of Rotterdam's and Durban container terminal operations serves as a benchmark to the port of Dubai and other ports in Africa countries. The governments of Hong Kong and Singapore ports have invested much more in resources to ensure efficiently cargo clearance is

done to earn a lot of revenue for the countries. Gantry cranes are key elements of superstructure in port cargo clearance.

The port of Durban handles the greatest volume of sea-going traffic of any port in southern Africa. For the 2008/09 financial year ended 31 March 2009, the Port of Durban handled a total of 4,554 sea-going ships with a gross tonnage of 114,723,266 or about 38 percent of the ships calling at all South African ports. Container cargo handled during the fiscal year 2011/12 amounted to 78,100,851tonnes, which included oil and petroleum products and container cargo. Total tonnage handled by the port (including a calculation for containers) constituted 45,282,995t of imports, 25,613,589t of exports and 7,204,267t of transshipment cargo giving a total tonnage for the port of 78,100,851tonnes. The combined Durban container terminals handled 2,698,173 TEUs (twenty-foot equivalent units) during 2011/12 of which imports were 1,121,216 exports were 1,077,265 and 499,692 TEUs were transshipped. Included in the above were 32,130 TEUs that were shipped coastwise. Containers handled at Durban represented 62 percent of the total number of containers handled at South African ports.

Dar es Salaam port is the Tanzania principal port with a rated capacity of 4.1 million (dwt) dry cargos and 6.0 million (dwt) bulk liquid cargos. The Port has a total quay length of about 2,000 meters with eleven deep-water berths. Dar es Salaam port handles about 95% of the Tanzania international trade. The port serves the landlocked countries of Malawi, Zambia, Democratic Republic of Congo, Burundi, Rwanda and Uganda. The port is strategically placed to serve as a convenient freight linkage not only to and from East and Central Africa countries but also to middle and Far East, Europe, Australia and America.

Kenya has the best port which is the busiest in East Africa and serves for both East Africa and Central Africa having a capacity of fifteen container ships entering the port of Mombasa. The President of the republic of Kenya Mr. Uhuru Kenyatta with his government has put strategies

and mechanisms in place to ensure that Kenya Revenue Authority remains the main source of revenue for the country of Kenya. The KPA stakeholders have ensured that Kenyan ports remain the top port in East Africa through efficient and effective in providing the best customer services to the customers.

Kenya ports Authority handbook (2017) the port of Mombasa had problems to stack or handle too many inbound containers and not enough space to stack or handle them. The long standing issue had pushed up costs for importers and caused serious problems to the port Authority. Kenya shippers council, issue paper no.3,(2011),the Inland port model has been used worldwide to address the problem of port delays and congestion, India, South Africa and Nigeria are some of the countries that have this model. The model provides for all imported cargo to be transferred directly to inland container depots after discharge from vessel. In Kenya, the Inland Container Depots were created to mainly help in handling de-stuffing of less container load (LCL) cargo with the hope of reducing congestion at the port of Mombasa. With increasing demand for space due to increase in the container handling at the port of Mombasa, the research will establish whether there is need to increase capacity of the port.

1.1.1 Inland container Depot

Container traffic starts at the moment of loading the cargo in a container and ends with its unloading. These are the most demanding operations in the entire transportation process since the manipulation of different types of cargo requires a high-quality level of labor training, high level of technical equipment, as well as an adequate infrastructure with sufficient area of open and closed working spaces. Since the container terminals at sea ports are mainly oriented to the processes of transshipment from ships, wagons, trucks and barges, the processes of loading and unloading of containers are carried out in other locations. These locations can be in the immediate vicinity, distant inland container terminals and warehouses of importers and

exporters. The most important factors in the selection of the location for container stuffing/unstuffing are: price, availability of the necessary technical equipment, speed and quality of services.

Locations near the container terminals are characterized by high container reloading costs caused by large capital investments in facilities and equipment located inexpensive areas around major sea ports as well as by high local transportation costs. Container reloading at user-owned warehouses is conditioned by the level of technical equipment requiring large financial investments and by the time and space limitations of other available capacities. Therefore, the optimal solution to the container reloading problem is the development of an inland container terminal based on the concept of interconnection of different types of cargo and containers at one location with low reloading prices, which would enable a large number of additional cargo operations.

With the introduction of containerized shipping, the traditional system of maritime transportation on the "port to port" basis was completely changed. Application of new technologies and an improved logistical approach have stimulated rapid growth in the multi-modal transport. Inland terminals have thus become the main drivers toward better exploitation of the land infrastructure. This has increased the efficiency of the entire international transportation network and has included inland terminals in an expanded logistical function of seaports. The reasons that contributed to the rapid formation of inland terminals are; constant need for improvements in the land transport efficiency, increasing incidences of traffic congestion in areas around major ports with the lack of free space for manipulation with the growing volume of container traffic.

Importers in recent months have to factor in additional costs into their budgets and put up with the unclear procedure in nominating cargoes for clearance at the ICD Nairobi and the frequent breakdowns of the Simba system of cargo clearance run by the Kenya Revenue

Authority. Various players operating at ICD port are trading accusations over the congestion that has delayed cargo clearance, exerting pressure on commodity prices (stakeholders meeting, 2012). The delay has resulted in "artificial" shortages, causing prices of various products in the market to sky rocket. Some shipping lines issued notices to stop accepting any new bookings destined for ICDE until the crisis at the port eases (Adebayo, 2012). The demurrage charges were having a significant net impact on the country economy during the unclear nomination of container cargoes to Inland port in Nairobi by KPA, making clearance of cargo to take more than 10 days. Ugandan traders decided to revive the Uganda National Trade and Facilitation Forum and form a shippers' council to lobby for the reduction of prohibitive transportation costs emanating from the Northern Corridor. This came about as a ripple effect; delays at Mombasa Port in nominating cargo to ICD for clearance increased their costs and these were passed on to the final customer, resulting in lower sales and profits (KTA, 2011). The Delays on clearing the cargo at the port were giving the port a bad name and it is something that can be fixed. This means that every second of delay quickly translates to a loss big enough to be felt across the Great Lakes region. Experts had pointed out that ICD port can only be efficient once there is a good network of roads and clear procedure in nominating cargo haulage by SGR railway transport (Onyango et al, 2010).

1.2. Statement of the Problem

Container cargo clearance is evident at the Inland Container Depot Nairobi port as indicated by previous studies by long clearance period or overstay of received container cargo at the ICD port for more than 10 -12 days. Ugandan traders decided to revive their Uganda National Trade and Facilitation Forum and form a shippers' council to lobby for the reduction of prohibitive transportation costs emanating from the Northern Corridor which came about as a ripple effect of delays in clearing the containers. The World Bank, in its annual business

reports 2012, that ranks economies based on the ease of doing business, rated Kenya low at 133 among 183 economies in the world due to congestion of containers at the port waiting clearance. (Jean, 2012).

Container cargo clearance throughput flowing the supply chain logistical corridors and handled by the ICD port has increased overtime, as is evidenced by the revamping of ICD with smart gates that go a long in improving truck turn-around time and enhance security at the Nairobi Inland Container Depot (ICD), launching of state-of-the-art inland cargo handling facility that was upgraded by the China Roads and Bridge Corporation (CRBC) to decongest the port of Mombasa while lowering the cost of transporting goods to ICD, doubled ship capacity in Mombasa over the past decades from 1st generation containers to 4th generation and massive investment in capacity and the introduction of standard gauge railway system to the ICD port (Xinhau, 2017).

The delay in clearing cargo at the port is made worse by lack of clear communication in terms of nomination of container to ICD for clearance. The delays on clearing the containers are costing importers extra cost in terms of penalties in order to re-lodge entries to ICD as place of discharge, demurrage charges with containers taking up to more days to move from the port to ICD hence eating into the free period of having the container with you. Kenya's landlocked neighbors' have to factor additional costs into their budgets to put up with a heavily congested Mombasa Port, unclear communication on nomination of containers to ICD and the frequent breakdowns of the Simba system run by (KRA) responsible for containers clearance (Wanjohi, 2012). The result of this being colossal loss of revenue by government through its agencies the Kenya Revenue Authority - Customs Service, other private sector operators in the chain, especially importers, manufacturers, and transporters also incurred heavy losses, due to delays in container clearance which they eventually passed on to consumers.

In face of infrastructure improvements and acquisition of new equipment and the need to promote regional trade, the ICD is still experiencing container cargo clearance delays which in turn is costing importer to dig deep on paying extra charges, causing prices of various products in the market to rise. Other private sector operators in the supply chain, especially manufacturers and transporters also incur heavy losses, due to delays in container cargo clearance which they eventually passed on to consumers. These issues therefore prompted the study to find out the factors influencing container cargo delays on clearance at the ICD Embakasi.

1.3. Research Objectives

1.3.1. General Objective

The general objective of the study is to establish factors influencing container cargo clearance at the Inland Container depot Embakasi.

1.3.2. Specific Objectives

The following specific objectives guide this study;

i. To establish the effects of customs documentation process on container cargo clearance at ICD Embakasi
ii. To determine the effects of cargo handling equipment on container cargo clearance at ICD Embakasi.
iii. To find out the effects of transport infrastructure on container cargo clearance at the ICD Embakasi.

1.4. Research Questions

The following are the research question;

i. How does customs documentation processing influence container cargo clearance at ICD Embakasi?

ii. How does cargo handling equipment influence cargo clearance at ICD Embakasi?

iii. How does transport infrastructure cause delays in container cargo clearance at the ICD Embakasi?

1.5. Significance of Study

The findings of the study will give an insight into the current problem to improve on container cargo clearance at the ICDE port terminals. Container cargo clearance stakeholders at the port terminals are expected to assist port authority to come up with policy in their respective entities to overcome the problem. The policy will help to improve on the efficiency and effectiveness of the deliveries made thus reduce time to transport cargo from one point to another. Kenya Revenue Authority also will benefit from this study in that they will be able to adopt and implement proper ways of reducing container cargo clearance and increase efficiency in cargo clearance so that they can attract more stakeholders hence generating revenues and finally the stakeholders can benefit by not having to incur extra storage costs on their containers that take long before they are cleared.

1.6. Scope of the Study

The study focused on factors influencing container cargo clearance at the ICD Embakasi which is the study area. The study was undertaken in Nairobi Inland Container Depot Embakasi where cargo clearance is done. The study covered mainly the customs officers, clearing and forwarding agents and the KPA staff at the ICDE.

1.7. Limitation of the study

The limitations that hindered the study in conducting the study efficiently was: Financial constraints which limit the amount of data and the area to be covered in the study. also

confidentiality regarding data to be collected where some of the information was likely to be regarded as confidential by the officers concerned and, therefore, deny the access to it.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

A literature review is a summary of what existing scholarship knows about a particular topic. It is always based on secondary sources – that is, what other people have already written on the subject; it is not concerned about discovering new knowledge or information. As such, it is a prelude to further research, a digest of scholarly opinion. (Booth & D, 2016). This chapter gives a review of the existing literature on the factors influencing cargo clearance at the ICD port terminal. The review is meant to exemplify the key concepts of the topic of discussion. It provides the basis of critical review and a clear understanding of the problem. The main sections included therein are; the conceptual framework, summary and research gaps.

2.2. Theoretical Review

Theoretical review is the application of a theory, or a set of concepts drawn from one and the same theory, to offer an explanation of an event, or shed some light on a particular phenomenon or research problem. This could refer to, for instance, the Set theory, evolution, quantum mechanics, particulate theory of matter, or similar pre-existing generalization – such as Newton's laws of motion, gas laws, that could be applied to a given research problem, deductively. Containerization and inter-modality have undergone rapid growth in recent decades. This growth owes to hinterland expansion and transshipment operations at intermediate ports and the crossing points of trade lanes. Container traffic growth has led to high demand for container terminals, resulting in port congestions, a need for investment in new terminals and greater competition between terminals within and between ports. Container terminals are competing to become transshipment hubs as part of major shipping lines and

feeder networks, while greater inland transport accessibility has allowed ports to spread further inland.

2.2.1. The Queuing Theory

Adedayo et al. (2009) stressed that many situation in life requires one to line up or queue before being attended to. This lines formed are referred to as waiting lines or queues. According to them queue occurs when the capacity of service provided fall short of the demand for the service. Sanish (2011) in his article on application of queuing to the traffic at New Mangalore Port refers to queuing theory as an analytical techniques accepted as valuable tool for solving congestion problems. According to him the primary inputs to the models are the arrival and service patterns. These patterns are generally described by suitable random distribution. He observed that the arrival rate of ships follows exponential distribution while the service time follows Poisson distribution. He observed that queuing theory can be used to predict some important parameters like average waiting time of ships, average queuing length, average number of ships in the port and average time to transport cargo haulage & utilization factor closer to the actual values.

Queues are not an unfamiliar phenomenon and to define it requires specification of the characteristics which describes the system such as the arrival pattern, the service pattern, the queue discipline and the queue capacity Adedayo et al. (2013) observed that there are many queuing models that can be formulated. According to them it is essential that the appropriate queuing model is used to analyze problems under study. The arrival pattern: This may be the arrival of an entity at a service point. This process involves a degree of uncertainty concerning the exact arrival times and the number of entities arriving. And to describe this process there are some important attributes such as the sources of the arrivals, the size of each arrivals, the grouping of such an arrival and the inter-arrival times. The service pattern: This may be any

kind of service operation which processes the arriving entities. The major features which must be specified are the number of servers and the duration of the service. The queue discipline: This defines the rules of how the arrivals behave before service occurs.

A contributor to container terminal congestion is the time containers dwell in the storage yard after being delivered to the terminal or unloaded from the ship. Prolonged container dwell time results in high storage yard area occupancy and may create substantial adverse effects on terminal productivity and throughput capacity. With improved management of container flows, additional terminal capacity may be created without investing in costly new equipment and yard capacity improvements, Holgan et al (2010). Cargos arriving at the port terminals are temporary stored in the terminals yard before being loaded to their next mode of transport. The time period cargo stay in the yard is influenced by some factors depending on long term contractual agreements (Merck, 2009).

2.2.2. Modern Theory

According to modern theory (Rowland, 2014) which focuses on the single electronic window system, under the single window system, systems interact with other systems or the outside environment in order to curb the problems and difficulties in container clearance. some of the features of the single electronic window system include: receiving data from other sources, input data converted into output data and the owner of the cargoes does not need to use the clearing and forwarding agents to clear the goods but ought to clear all the payments online then the cargoes are delivered to the owner. The single electronic window system has help in ensuring fast and reliable information to the owner of the cargoes, government being in the position to get the taxes and revenues through the system thus increasing efficiency and effectiveness of all the activities carried out during the clearance of containers. As a growing and leading port in east and central Africa Kenya port authority must continue embracing the

use of modern technology systems in streamlining their efficiency and supply chain in order to add value and be ahead of its competitors. The researcher analyzed the variables and seeing how they are interacted in order to improve and eradicate the cargoes delays in the port in Embakasi.

2.2.3. Markov Theory

According to Notteboom (2009), Markov theory overcomes the independency problem in system modeling due to its ability to represent the dependencies among the different parts. It is used in systems that evolve discretely or continuously in proportion to space and time. Usually they estimate availability or reliability in discrete space and continuous time. Therefore the system has a finite number of states but the transitions among them may occur at any instant of time. Markov theory illustrates the possible situations that a system goes through and the transitions among them.

The situations are mutually exclusive, while the transitions describe a situation change between a normal state and a repair. The existence of the memory less property of a Markov system is necessary in order to use Markov modeling. This means that future states are independent of past states.

Among many applications, Garcia et al (2011) used Markov models to quantify failure modes whereas Fleming (2011) used the model for reliability purposes.

2.3. Conceptual Framework

Conceptual framework is defined as an end result of bringing together a number of related concepts to explain or predict a given event, or give a broader understanding of the phenomenon of interest – or simply, of a research problem. Conceptual Framework is a filtering tool for selecting appropriate research questions and related data collection methods. (Jabareen & Y, 2009).

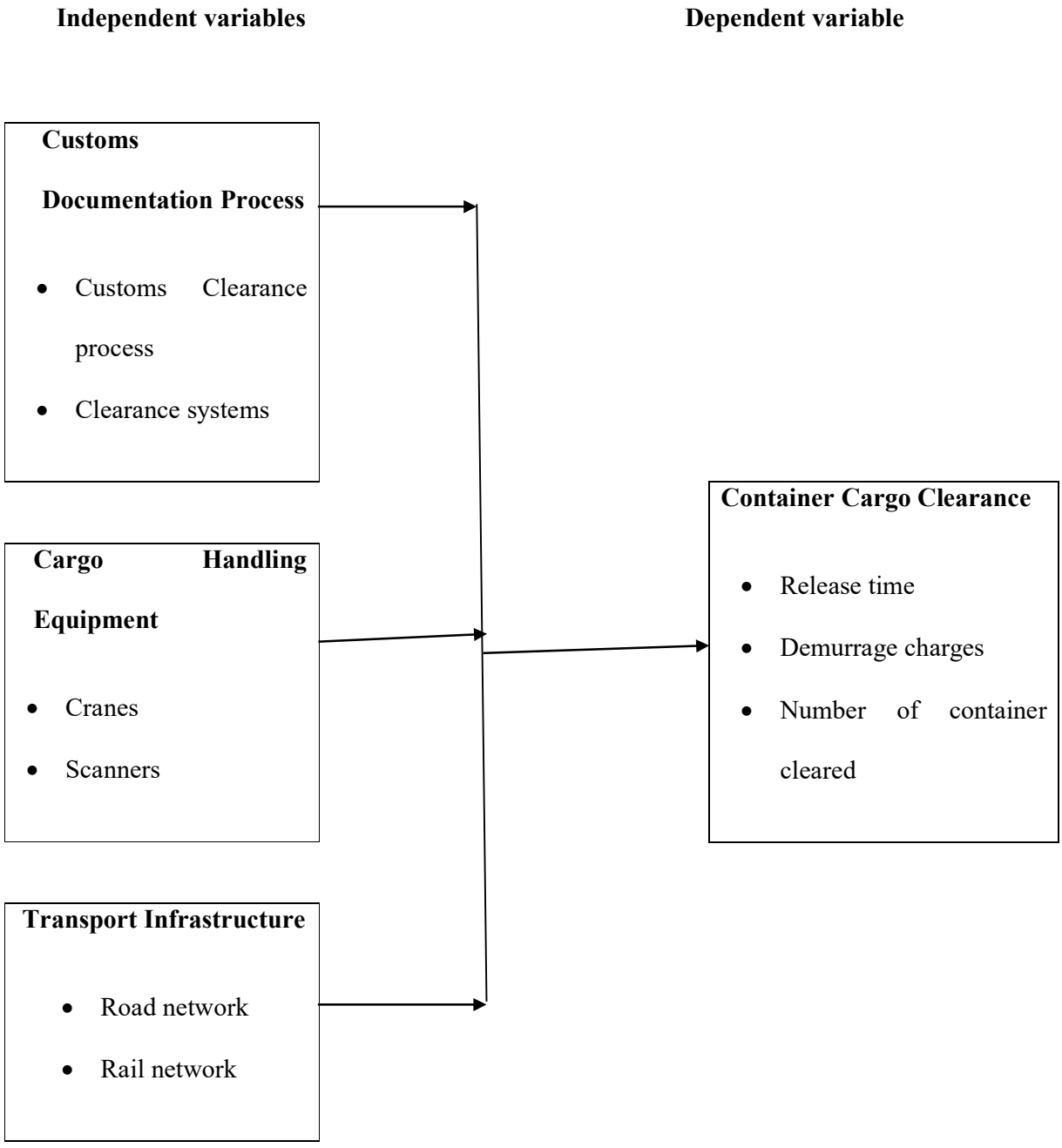

Figure 2.1: Conceptual Framework

The above diagram gives an illustration of how the variables cause delays on container cargo clearance. Customs Documentation process, handling equipment and transport infrastructure are the resultant causes of delays on containerized cargo clearance at the ICD Embakasi.

2.4. Empirical Review

Empirical research is research using empirical evidence. It is a way of gaining knowledge by means of direct and indirect observation or experience. Empiricism values such research more than other kinds also can be measured qualitatively or quantitatively. Quantifying the evidence or making sense of it in qualitative form, a researcher can answer empirical questions, which should be clearly defined and answerable with the evidence collected. Research design varies by field and by the question being investigated. Many researchers combine qualitative and quantitative forms of analysis to better answer questions which cannot be studied in laboratory settings, particularly in the social sciences and in education. (Goodwin, 2005)

2.4.1. Customs Documentation Process

Customs documentation process involves the various forms used at the Kenyan port as well as the Kenya revenue authority forms for clearing imports and exports of goods. These documents are in various forms and pass through various sections at the port and are used for the operation of undertaking clearance of cargo. Examples are invoices, import declaration forms, Bill of lading, customs declaration forms, consignment notes, packing list and certificate of origin. (Branch, 2013)

According to (Lambert et al, 2012) one of the most important facets of international trade is the paperwork that must be completed before, during, and after the shipment of a product to a foreign country, while documentation is not a glamorous of International trade, it is a necessary part. International documentation is much more complex and consumes a lot of time than domestic documentation because each country or world region has its own specifications and requirements resulting to delays on loads to be cleared on time. Absolute accuracy is required; errors may result in delayed shipments or monetary penalties.

Despite some progress since 2012,the clearing process at the Inland Container Depot Embakasi (ICDE) and customs procedures remain the main sources of delay and high transport haulage cost in East Africa region, whether it is for local cargo or for transit cargo (for which the procedures are more complex and the delays worse).Stakeholders observe that many of the operational bottlenecks that translate to delays at the port are the result of actions by customs(KRA),but others are due to actions (or lack of actions)by other stakeholders such as shipping lines, shipping agents and other government agencies (Agutu et al,2012).

According to KENTRADE Info Trade Portal, a search on Importation of spare parts on the portal search engine will gives you a summary of steps to be involved for a first importer, 17 steps are involved in order to have the imported spare part declared for home consumption, a total of twenty four documents will be required in order to finish the process of declaration for home consumption.

Upon approval of manifest by customs, the Clearing agent is able to lodge an entry for a consignment within the ship. The entry is released by customs online after payment of the various duties. If exempted from duty, original exemption letter must be verified physically by customs at port before getting final release. Upon clearing with customs, the agent proceeds to settle port charges and release consignment with other regulatory authorities. Once completed, the port gives a "Pick up Order"/PUO which is effectively the gate pass to allow cargo exit from port. The whole clearing process takes on average 3 working days hence possible to have all clearance in place by time of ship arrival to facilitate direct delivery upon discharge.

According to P.J Shah a veteran with over three decades experience in cargo clearance at the port of Mombasa, in his presentation 'Documentation and Role of Cargo Interveners In Port Operations' There are various types of goods that pass through the Port of Mombasa i.e. local imports, local exports, transit imports, transit exports and transshipment. Each type of cargo is

covered by different types of shipping documents and undergoes different clearance processes.

Clearing goods through the various interveners involved in the process i.e. Kenya Ports Authority (KPA), Kenya Revenue Authority (KRA), Kenya Bureau of Standards (KEBS), Kenya Plant Health Inspectorate Services (KEPHIS), Port Health Authority (PHA), Dairy Board of Kenya (DBK), National Biosafety Authority (NBA), Anti-Counterfeit Agency (ACA) and Port Police and forwarding them to their final destination is not only a very complex but also lengthy and cumbersome exercise (Shah, 2012).

For scanning the container is loaded on a truck and passed through the scanning machines either in the port or at the ICDE. If the scanning image shows any irregularities, customs will usually proceed to do verification. For customs verification containers have to be placed down, opened and stripped, if verification is to be performed at ICDE yard. A verification report, which must tally with the customs declaration, is inserted on the Tradex - Simba system by the Customs Officer. If the results of the designated verification procedure indicate any abnormalities then the customs will usually proceed for 100% verification. Any discrepancies on value-quality-quantity or the finding of any undeclared items will lead to customs raising an offence for which the outcomes are varied and guided by the East Africa Community customs management act. (Aeromarine.co.ke/customs clearance 2016).

If cargo was not verified / scanned or if the result of this was a clean bill, customs can issue a customs release order once it is confirmed that the delivery order obtained earlier is reflecting online (indicating the clearing agent for which the cargo was checked by customs is indeed to be released to this clearing agent).

In conclusion the above processes have a bearing on the overall logistics service delivery from financial perspective that being the throughput levels, as well as the efficiency of logistics service delivery, exact causes for the delays and bureaucracies causing delays need

to be looked into and ironed out. There is no port in the world that is going to realize improved performance in terms of efficiency or even through put without properly realigned and streamlined customs processes, and doing away with bureaucracies of documentation processing.

2.4.2. Cargo Handling Equipment

Handling systems means the mechanism used in moving materials from one point to another with less human effort (Lyons, 2009). Material handling equipment and systems often represents major capital outlays for organization. Like the decisions related to the number, size, and materials handling decisions can affect many aspects of logistics operations (Lambert et al, 2001). (Stakeholders report, 2012) states that it is unfortunate that quite a number of significant interventions that would have eased the delays at the port have been known for over 30 years. All the major stakeholders agree with the assertion that "ICD port facilities are inadequate and in poor condition" and that without substantial investment in equipment, the port is unlikely to handle more traffic.

According to (Bailey et al, 2004), one of the most basic requirements of any organization is to be able to transport or move materials, equipment's and spare parts from one point to another. Material handling is of vital importance and is indicated by the range and high cost of the equipment that each organization have. Handling materials, which is a major activity in storehouse and stockyard is a costly operation and therefore the methods and equipment should be efficient. Poor handling equipment's leads to Shorty work making an organization not to handle the required load on time, causing delays, congestions and inefficiencies along the supply chains.

According to (KPA Audit report, 2012-2013) indicated that various freight stations had failed to move 6,000 containers that had been cleared, increasing the pile-up at the port yard to

18,000 Twenty Foot Equivalent Unit (Tues.) against its capacity of 14,500. If the container freight stations (CFSs) move the cargo that is ready, operations will return to normal, but the stations said that KPA had failed to put its equipment to optimal use even as some of them hold up to 2,300 Tues., two times their capacity. The delays at the port is costing importers huge storage charges with containers taking up to 14 days to move from the port to CFSs or even to ICD due to tedious container location exercise and prolonged physical verification where hinterland customer can be reached easily without having to travel down to Mombasa for clearance exercise. Importers and clearing agents blame the delay on inefficiency in the freight handling and the tedious container location exercise by KPA, saying they should be allowed to collect part of the cargo cleared from the port whatever port of their choosing.

According to (Gerald, 2010) the Mombasa Port's facilities are overstretched and under intense pressure leading to complaints from the local clearing and forwarding firms and customers, about Container on container clearance. (Kimani, 2010) reported that KPA unveils new plan to cut red tape at Mombasa port where the commissioner general of KRA blamed the delay to a number of signatures required on the documents which he said were too many and were to be reduced plus port handling equipment breakdown.

According to (Stock et al, 2009) for an organization to operate efficiently, "its supply chain activities should flow smoothly to create value to the customers hence it should minimize delays by avoiding poor /outdated equipment's" The operational Audit report of 2011/2012 points out that the current regulatory framework governing operations of the CFSs is not sufficient to ensure quality and standards of services. The pressure to move Containers out of the port area quickly has occasionally led KPA to nominate CFSs without due consideration of their container handling capacities.

Most of them are congested not only due to lack of sufficient and reliable equipment but also because their operators do not exhibit proper planning in receiving staking and realizing. According to (Maundu,2012), reported that though the corporation has good equipment that can support its quayside operations, these machinery are largely unproductive, raising questions about the capacity of the staff. Importers and clearing agents blame the delay on inefficiency in the freight handling, saying they should be allowed to collect part of the container cleared from the port's yard. Agents said it took them five days to clear and move containers from the port while it takes more than five days for any CFS to transfer containers in a vessel. According to (Kenya Shippers report 2011/2012), Mombasa Port's facilities are overstretched and under intense pressure.

2.4.3. Transport Infrastructure

According to (Rushton et al 2012), defines Transport as "the activity that facilitates physical movement of goods as well as individuals from one place to another. It supports trade and industry in carrying raw materials to the place of production and distributing finished products for consumption". Transport creates value or place utility. It's a factor in the creation of time utility because it determines how fast and how consistently products move from one point to another. He states that value chains begins when vessels, materials or products enters an organization hence there should be continuity in transport services for efficient flow of products along the supply chain. The trucks are responsible for the container transfer operations within and from the port; they are required for the purposes of shunting containers from the port in order to ensure timely evacuation.

Stakeholder's workshop, (2012) reported that Conditions of the Road at Miritini in which is mostly used in transporting cargo on transit and to ICD. Since April 2011, the road has deteriorated so much that the truck turnaround times for a journey of less than 10 km can take

as long as 6 hours which means that truck efficiency and movement of nominated CFS & ICD Nairobi is severely compromised, trucks that could do five trips at the beginning of 2011 are barely able to move one container a day to day due to poor roads, this in turn leads to more delays in clearing the goods as they are not able to reach the ICD on time to be cleared.

From the Meeting on the Northern corridor trade and transport logistics chain stakeholders consultative forum (2011) the Port and KRA reserve the right to nominate various CFS&ICD for container clearance, importers have faced delays exceeding 10 days waiting for cargo to move from the Port to ICD. The Kenya National Highways Authority reports that it expects World Bank Support to fix the road. However, the country cannot wait that long. Local resources should be utilized to dedicate passage for trucks between the Port and inland haulage to increase off take of container." Kenya is faced with the dilemma of high road construction costs and increasing road maintenance due to overloaded trucks plying its trunk route network, particularly along the Northern corridor, World Bank (2007). KPA's management report 2011/2012, said that they have been building there capacity to handle increased volumes of cargo but they are let down by poor infrastructure. Ugandan traders decided to revive the Uganda National Trade and Facilitation Forum Fig and form a shippers' council to lobby for the reduction of prohibitive transportation costs emanating from the Northern Corridor. This came about as a ripple effect; delays at Mombasa Port increase their costs and these are passed on to the final customer, resulting in lower sales and profits.

According to Bowersox et al (2010) "Activities related to providing customer service requires performing order receipt and processing, deploying inventories, storage and handling and outbound transportation with a channel of distribution. poor transportation causes delays in delivery as the vehicles consumes more time than the required just to deliver items, goods

from one place to the required locations. Transport services should be efficient to cope up with organizations activities and services. The primary physical distribution objective is to assist in revenue generation by providing strategically desired customer service levels at the lowest total cost".

Onyango, (2012) on business and finance said off take of container from the Port is delayed by various factors all within the control of agencies operating within the Port and around it. Off take by road is severely constrained by inadequate number of personnel. While the Port has various gates, it has not utilized all of them because of failures of other organizations responsible for container clearance to post sufficient staff to man all the gates or to equip them adequately once posted there. As an urgent measure, all gates should be utilized and personnel posted there, facilitated with adequate equipment. Off take by railway is constrained by inadequate Rift valley railways capacity to lift cargo from the port to hinterland destinations.

According to KPAs Annual report(2010) The port of Mombasa is the gateway for surface transport along the Northern corridor region, with an estimated 900 transport vehicles(trucks) exiting each day, on average. Road transport is accompanied by several operational difficulties including weighbridges, police escorts, and road blocks which constitute non-tariff barriers and contribute to delays. Rail transport helps in the movement of bulk cargo dry or wet from an industrial plant in a complete train load to a seaport. This may be crude oil, phosphate, coal, timber or iron. Observers point to increased cargo volumes last year following a surge in transit business.

2.5. Critique of the Literature Review

The aim of the above literature review was to analyze the studies that was carried out on container clearance with a special focus on, efficiency, effectiveness, reliability and quality delivery services provided

While much has been done on the factors influencing Container cargo clearance in port terminals, the available literature concentrated much on handling systems, customs documentation process and transport infrastructure. The absence of manpower with skills to handle the clearing process and the politics in container nomination has left the operation of the port terminals in crisis and difficult situation.

Therefore, the study attempting to establish these relationships is more necessary for developing applications of such relationships and efficient with a close link to ICDE. Container clearance leads to inefficiency and long dwell time for the clearance of containers. (Brinkerhoff, 2009) identifies three key competitive advantages resulting in high revenues. Advanced technology system put in place, proper transport infrastructure to facilitate fast movement of cargoes from one place to another and well advanced handling equipment that will take the shortest time possible to perform clearing of containers.

(Basheka, 2009) argues that investing in use of advanced technology and information using single electronic window system is the best way to use in clearing the containers in the port leading a big contributes to the success of the economy of the country and increased improved service delivery.

2.6. Summary of the Literature Review

This section emphasized on the factors influencing container cargo clearance in the ICDE. The factors influencing container cargo clearance is customs documentation process, handling equipment and transport infrastructure. It's evident where the ICD Port's facilities were

overstretched and under intense pressure. There are complaints from the clearing and forwarding agents and customers, about delays in containers cargo clearance.

The Mombasa port has various freight stations which a time fail to move 6,000 containers that had been cleared, increasing the pile-up at the port yard to 18,000 Twenty Foot Equivalent Unit (Tues.) against its capacity hence causing delaying for containers needed to be loaded for haulage freight to ICDE. Also the daily nations newspaper of June (2010), titled "KRA unveils new plan to cut red tape at Mombasa port" where the commissioner general of KRA blamed the delay to a number of signatures on documents which he said were too many and should be reduced drastically.

Cargo clearance at the port are costing importers huge storage/demurrage charges with containers taking up to 14 days to move from the port to ICD where clearance of the containers can be facilitated. This situation makes the port to be competitively unfair as countries are going to the port of Tanzania to have their goods cleared from there; hence this situation calls for combined efforts from the government, stakeholders and the clearing agents to improve on it. Transport infrastructure is an important driver to any organization that serves as the element that creates results to a coordinated effective and efficient supply chain. Therefore, it must be current, accurate, validated, and efficient in order to enable movement of the cargoes fast and easily taking little time thus reducing congestion of the containers at the port terminals.

2.7. Research Gaps

While much will be learn about the factors influencing container cargo clearance, there are several important areas that need further research. This study believes that effective communication amongst stakeholders is very important when it comes to making nomination of containers to ICD hence makes the use of SGR effective or introduction of regulations such

as bay plans and interpreting transaction values which should be made with consultations to reduce delays so that port users are prepared with any new changes implemented.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Introduction

Research Methodological refer to the research design and the process of addressing a given research problem – including the approach to literature review, the nature of the data to be collected, analyzed and interpreted. Inevitably, these issues also touch on the broader discussion of research paradigms, given that the types of research problems pursued, methods of investigation employed, the types of data collected, analyzed and interpreted – as well as the underlying epistemological assumptions under the two dominant research paradigms (that is, qualitative and quantitative) are typically not the same (Kothari & Gaurav, 2014). The chapter will present under the following sections namely, research design, study population, sample size, sampling procedures, data collection instruments and data analysis.

3.2. Research Design

According to (Creswell, 2014), research designs are types of inquiry within qualitative, quantitative and mixed methods approaches that provide specific direction for procedures in a research design. According to (Cooper and Schindler, 2003), a descriptive study is concerned with finding out the what, where and how of a phenomenon. The type of research design the study adopted is a descriptive research design. Descriptive research design is chosen because it enables the study to generalize the findings to a larger population. Other scholar such as (Denzin & Lincoln, 2011), refer to them as strategies of inquiry. A descriptive study is concerned with finding out the what, where and how of a phenomenon. The study gathered quantitative and qualitative data that describes the various situations as they are.

The research study find out what factors influence container cargo clearance at the ICDE for effective performances. It aimed to give intense and detail description of existing phenomenon with intent of employing data to justify and make plans that are more effective.

3.3. Target Population

According to Mugenda, (2009) the population refers to an entire group of individuals, events or objects having a common observable characteristic. Mugenda, (2009) generalize the findings of a study. The population is chosen to delimit the study and gather sufficient data within the limit and cost. The targeted population in this study is 200, which includes KRA Customs Officers, clearing and forwarding agents, KPA container terminal staff at the ICDE.

Table 3.1: Target Population

Respondents	**Targeted Population**
KRA Customs Officials	60
Clearing & forwarding Agents	70
KPA Container Terminal Staff	70
Total	**200**

3.4. Sampling Design and Procedure

According to Mugenda (2011), for any meaningful and representative research, a sample of at least aove 10% is representative enough. Sampling methods involve taking at random a predetermine quantity from a batch of the same kind, a quantity consider adequate and representative of the whole batch. The target population is divided in various groups including the KRA customs officers, the clearing and forwarding agents and Container Terminal KPA

staff. In this study stratified random sampling methods will be used so as to obtain 4 strata of the selected departments.

3.5. Sample size and Sampling Technique

The sampling technique to be used is stratified random sampling. In the technique, the study identifies the target population then defines the criteria for stratification. The population is divided into different groups (strata), the respondents chosen randomly within the different strata to give all such subsets of the frame an equal probability. Lastly, the study will randomly select respondents from each stratum according to the sample size.

Table 3.2: Sample size and sampling technique

Respondents	Target Population	% of Sample Size	Sample Size
Customs Officials	60	30	18
Clearing & forwarding agent	70	30	21
KPA ICD terminal staff	70	30	21
Total	**200**	30	60

3.6. Pilot Testing

The questionnaire is tested to assess the relevance of the questions, the understanding of respondents, identification of any ambiguities, as well as the general availability of the various categories of information needed. The questionnaires is pre-tested immediately before embarking on serious data collection exercise where it is self-administered to a few employees at the ICDE to make sure that the responses given are in line with the expectations. Validity is the accuracy and meaningfulness of inferences, based on the study results.

Reliability is a measure of the degree to which a research instrument yields consistent results or data after repeated trials (Mugenda & Mugenda, 2010).

3.7. Data Processing, Analysis and Presentation

Data is presented quantitatively and analyzed using SPSS tool (Statistical Package for the Social Sciences) and narratives. SPSS Statistics Standard includes techniques such as logistic and non-linear regression and presentation quality custom tables to help business managers and analysts, it also provided a range of statistical procedures suitable for many problems, including crosstabs, linear regression, Monte Carlo simulation, geospatial analytics, and the ability to extend built-in capabilities with Python, R, or Java code. Quantitative data will be analyzed using the Statistical tool using descriptive statistics and inferential statistics. The descriptive statistics will include mean, standard deviation and variance that helps the study make analyze and make conclusions for recommendation while inferential statistics will include correlation and multiple linear regression. Qualitative data will be analyzed using narratives and conclusions made on the trend of events.

3.7.1 Multiple Regression Analysis

Multiple regression analysis is used to establish the relationship between the dependent and the independent variables; Factors Influencing Container Cargo Clearance at ICDE is regressed against three independent variables namely; Customs Documentation Process, Handling Equipment and Transport Infrastructure. The equation for factors influencing Container Cargo Clearance at ICDE will be expressed in the following equation:

$\mathbf{Y = \beta 0 + \beta 1 X1 + \beta 2 X2 + \beta 3 X3 + \varepsilon}$, where,

Y = Container Cargo Clearance at the ICDE

β0 = constant (coefficient of intercept),

X1= Customs Documentation process

X2= Handling Equipment

X3= Transport infrastructure

ε = error term

β1……β3 = regression coefficient of three variables.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSIONS

4.1. Introduction

This chapter gives response rate of respondents at Inland Container Depot, Embakasi demographic characteristics, factors influencing container cargo clearance at ICDN and regression analysis.

4.2. Response Rate

From the 40 questionnaires administered, 36 of them representing 90 % were returned. The data collected was analyzed for mean, standard deviation and coefficient of variation. This indicates a good response for analysis.

4.3 Demographic Characteristics

Table 4.1: Demographics Characteristics of Respondents

Departments	Frequency	Percentage
Terminal Engineers	02	5.5
Clearing and Forwarding	18	50.0
Verification Officer	05	14.0
Head of Verification Officer	02	5.5
Port Clerks	9	25.0
Total	**36**	**100**

The study reveals that majority of respondents studied were from clearing and forwarding at 50% followed by Port clerks at 25%, Verification Officer at 14 % and Terminal

Engineers and Head of Verification officer each having 5.5%. This means that relevant agencies concerned with container clearance were given considerable chance in the study thereby increasing the relevance of the data collected.

Table 4.2: Respondent position

Characteristics	Frequency	Percentage
Top Management	2	5.6
Middle Management	18	50
Supervisory Management	16	44.4
Total	**36**	**100**

A lot of middle management employees participated in the study i.e. 50%, supervisory management comprising 44.4% and top management 5.6%. This is due to the fact both middle and supervisory management have a lot of influence and information in relation to container cargo clearance at the Inland Container Depot Embakasi.

Table 4.3: Respondent's Educational level

Characteristics	Frequency	Percentage
PHD	0	0
Masters	10	28
Degree	17	47
Other	9	25
Total	**36**	**100**

Demographic characteristics of respondents indicates high level of education for management level staff with degree accounting for the highest at 47%, masters at 28% and others at 25 %. This is an indication of high knowledge within the ICDN.

Table 4.4: Respondents' work experience

Characteristics	Frequency	Percentage
0-5 years	11	30.6
6-10 years	16	44.4
11–15 years	05	13.9
Over 15 years	04	11.1
Total	**36**	**100**

Work experiences indicate that majority 44.4% have worked for 6-10 years, followed by 0-5 years at 30.6% and 11-15 years and over 15 years accounting for 13.9% and 11.1% respectively. This indicates that majority of management employees are well conversant with clearance at the port.

4.4. Descriptive Statistics

In the research analysis the study used a tool rating scale of 5 to 1; where 5 was the highest and 1 the lowest. Opinions given by the respondents were rated as follows, 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree and 1= Strongly Disagree. The analysis for mean, standard deviation and coefficient of variation were based on this rating scale.

4.4.1. Customs Documentation Process

Table 4.5: Level of agreement to customs documentation process factor that influence container cargo clearance at Inland Container Depot

	Customs Documentation Process			
	Statements	Mean	Standard Deviation	Coefficient of Variation
B1	Customs clearance and verification process is critical in container clearance	4.1722	0.6941	0.1664
B2	Container cargo clearance process is very fast and effective	4.5000	0.6969	0.1549
B3	Clearance systems used in container cargo clearance are efficient and effective	4.3056	0.7077	0.1644

The first objective of the study was to establish the effects of customs documentation process on container cargo clearance at Inland Container Depot Embakasi. Respondents were required to respond to set questions related to customs documentation process and give their opinions. The opinion in agreement that Customs clearance and verification process is critical in container clearance had a mean of 4.1722, standard deviation of 0.6941 and a low dispersion of 16.64% signifying a high level of agreement. The finding also indicates container cargo clearance process is very fast and effective with a mean of 4.5, standard deviation of 0.6969 and a dispersion of 15.49% signifying a high level of agreement. Opinion whether clearance systems used in container cargo clearance are efficient and effective was positive with a mean of 4.3056, standard deviation of 0.7077 and a dispersion of 16.444% signifying a high level of agreement.

The issue of documentation is in agreement with Lambert et al, (2001) who underscores that one of the most important facets of international logistics is paperwork that must be completed before, during and after shipment of a product to a foreign country, while documentation is not glamorous of global logistics, it is a necessary part.

4.4.2. Cargo Handling Equipment

Table 4.6: Cargo Handling equipment factor that influencing container cargo clearance at Inland Container Depot

	Cargo Handling Equipment			
	Statements	Mean	Standard Deviation	Coefficient of Variation
C1	We have enough machines for container clearance	3.8611	1.0731	0.2779
C2	We have enough machines for loading and unloading containers	4.2778	1.0032	0.2345
C3	We have enough scanners for container clearance	3.6389	1.3555	0.3725

The second objective was to determine the effects of cargo handling equipment on container cargo clearance at Inland Container Depot. Respondents were required to questions related to cargo handling equipment and give their opinions related to the issue. The opinion in agreement that we have enough machines for container clearance that enables clearing of container scored a mean of 3.8611, standard deviation of 1.0731 and a dispersion of 27.79% signifying neutrality of opinion.

Respondents agreed on we have enough machines for loading and unloading containers by a mean of 4.2778, standard deviation of 1.0032 and a dispersion of 23.45%. The opinion on we have enough scanners to facilitate cargo clearance appeared neutral to the respondents with a mean of 3.6389. This supports Gerald assertion (2010) that the port facilities are overstretched and under intense pressure leading to complaints from the local clearing and forwarding agents and customers.

4.4.3. Transport Infrastructure

Table 4.7: Transport infrastructure that influence container cargo clearance at Inland Container Depot Inland Container Depot

	Transport Infrastructure			
	Statements	Mean	Standard Deviation	Coefficient of Variation
D1	Do we have good road network to ICD to facilitate container clearance	4.2444	0.7149	0.1812
D2	Has the construction of standard gauge railways improve container delivery & clearance	4.3722	0.5829	0.1333
D3	Transport traffic and delay at the ICDN affect container clearance	4.5278	0.5623	0.1241

The third objective was to find out the effects of transport infrastructure on container cargo clearance at Inland Container Depot Embakasi. Respondents were required to give their opinions in relation to some set questions related to infrastructure and container cargo clearance at the Inland Container Depot Embakasi. Respondents were in agreement that we

have good road network to ICD to facilitate container cargo clearance as indicated by a mean of 4.2444. There was further agreement that the construction of standard gauge railways improve container delivery & clearance positively reducing congestion of trailers at on the roads as indicated by means greater than 4. Transport traffic and delay at ICDN was also noted as a big factor affecting container cargo clearance as indicated by a mean of 4.5278 signifying agreement. This is in agreement with Star newspaper (2012) report which saw freight forwarders and clearing agents urging the government to improve the railway system to help eradicate delays at the port. They add that, better roads to ICDN will end port delays.

4.5. Container Cargo Clearance at Inland Container Depot

Table 4.8: Container cargo clearance at Inland Container Depot

	Containerized Cargo Clearance at the Inland Container Depot			
	Statements	Mean	Standard Deviation	Coefficient of Variation
F1	Container Cargo clearance is normally delayed	4.0833	1.0790	0.2642
F2	We have enough number of containers cleared	3.7500	1.0522	0.2806
F3	We pay high demurrage/detention costs on container	4.6444	0.7412	0.1559

On container cargo clearance at the Inland container depot respondents were required to respond to some items related to the same. Respondent's opinions indicate container cargo clearance is normally delayed at the ICDN. We have less number of containers cleared at the port coupled with high demurrage/detention of container charges.

4.6. Inferential Statistics

4.6.1 Correlation Analysis

The correlation analysis Table 4.9 shows the relationship between the independent variables, Customs documentation process, handling equipment and transport infrastructure the dependent container cargo clearance at the Inland Container Depot. The analysis indicates the coefficient of correlation, r equal to 0.250, 0.167 and 0.484 for customs documentation process, handling equipment and transport infrastructure respectively. This indicates a very strong positive relationship between the independent variables, customs documentation process, handling equipment and transport infrastructure and the dependent variable container cargo clearance at Inland Container Depot Embakasi Nairobi.

Table 4.9: Correlation Analysis

Variable		Container Cargo Clearance	Custom Declaration Process	Handling Equipment	Transport Infrastructure
Container Cargo Clearance	Pearson Correlation	1			
	Sig. (2-tailed)				
Custom Declaration Process	Pearson Correlation	0.250	1		
	Sig. (2-tailed)	0.034			
Cargo Handling Equipment	Pearson Correlation	0.167	0.645	1	
	Sig. (2-tailed)	0.011	0.000		
Transport Infrastructure	Pearson Correlation	0.484	0.368	0.142	1
	Sig. (2-tailed)	0.000	0.001	0.236	

4.6.2 Multiple Linear Regression Analysis

Results in Table 4.10 show that customs documentation process, handling equipment and transport infrastructure are satisfactory variables in explaining container cargo clearance at at

ICDN. This is supported by coefficient of determination also known as the R square of 0.479. This means that customs documentation process, handling equipment and transport infrastructure explain 47.9% of the variations in the container cargo clearance ICDN.

Table 4.10: Model Fitness

Indicator	Coefficient
R	0.692
R Square	0.479

Results in Table 4.11 indicate that the overall model was statistically significant as supported by an F statistic of 9.812 and a p value of 0.000. These imply that the independent variables are good predictors of container cargo clearance at ICDN.

Table 4.11: Analysis of Variance

Indicator	Sum of Squares	df	Mean Square	F	Sig.
Regression	6.712	3	2.237	9.812	0.000
Residual	7.296	32	0.228		

Regression coefficients results in Table 4.12 show that that there is a positive and significant relationship between customs documentation process, handling equipment and transport infrastructure and container cargo clearance at ICDN as supported by beta coefficients of 0.877, 1.109 and 0.961 respectively. These results show that better custom declaration process by a unit would result to increased container cargo clearance at ICDN by 0.877 units. These results also show that improvement in the handling of equipment by a unit would result to increased container cargo clearance at ICDN by 1.109 units. Further, these results show that better transport infrastructure by a unit would result to increased container cargo clearance at ICDN by 0.961 units.

Table 4.12: Regression of Coefficients

Variable	B	Std. Error	t	Sig.
(Constant)	0.102	1.095	0.094	0.926
Customs Documentation Process	0.877	0.277	3.163	0.002
Cargo Handling Equipment	1.109	0.281	3.945	0.000
Transport Infrastructure	0.961	0.249	3.852	0.000

CHAPTER FIVE

SUMMARY CONCLUSION AND RECOMMEDATION

5.1. Introduction

This chapter deals with the summary of the findings and provides conclusions of the findings in relation to the study. It also highlights recommendations and suggestions for further study.

5.2. Summary

From the 40 questionnaires administered, 36 of them representing 90.0 % were returned and analyzed for mean, standard deviation and coefficient of variation. The study reveals that majority of respondents studied were from clearing and forwarding and port clerks. Middle and supervisory management employees were studied since they have a lot of influence and information in relation to container cargo clearance at the Inland Container Depot, Embakasi. The study also indicated that majority of management employees are well conversant with clearance at ICDE.

5.2.1 Customs Documentation Process

Custom clearance and verification process is seen critical in container cargo clearance at the ICDE. These results show that a better customs documentation process by a unit would result to increased container cargo clearance at Inland Container Depot Embakasi by 0.877 units hence will promote faster clearance and facilitate trade within the EAC. The correlation analysis indicates the coefficient of correlation, r equal to 0.768 for Customs Documentation Process indicates a very strong positive relationship between the dependent variables Container Cargo Clearance and customs documentation process.

This implies that the studied independent variables, Customs documentation process have significant effect on container cargo clearance at Inland Container Depot.

5.2.2 Cargo Handling Equipment

The second objective was to determine the effects of handling equipment on container cargo clearance at Inland Container Depot. Respondents were required to questions related to handling equipment and give their opinions related to the issue. The opinion in agreement that we have enough machines for container clearance that enables clearing of container scored a mean of 3.8611, standard deviation of 1.0731 and a dispersion of 27.79% signifying neutrality of opinion.

Respondents agreed on we have enough machines for loading and unloading containers by a mean of 4.2778, standard deviation of 1.0032 and a dispersion of 23.45%. The opinion on we have enough scanners to facilitate cargo clearance appeared neutral to the respondents with a mean of 3.6389. This supports Gerald assertion (2010) that the port facilities are overstretched and under intense pressure leading to complaints from the local clearing and forwarding agents and customers.

This implies that the studied independent variables, cargo handling equipment have significant effect on container cargo clearance at Inland Container Depot.

5.2.3 Transport Infrastructure

The third objective was to find out the effects of transport infrastructure on container cargo clearance at Inland Container Depot Embakasi. Respondents were required to give their opinions in relation to some set questions related to infrastructure and container cargo clearance at the Inland Container Depot Embakasi. Respondents were in agreement that we have good road network to ICD to facilitate container cargo clearance as indicated by a mean of 4.2444. There was further agreement that the construction of standard gauge railways

improve container delivery & clearance positively reducing congestion of trailers at on the roads as indicated by means greater than 4. Transport traffic and delay at ICDN was also noted as a big factor affecting container cargo clearance as indicated by a mean of 4.5278 signifying agreement. This is in agreement with Star newspaper (2012) report which saw freight forwarders and clearing agents urging the government to improve the railway system to help eradicate delays at the port. They add that, better roads to ICDN will end port delays.

5.3. Conclusions

From the research findings, the study concluded all the independent variables studied have significant effect on containerized cargo clearance at KPA as indicated by the strong coefficient of correlation and a p-value which is less than 0.05.The overall effect of the analyzed factors was very high as indicated by the coefficient of determination. The overall P-value of 0.00 which is less than 0.05 (5%) is an indication of relevance of the studied variables, significant at the calculated 95% level of significance. This implies that the studied independent variables namely customs documentation process, cargo handling equipment and transport infrastructure have significant effect on container cargo clearance at the Inland Container Depot, Embakasi.

5.4. Recommendations

The three factors influencing container cargo clearance at the Inland Container Depot, Embakasi are customs documentation process, cargo handling equipment and transport infrastructure. The study therefore recommends more improvements and use of ICT supported systems to support the customs documentation process. The adoption and use of clearance systems at the port such as Kwatos for KPA, the Simba systems for Kenya Revenue Authority is a good start to the right direction. Internal transportation is critical for the success of port

activities since it positively influences firm performance because it enables efficient movement of cargo thus leading to customer satisfaction. It is also critical for competitiveness. Thus Kenya Port Authority has to invest in internal cargo handling equipment and machinery. The study identifies transport infrastructure as essential for decongesting the Inland Container Depot, Embakasi and enhancing efficiency. The government has a major responsibility in collaboration with private partners and investor to see the realization of SGR railway transport is best utilize in a manner that it helps customs stakeholder in decongesting port of Mombasa and promoting business at ICDN.

5.5. Suggestions for Further Research

The study indicates customs documentation process, cargo handling equipment and transport infrastructure have significant effect on container cargo clearance at Inland Container Depot. I further recommend research in related areas in the private sector that can help ease container cargo clearance at the ICDE.

REFERENCE

Africa Line shipping (2008), *KPA to enlist Container Freight Stations (CFS) to minimize Cargo delays*, available from htt://asldubai.blogspot.com/2008/kpa-to enlists - container-freight-html

Almotairi B. (2012) Integrated Logistics Platform. The context of the port relational exchanges and systematic integration. New Age Publishers

Black and Champion (2009) Research methodology: *Methods and issues in social research*, by Black, James, A., Champion, Dean, J. New Delhi, India

Bichou K. and Gray R. (2011). *A logistics and Supply Chain management Approach to Port performance measurement*. New York: McGraw-Hill

Booth, A. S., & D, P. (2016). *Systematic approaches to a successful literature review.* sage.

Bowersox, D. J. & Closs, D. J. (1996). *Logistical Management – The Integrated Supply Chain Process*. The McGraw-Hill Companies.

Business Daily June, (2018). Title: *KPA Launches Smart gates at Nairobi ICD,* available from https://www.businessdailyafrica.com/releases/KPA-launches-smart-gates-at-Nairobi-ICD/1941082-4624224-llgx0wz/index.html

Creswell, J. W. (2014) (4th Ed). Research design: *Qualitative, quantitative, and mixed methods approaches*. Los Angeles: Sage.

Chang, Y.T. and Lee Paul T. W. (2007).*Overview of intra-port competition issues and methods*, Journal of international logistics and trade

Chilsholm, G. (2012) Handbook of Commercial Geography.

Cuadrado, M, Frasquet M. and Cervera A. (2013). *Benchmarking the port services: A Customer oriented proposal, Benchmarking*: An International Journal, Vol. II Issue: 3

De Lengen, 2010, *port Economics, policy and management*: Content Classification and Survey.

De Langen, P W and AChouly (2013), *Hinterland access regimes in seaports European*. Journal of Transport and infrastructure.

Decruet C. and Van der Horst M. (2009), *Transport Integration at European Ports: Measuring the Role and Position of Intermediaries.* Harvard University

De Wulfluc, and Jose B, sokol, EDS, (2013).*customs modernization initiatives, case studies. The international Bank for reconstruction and Development*/the World Bank, Washington Dc.

Gorgeous (2014), Handbook of logistics and Distribution Management: *Logistics and productions goods and services*, by Allan Rushton.

Grant & Lambert, (2006). Fundamentals of Logistics Management.

Goodwin, C. J. (2005). *Research in Psychology*. USA John Wiley & Sons, Inc: Methods and Design.

Hesse M, and Rodrigue JP (2010) *the transport geography of logistics and freight Distribution*.

Jabareen, & Y. (2009). *Building a Conceptual Framework, Philosophy, Definitions and Procedures.* International Journal of Qualitative Methods, V8(4), P, 49-62.

Jacobs, W. and Notteboom, T., (2009). *"A theory on the co-evolution of seaports with Application to Container terminal development in the Rhine- Scheldt Delta".* Proceedings of the 2009 International Association of Maritime Economists (IAME) Conference, June, Copenhagen, Denmark.

Jacobs. W. (2009).*The Role of port Infrastructure and logistics in Global Networks*. Harvard University

Jacobs. W, C. langen, P. W.de (2010).*Integrating world cities into production networks*: the case of port cities. Global Networks Old Dominion University

Kale Consultant (2010), *Improve Efficiency cut costs and drives Revenue Growth Enterprise*, available from http://www.kaleconsultants.com

Kentrade Info trade Kenya portal, 2018. Available from www.infotradekenya.co.ke

Kenya shipper's council policy paper (2012): Supply Chain Security during Election period.

Kenya ports Authority, Handbook 2017

Kenya shippers Council, *Voice of cargo Owners*, and issue No.3, 2011: Kenya Transport Association, Transport 2011: Transporter Issue 014 October-December 2011.

Kothari, C., & Gaurav, G. (2014). *Research Methodology*. New Delhi: Third Edition, New Age International Publishers.

Limao and Venables (2010); *Infrastructure, Geographical disadvantages and trade costs*; The World Bank Economic Review

Lysons K. and Farringtone B., (2006) *Purchasing and Supply Chain Management*, 7th ed. Prentice Hall, England

Maritime, (2009), Effective Management of Container Freight Stations, available from http://www/.imaritime.com

Mcalla, R. (2009), Canadian container: How they fared? How will they do? Maritime policy and management.

Mugenda, A and Mugenda O. (2011), *Research Methods: Quantitative and Qualitative Approaches,* African Centre for Technology Studios press, Nairobi

Mugenda, A., & Mugenda, O. (2003). *Research methods; quantitative and qualitative approaches.* Africa Center for Technology (ACTS), Nairobi Kenya.

Notteboom.T, and Winkelmens. W. (2009); *structural changes in logistics, how will the port authorities face the challenge*. Beverly Hills Sage

Notteboom T., Rodrigue J. P. (2009) - *Port regionalization: towards a new phase in port development:* Maritime policy and management. Vol.48 No. II pp. 163-182

Notteboom, T. & Winkelmans, W., (2001). *Structural changes in logistics: How will port Authorities face the challenge?* Maritime Policy & Management, 28, 71-89.

Ntamutumba, C. 2010. *Study of the Establishment of a permanent Regional Corridor Development Working Group, PMAESA Region. PMAESA report, Mombasa* OECD/ITF Joint Transport Research Centre, (2008). Port competition and hinterland connections, Discussion paper No. 2008-19

Onyango, Godfrey (2003) Review of Transit Transport Situation along the Northern Corridor, prepared for ECA Regional Preparatory Meeting for the Inter Ministerial Meeting of Landlocked and Transit Developing Countries.

Permanent secretariat of the transit transport co-ordination Authority on the northern corridor (2011) 5th meeting on the northern corridor trade and transport logistics consultative forum, Mombasa.

Renato Oblak, M.Sc, 2015: Inland Container Terminals in the Function of the Northern Adriatic Ports Enhanced Operation.

Samuel Kazungu (2018). Business Daily Title*: Importers lose sh20.7 million to container delays at Nairobi ICD*. Available from https://www.businessdailyafrica.com/corporate/shipping/Importers-lose-Sh20-million-to-container-delays/4003122-4702378-2plhlb/index.html

WCO SAFE FRAMEWORK DOCUMENT, (2018). Title: WCO SAFE FRAMEWORK OF STANDARDS

Xinhua, 2017. *Kenya launches upgraded depot to ease bulk cargo transport.* Available from http://www.xinhuanet.com/english/2017-12/18/c_136835061.htm

APPENDICES

Appendix I: Introduction Letter

LAWRENCE AYUGI

P.O BOX 9942- 00100

NAIROBI, GPO.

KENYA REVENUE AUTHORITY - ICDE

P.O BOX 48240-00100

NAIROBI.

Dear Sir,

RE: REQUEST TO CONDUCT AN ACADEMIC RESERCH AT THE ICDE

I am a student at Jomo Kenyatta University of Agriculture and Technology – administered at Kenya School of Revenue Administration - Nairobi campus pursuing a Post Graduate Diploma in Customs Administration. As part of the requirement of the course, I need to carry out a research study entitled the, **FACTORS INFLUENCING CONTAINER CARGO CLEARANCE AT INLAND CONTAINER DEPOT EMBAKASI.** The research study is a partial requirement for the award of Post Graduate Diploma in Customs Administration. This questionnaire is therefore issued purely for academic purpose and the information provided will be treated confidential.

Yours faithfully,

Appendix II: Questionnaire

This research questionnaire is specifically prepared to assist in data collection relating to factors affecting container cargo clearance at the ICDE. As a respondent in relation to the study you are kindly requested to fill in appropriate responses at the best of your knowledge. This research will be purely for academic reason and assure you that all responses will be treated with confidentiality.

1. Section A: Background Information.

A job title/Designation (optional)……

A2. What Organization do you work for?.....

A3.what is your highest level of education attained?

High school { } Bachelor's Degree { }

Certificate level { } Masters { }

Diploma { } PHD { }

A4. How long have you been working at the Inland Container Depot Embakasi?

0 – 5 years { }

6 – 10 years { }

11 – 15 years { }

16 – 20 years { }

Over 20 years { }

A5. What is your current position in Kenya Revenue Authority/Kenya Port Authority or the clearing firm you're working from?

Top Management { }

Middle Management { }

Supervising Management { }

A6. For how long have you worked in your current position?

0 -5 years { } 16 – 20 years { }

6 – 10 years { } over 20 years { }

11 – 15 years { }

2. Section B: Customs Documentation Process

Kindly you are required to give your opinion on below statements.

How does customs documentation process influence container cargo clearance at the Inland Container Depot in Embakasi?

5= Strongly Agree, 4 = Agree, 3= Neutral, 2= Disagree, 1= Strongly Disagree

	Parameters	5	4	3	2	1
B1	Customs clearance & verification is critical for container clearance					
B2	Containerized cargo clearance process is very fast and effective					
B3	Clearance systems used in container cargo clearance are efficient and effective					

Table 1

3. Section c: Handling Equipment

How does handling equipment influence container cargo clearance at ICD Embakasi?

5= Strongly Agree, 4 = Agree, 3= Neutral, 2= Disagree, 1= Strongly Disagree

	Parameters	5	4	3	2	1
C1	There are enough machines for container clearance					
C2	There are enough machines for loading and unloading containers					
C3	There are enough scanners for container clearance					

Table 2

4**. Section D: Transport Infrastructure**

D1: How does Transport Infrastructure influence Container Clearance at the ICD Embakasi?

5= Strongly Agree, 4 = Agree, 3= Neutral, 2= Disagree, 1= Strongly Disagree

	Parameters	5	4	3	2	1
D1	There is good road network to ICD to facilitate container clearance					
D2	Construction of standard gauge railways improve container delivery & clearance					
D3	Transport traffic and delays at the ICDN affect container clearance					

Table 3

5. Section F: Container Cargo Clearance

5= Strongly Agree, 4 = Agree, 3= Neutral, 2= Disagree, 1= Strongly Disagree

	Parameters	5	4	3	2	1
F1	Container Cargo clearance is normally delayed					
F2	There are enough number of containers cleared					
F3	There is high demurrage/detention costs on container clearance					