IN LAND CONTAINER DEPOTS AND CONTAINER FREIGHT SERVICES DECONGESTION STRATEGIES: A CASE OF TANZANIA PORTS AUTHORITY

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A DISSERTATION SUBMITTED AS A FULFILLMENT OF THE REQUIREMENTS FOR THE MASTER DEGREE IN BUSINESS ADMINISTRATION OF THE OPEN UNIVERSITY OF TANZANIA

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CERTIFICATION

The undersigned certifies that he has read and hereby recommends for acceptance by the Open University a dissertation entitled: "In Land Container Depots and Container Freight Services Decongestion Strategies: The case study of Tanzania Ports Authority" in partial fulfillment of the requirements for the degree of Master in Business Administration at Open University of Tanzania.

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Dr. William A. Pallangyo

(Supervisor)

…….....

Date

COPY RIGHT

DECLARATION

I, Kondo Fadhil Abdallah that this dissertation is my own original work, and that it has not been presented and will not be presented to any other University for a similar or any other degree award.

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Signature

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Date

DEDICATION

I dedicate this work to my wife and my father for their authoritative parenting and for laying the cornerstone of my intellectual abilities

ABSTRACT

The aim of the study was to examine decongestion strategies used in inland container depots (ICDs) and container freight services (CFSs) at Tanzania sea ports. Specifically the study was to identify factors that contribute to the increased congestion of Tanzanian seaports; to assess the effects of congestion at Tanzania seaports; to identify some of the decongestion strategies implemented by Tanzania seaports managements and to investigate factors hindering implementation of the decongestion strategies. The study used survey design and involved questionnaires and interviews as the tools for data collection. The study also used secondary data collection methods such as documentation of various reports.

The study found that lack of enough cargo handling equipments, small size of the port, large number of port users; poor port management and poor policy implementations were factors that contribute to the congestion at Dar es Salaam seaport. While the results of congestion was found to be loss of working time, cargos/parcels and income to the clients, ship traffic, delay of ship turn round time and lastly diversion of cargoes from Dar es Salaam seaport to other ports especially Mombasa seaport. It was also found that in general decongestion strategies have been not fully implemented by Tanzania seaport management. The study recommended that government should assist in building and improvement some infrastructure which will meet current developments and technological changes in the shipping industry

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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the Study

Continuous growth in global trade volumes has contributed to the high demand of transportation infrastructure so as to supporting international trade with the aim of overcoming the spatial gap between points of demand and centers of supply or places of low utilities to places of higher utilities. Water transport has therefore been recommended as one of the means of transport for transportation of bulk products for one country to another besides the increased level of port congestions (Clark, *et al* 2001 and Clark, *et al* 2004).

All over the world, the existing major ports are facing significant challenges in expanding on-dock capacity due to constraints on land availability in the vicinity of existing terminal and harbor facilities and these have created an impact on over traffic congestion and quality of life impacts (Clark, *et al* 2004). Developed nations like United States have had most of their ports congested and this has been mainly attributed to the ever increasing volume of import and export cargo in marine containers (Notteboom and Rodrigue, 2005; Iannone, *et al* 2008).

In Europe, substantial container volume growth has made it more difficult for ports to efficiently serve drayage trucks entering and exiting with containers, especially during peak periods. Queues of drayage trucks frequently form both at port entrance gates and also within the facility at container pickup and drop off points. While on-

facility rail connections help alleviate truck congestion at some ports, demand for trucking service is likely to remain at high levels. (Notteboom, 2004).

African countries have realized the growing market for goods and services and this has called for increased transportation of products to other countries with the help of water transport however huge challenges and risk in managing mainland or deep sea ports as well as inland container deports have been encountered (Obeng, 2010). One of the significant of challenges is the issue of congestion which is facing most developing economies in the sea ports. These congestions do normally undermine the fluidity of business transactions as well as the general operation of the ports. The congestion at the African ports has cause decline of the competitive advantages of these ports as well as increasing direct cost such as port congestion penalties or surcharges and indirect costs such as inventory costs to the port users (Oyatoye and Okoye, 2011).

Many African countries according to Zeddy (2007) include Tanzania face numerous challenges in ports and harbors, which include increasing tariffs, introduction of new and sophisticated vessels and equipment, deficits of technical know-how, insufficient and inefficient manpower that hinders operation of various operation terminals. Considering tremendous increase in cargo volumes that African ports terminals receive monthly, it is evidently clear that such volumes do really impede the efficiency of ports in Africa, thereby grinding down their competiveness from the perspectives of output and return time of vessels and container utilization (Chioma, 2011). There is the need therefore, within the framework of global trade integration

and sustainability, for international ports, especially those on the African continent, to comply with required international security and maintenance protocols (Rambo, 2012).

For instance, in Ghana, the port of Tema until recently suffered from low berth productivity as a result of lack of gantry cranes (Obeng, 2010).Increasing container volumes also forced carriers to wait several hours for berths and, in turn, imposed congestion surcharges on shippers, similarly, in Durban, cargo handling demand had exceeded the terminal's handling capacity, causing berth congestion and forcing carriers to impose penalty surcharges (Obeng, 2010).

However following the cumbersome process whereby ships could spend days loading and offloading due to port congestion, an agreement was reached in the 1960s on the introduction of an international system that makes use of standard-sized containers suited for the road, rail and sea transport networks that can load and unload as near as possible to their (freight) origins and destinations as some of the decongestion strategies (Obeng, 2010).

As a decongestion strategy, MacDonald (2002) noted that manual personal identification or cargo security checks is important in slowing down the flow of cargo through the ports with little resultant increase in security. He further noted that until an efficient credentialing system is adopted by ports, verifying proper credentials at port gates is likely to contribute to access delays. Providing security and efficiency simultaneously has been a high priority goal in the design of

improvements to seaports and through operations on appointment systems so as to limit on the level of port congestion (Schubert, 2002).

In Tanzania, TPA is aims at facilitating the supply chain and improving the competitiveness of Tanzanian ports by continually improving the quality of port services on strategic, tactical land operational levels. Port performance is being severely impeded by inability to clear cargo from the ports quickly, and the country's role as a channel for trade from the land-locked countries is impeded by incomplete road and rail networks, and the poor quality and high cost of land transport hand in hand with the small size of the port to support the high demand for the services (Mwindi, 2009).Most of Tanzania's ports are located close to city centers, where they contribute to traffic congestion and other adverse environmental effects (Eyakuze, 2008).

Constant ports congestions have also limited the efficiency of operations whereby with the advent of containerization, time spent by clearing agents or shippers in clearing their goods from the ports occupies most of their business time. In addition to that constant port congestion in Tanzania has contributed to the shift of some importing land locked counties to shift to Mombasa port that has led to loss of a lot of government revenue (Eyakuze, 2008). In order to achieve a proper balance of development through port decongestion, it is important to planning and design proper strategies for port decongestion and development. Therefore the researcher wanted to investigate the inland container depot and container freight services decongestion strategies.

1.2 Problem Statement

Ports in Tanzania have been significant in facilitating transportation of goods and services from one country to another. This has contributed to increased economical and social development in terms of infrastructural development, employment opportunities, government revenue and integration of the East African community among others and in this case CFSs and ICDs have played a big role in functions of the ports (Mwindi, 2009).

However, congestion at Tanzanian sea ports, especially at Dar es Salaam port have been a major hurdle in port operations as cargo imports especially cars and containers have always surpassed yard holding capacity against a backdrop of poor cargo off take to hinterland. The movement of trucks in and around the port is slow, there is an increment in ship turnaround time which leads to vessels staying long in the port creating queues at the port (The World Bank, 2008). These happenings are not only due to the fact that deconsolidation of containers are being done in the port's operational area leading to space constraints but also due to the limited decongestion strategies and this reducing the competitiveness of the port.

In addition to that ports lack substantial reforms and upgrading to reach international standards and to meet the demands of a growing and increasingly international trade (Eyakuze, 2008). The situation has led shippers and agents to spend much of unnecessary time clearing their cargo from the port which resulted in high cost of doing business. Business owners have lost capital following high surcharges because of overstaying at port. It has also led to loss of products especially perishable ones

hence a loss to the owners; this has also contributed to increased accidents at the port following the high level of congestion (Mwindi, 2009).Therefore this motivates the researcher to investigate on the decongestion strategies that can be implemented by Tanzanian ports authorities in eliminating port congestion of Tanzania.

1.3 Research Objectives

1.3.1 Main Objective

The main objective of the study was to explore decongestion strategies used in inland container depots (ICDs) and container freight services (CFSs) at Tanzania sea ports.

1.3.2 Specific Objectives

This study was guided by the following specific objectives:

i) To identify factors that contribute to the increased congestion of Tanzanian seaports
ii) To assess the effects of congestion at Tanzania seaports
iii) To analyze some of the decongestion strategies implemented by Tanzania seaports managements
iv) To investigate factors hindering implementation of the decongestion strategies.

1.3.3 Research Questions

In order to attain answers to the research objectives, the researcher had come up with the following research questions:

i) What are the factors that contribute to the increase of congestion at Tanzanian seaports?

ii) What are the effects of congestion at Tanzania seaports?

iii) What are the decongestion strategies implemented by Tanzania seaport managements?

iv) What are the factors hindering implementation of the decongestion strategies?

1.4 Scope of the Study

The scope of the study explains the boundaries of the research and this is based on the fact that the researcher cannot study everything and everywhere as stated by Kothari (2004). This helps the researcher to keep focused on the task in order to make decisions about the changes required during the research process that contribute to obtaining of both valid and reliable information (Miles and Huberman, 1994). The study was limited to inland container depots and container freight services at Dar es Salaam sea port. The study was both descriptive and exploratory research designs and both quantitative and qualitative data and was obtained from both primary and secondary sources.

1.5 Significances of the Study

Results of the study assist officers of TPA to understand how they can improve on their performance through reducing on decongestion. This will call for improved efficiency in the maritime sector as a whole hence contributing to economical development of Tanzania.

Policy makers benefit most from the study. This is because the findings provides the different strategies that can be implemented in order to eliminate on the level of

congestion at the ports hence being useful in the development of guidelines for setting up public-private partnerships and management of transport facilities. Policy makers also benefit from the study through formulation of bye laws that can guide the ports management on decongestion of ports.

The study also helps to provide relevant information to students, academia and researchers on similar or related topic by acting as a basis for literature review. The information are also be used in the information and resource centers of higher institutions of learning like universities for their students as well as the resource centers in Tanzanian port Authorities.

1.6 Organization of the Study Report

The remainder of the study is organized as follows.

Chapter two identifies relevant theories and concepts that was used in the study as a guide to gain better understanding of the matter under study then presented a synthesis of relevant literature that had been reviewed and lastly it focuses on the conceptual framework while providing explanation of the variables.

Chapter three presents the methodology of the study; which comprised of the research design, study population, sampling, research instruments, analysis strategies and credibility of the study.

Chapter four is dedicated to the presentation of data and analysis of results and findings. Lastly chapter five involves the summarization, conclusion implications and suggestions for potential future

CHAPTER TWO

20 REVIEW OF LITERATURE

2.1 Introduction

Chapter two presents the theoretical overview and it states the literatures in which this study focuses in line with the research questions. The literature review is entitled to exposing researcher to the problem he was addressing. The main objective of this literature review is to analyze what has been researched in relation to the topic under study. This provides profound insight into the topic and facilitates the interpretation of the findings. The researcher was familiarized more about the history of the problem, how it began and the consequences related to the problem, how other researchers had addressed the problem, the theories that have been formulated relating to the problem and finally a conceptual framework based on the theories were developed.

2.2 Theoretical Review

A theory is an explanation which helps to understand and make predictions about a given situation. A theory is constructed by a set of sentences consisting entirely of the true statement about a situation under consideration; however the truth of any one of these statements is always relative to the whole theory (Carnwell and Daly 2001). The study stands basically on four the following theory.

2.2.1 Queuing Theory

Queuing theory is used to study the phenomenon of waiting in lines. Some people use the information gathered from queuing theory in order to determine how to best

serve customers and so prevent them from waiting in line longer than they have to. Adedayo et al. (2006) 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 (2007) in his article on application of queuing to the traffic 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 model of queue theory are the arrival and service patterns.

The theory allows researcher to analyze several things such as arriving in line, waiting in line, and the time it takes to service customers. The above information in line with the theory helps in predicating on a customer's waiting time, the expected amount of customers that were in a line, the probability of a customer encountering a line among other relevant information that can help in reducing on congestion. This information can be used in order to find ways to reduce lines and wait time.

There are several queuing disciplines that have been developed because of queuing theory as explained by Saaty (1961) and four of which are First in First Out (FIFO), Last In First Out (LIFO), Processor Sharing, and Priority. Under FIFO describes the practice of serving customers in the order they arrive in so that the person waiting longest is served first. Just like in port operations, ships that arrive in time at the port are cleared earlier before those that arrive later.

LIFO describes the practice of serving customers so that the person who comes in last leaves first. Processor sharing serves customers at the same time to that the

average waiting time for all customers is about the same. The Priority discipline serves the customer with the highest priority first. In line with the study some ships may arrive last but cleared first before those that appeared first because of different reasons such as corruption, immanency cases, order from the government among other reasons.

Examples of how queuing theory works is present in many aspects of everyday life. At bank tellers and credit unions, one may see one line and multiple tellers. This happens to help ensure that one slow transaction does not hold up the entire line. Some stores open more registers if there are more than three people waiting in a line. There are also ports that have more than one inland port such that when one port is congested, another port is used to offload and load cargo, while other ports have separate loading and off loading service centers.

2.2.2 Strategic Implementation

Scott (2012) state that for effective strategic management there is need for analysis of customers and competitors that are the external environment and the organization it's self that is the internal environment. The theory was based on five assumptions for successful implementation of strategy in an organization that is aligning of initiatives, align budgets and performance, structure follows strategy, monitor and familiarization as explained below.

Under aligning initiatives the theory emphasized on creation of new strategies and follows it by not doing the same old things, new strategy means new priorities and

activities in the organization. In line with port decongestion implementation of new strategies and supporting them through not following the past strategies can reduce of port congestion.

Secondly, the theory explains about align of budget and improving on performance, for port decongestion, there is need to allocate funds and resources for port improvements and effectively monitor whether the allocated funds have done any improvements so as to reduce on congestion of ports. Likewise performance incentives should be directly linked to performance against strategies. They should include a combination of individual, team and corporate performance measures that ensure staff recognize their direct and indirect impact on strategic performance (MacDonald, 2002).

Structure follows strategy, under this the theory emphasizes on the proper organizational structure whereby it poses a question that does the structure of your organization allow strategies to cascade across and down the organization in a way that meaningfully and efficiently delivers the strategies? For decongestion of the ports, port authority needs to be willing to undertake the strategies**.** Organizations that try and force new strategies into an out-dated structure do not win and eventually reaches a deadlock (Clark, *et al* 2004).

Engagement of staff; under this staff need to be flexible to adhere to new changes since strategic implementation calls for new changes in management however staff needs to be prepare for the new strategies through training, sensitization for the

effectiveness of the strategies and this is through effective communication of the new changes.

Monitor and familiarization; for proper strategic implementation, regular strategic meetings need to be held by management for proper implementation following the constant internal and external changes. The theory concludes that strategy is not just a document written by executive teams and filed in the CEO's desk. It is a vision for the organization, owned by the organization. And to succeed the whole organization must engage with it and live and breathe it. Strategy should address organization operations, structure, and how organization goes about doing what it does. Strategy should be the pillar against which organization assess its priorities, its actions and performance. The strategy implementation steps if well observed and followed by management of the seaports can assist in achievement of decongestion process.

2.3 Empirical Review

Empirical review refers to literatures or previous studies that relate or argue positively with the study hypothesis and variables. Various researchers have put forward issues on inland container depots and container freight service in line with the above mentioned research objectives.

2.3.1 Cause of Congestion

Iannone, *et al* (2008) explained factors cause congestion in the inland terminal and freight terminal of the seaports in Republic of South Africa in term of economic factors and investment factors. According to him economic factors are labour market

economies, the availability of a good quality (well trained and highly skilled) labour force, and underlying dynamics in the local economy. While investment factors are relating to the availability of funds for the investment, the scale of the investment and its location, the network effects (e.g. are there missing links in the network), and the actual timing of the investment.

However, factors for congestion at the port can constitutes political factors that are related to the broader policy environment within which transport decisions must be taken. This has been reported by Zeddy (2007) from Mozambique. Also from Australia (Roso, 2008) bureaucracy and politics are the main causes of container congestion in dry ports. This shows that the regulations of the country concerning intermodal transport and dry ports have an impact on the decongestion strategies implemented by port authorities. According to Roso (2008), congestion in the port area associated with poor transport of the cargos to the intermodal terminals via train and road. An inland container depot must fit into a complex system where the necessary supporting infrastructure (roads, railways) is in place, maintenance is assured, and the legislative, regulatory, and institutional systems are properly designed to optimize the involvement of both the public and the private sector.

Banister and Berechrnan (2000) included in their study factors such as the sources of finance, the level of investment, the supporting legal, organisational and institutional policies and processes, and any necessary complementary policy actions as the reasons of poor performance of the container terminal, inland terminals and dry ports.

Chioma (2011) conducted a study on the factors for increased port congestion in Mozambique and Cameroon while drawing the way forward to solving congestion problems. The study made use of both primary and secondary data and both qualitative and quantitative data analysis techniques were used in the study. It was found out that the following factors lead to congestion at container terminals and yards in the studied countries:-inadequate equipment like cargo handling plant and equipment at the port makes unloading and clearance of cargoes difficult and time consuming, delay of ship turnaround time, insecurity of imported goods, low skilled manpower and excessive charges. All these factors affect, the movement of freight which in turn decline of economic development in the country. The study recommended the need for use of dredging, connecting infrastructure and expansion of inland infrastructure and implementation of proper planning strategies for port development and expansion.

Decongestion strategies implemented by Ghanaian port authority was reviewed by Obeng (2010) with the aim of evaluating the level of efficiency and effective of information technology systems in improving port operations as decongestion strategies. With the help of both primary and secondary data used hand in hand with both qualitative and quantitative data analysis techniques, the study found out that the frequently used of innovative information and automation technologies at Ghanaian ports was enhance internal and external efficiency of the ports, hence, decongestion of the ports. While information technology work better with Ghanaian ports, Oyatoye and Okoye (2011) put it that introduced new container status information system in Lagos port, Nigeria had associated with negative impacts. The

system was perceived to be too costly and unreliable and it was not clear and so congestion at Lagos port kept increasing. He recommended for the implementation of a new appointment system of arrival and departure of the ships at the port as another strategy so as to control on the level of congestion.

Mwendo (2008) conducted a study on the causes of sea port congestion in Tanzanian while suggesting some of the strategies for port decongestion. The study obtained its data through questionnaires, interview and observation methods. It was found out that there insufficient space within the port terminal to manage growing volume of traffic where by container volume had reached 2500000 TEU with high expectations for rise by 2010, poor management of containers in the port where by containers were stacked higher and this impacted on the loading and delivery time and conflicting incentives for the container terminal operators. The study recommended need for restructuring storage tariff so as to increase with the container's dwell time in the terminal, change methods of allocating containers from ships to the same ICDs and implementation of port master plan to prepare for further growth.

2.3.2 Effects of Congestion

The problem of congestion at the freight terminal an inland port also extends to the yard of the terminals where coupled with capacity issues, it can degrade the reliability and performance of carriers, shippers, and terminal operators. In addition to the deterioration of the performance of terminal and drayage operations, the environmental effects from idling trucks has also been starting to emerge as a serious problem as truck emissions have been linked to health conditions including asthma, cancer and heart disease (Solomon and Bailey 2004). These words have been

supported by Rambo (2012) who reported that Air and noise pollution due to the truck lineup nearby Mombasa port has been serious problem to the residents around the Mombasa port.

Congestion at the ports has an impact on congestion in the road network. It slows the trucks from carrying out their operation of transporting containers from one location to another. This has an undesirable effect on truck utilization, and more importantly on the time taken to process the vessels (Notteboom, et al 2004).

Regan and Golob (2000) surveyed the impact of congestion at the port terminals on the operation of firms in California. This survey was conducted on nearly 1200 private carriers operating in California ports. More than 40% of the surveyed dispatch and operations managers claimed that drivers typically wait more than an hour outside the port prior to access. Additionally, 75% claimed that drivers typically spend more than an hour inside the port. Over 80% said that the time the driver would spend at the port was not predictable. This combination of delays and variability led 44% of the firms to report that operations were often significantly affected by congestion. The study therefore recommended the need for more employees at the port so as to ease service delivery, expansion of the port to cater for the increased number of customers.

As the result of poor road infrastructure connected to the seaports, in 2010 congestion cost pointed to 1% of the European Union GDP according to the white paper for transport policy EU (2011). According to the World Bank (2013) analysis

a decline in world trade volume was 2.1% for this year 2012, before delay of the cargoes at the ports and the decline in estimated to increase to 6% by the year 2020 if nothing will be done.

Congestion at Nigerian seaports has also been examined by Oyatoye and Okoye (2011) who study on congestion of ports in Nigeria with the aim of finding out the impact of congestion on business owners and the government of Nigeria. The study was conducted in three major seaports of Nigeria which as Lagos, Calabar and Delta seaports.

The primary sources of data were port Managers and the terminal operators while the secondary sources included past records of operational activities, policy papers on government aimed at proffering solution to the problems of port congestion. They reported that congestion at these ports resulted in diversion of ships scheduled for Nigeria Ports to other neighboring country ports which has caused the country to lose a lot of revenue. However, they recommended for the systematic approaches in port planning and management.

Luz (2007) found that the congestion of the cargo at Portuguese seaports was increasing at 5 % each year and added that the increase of congestion was causing damage and accidents of properties at the port, severely harming both the users and the economy. It was added that lost of port users properties and accidents were expected to increase appreciably if nothing is to be done. Kenyan shippers' council (2013) carried out a survey research with the aim of investigating on the effects of

port congestion to business operation. It was found out that following the perennial congestion of cargo at the seaport, ships were delaying at the berth offloading containers. The delay time was approximate to be 6 days. These extensive delays connected with the increase of the prices of various products in the market as the result of the limited supply hence disruption of businesses. This also led to loss of property especially the perishable goods following the delay in clearing of the products hence a loss to the cargo owners.

However the council came up with the following recommendations, implementation of an electronic cargo clearing system, making improvements in off-take of cargo from the Port and increase on staff at the port for easy service delivery.

Mwindi (2009) conducted a study on the impact of port congestion while reflecting to decongestion strategies needed to be implemented by TPA in Dar es Salaam port. And used both primary and secondary data the study found out that dwell time of offload and loading of cargo at this port to be very high, which resulted in many business people from the neighboring landlocked countries of Burundi, Rwanda and Uganda not to use the Dar es salaam port but rather using the Mombasa port and this accounted to the loss of revenue to the government of Tanzania. This called for recommendations for the implementation of creation of additional space within the port in order to adequately support containers. In addition to that the port management needed to employ the use of modern automated technologies and reformatting the required documentation procedures in the cargo clearance from the port so as to reduce on congestion.

2.3.3 Decongestion Strategies

Availability of enough workers at the port also impact on the decongestion performance. There are over 4000 casual workers (Tom, 2009) working with stevedoring companies in Tema seaport of Ghana whose services are employed as and when needed to speed up operation at stevedoring. Congestion at Nigeria ports has been due to the massive unemployment of dock labour for handling containers at the ports. This was reported by Chioma (2011) who conducted his study at Delta port and recommended for more dock labours. Hemson (1996) wrote that highly trained and skilled staffs are needed for the performance and competitive advantage of the transportation system.

One of the major problems at marine container terminals is that the terminal gates, where trucks enter and exit the terminal to deliver or pick-up a container, are only open during certain hours on weekdays; due in part to union agreements, although operations within the terminal carry on 24/7 (Bureau of Transportation Statistics 2006). Implementation of different gate operation strategies may relieve congestion at the port (Maduka, 2004).

Efficient gate operations are crucial to intermodal freight terminals since their impact is not isolated to the efficiency of the operations within the terminal but also extends to the road traffic on nearby freeways and access ramps. Inefficient gate operations can spill over to the surrounding roadway network causing serious safety and congestion problems, and degrading the reliability and performance of carriers, shippers, and terminal operators. An improved intermodal network has help in

decongestion at Tokyo and Niigata ports on the Sea of Japan (Notteboom and Rodrigue, 2005).

Canonaco (2008) conducted a quantitative study to develop a strategic framework for increasing performance at Walvis Bayport in Namibia. The study presented various strategies include, among others, gate appointment systems, gate extended hours of operation, truck buffer areas etc. while ensuring better handling and storage operational conditions inside container terminals.

The study suggested that in addition to reducing waiting times at terminal gates and improving the overall terminal operations (i.e. truck interchange and storage yard operations), these strategies may also be able to reduce congestion at seaports in nearby countries. On top of that (Iannone, et al, 2008) argued that legislations have spurred the need for efficiency and congestion reduction, existing attempts at reducing truck queues at terminal gates, technologies available for truck appointment systems, and the long-term viability of these strategies.

Availability of suitable land, reliable and competitive rail service and good access to a highway network has been reported to associate with operation efficiency of the seaports. A higher operational efficiency can increase terminal performance and reduce congestion of containers. Increasing the productivity and operating efficiency provides the port with a direct increase in profitability (Guannan, 2010). Faster and efficient services has become key performance of Chinese and Indian ports (Leung, 1980)to deal with truck traffic congestion in the vicinity of and within the terminal. Ship delay turnaround time is lower as 3 and 5 hours in China and India respectively.

Reduction of port charges has a positive effect on the decongestion at the port.

Research published in 2008 used a multi-server queuing model to analyze marine terminal congestion and overall cost of trucks waiting at the gate, due to lost time (Guan and Liu, 2008). The authors chose one of the marine container terminals in the Port of New York as a test case. An optimization model was developed to minimize overall terminal system cost. Minimizing cost at a marine terminal is good both for trucking companies, since their wait will be reduced while providing good service to their clients.

2.3.4 Hindrance of Decongestion Strategies

Lack of the consistent is also an issue in implementation of strategies. Leung (1980), writing on the railway patterns and .national goals in China, concluded that different goals can be attained with identical strategies, but that development strategies themselves are ineffective if not framed in an accepted and reliable manner.

Rambo (2012) conducted a study on the factors affecting efficiency of container freight services in Mombasa Kenya. The study used a descriptive survey design to collect the relevant data. The target population consisted of all the 17 managers or responsible officers of the CFS at Mombasa Port and an Ordinal Linear Regression (OLR) model was used to analyze the data. The study found out that limited employees to deliver services at the sea port, limited loading and off loading equipments, high demand for port services, high bureaucracy in port management contributed to the limited efficiency of container freight services.

The study therefore recommended for the implementation of improved technology in loading and off loading of cargo, employment of more employees to increase on service delivery and expansion of in land and container flight stations so as to reduce on congestion.

2.4 Conceptual Framework

The conceptual framework is an approach elaborated either in graphical or narrative forms of the main points to be studied in a research work (Miles and Huberman, 1994). A conceptual frame work is an abstract indication of how the basic concepts and constructs are expected to interacting the actual setting and the experiences that form the foundation of the research study.

The conceptual frame work have been based for the purpose of this study based on the four investigative questions as stated in chapter one to guide the research. I recalled these questions here,

i) What are the factors that contribute to the increase of congestion at Tanzanian seaports?
ii) What are the effects of congestion at Tanzania seaports?
iii) What are the decongestion strategies implemented by Tanzania seaport managements?
iv) What are the factors hindering implementation of the decongestion strategies?

In the previous sections (section 2.3 and 2.4), different kinds of theories and empirical studies have been exposed concerning the congestion and decongestion

strategies at the port. From what have been narrated on these sections, the following framework has been developed.

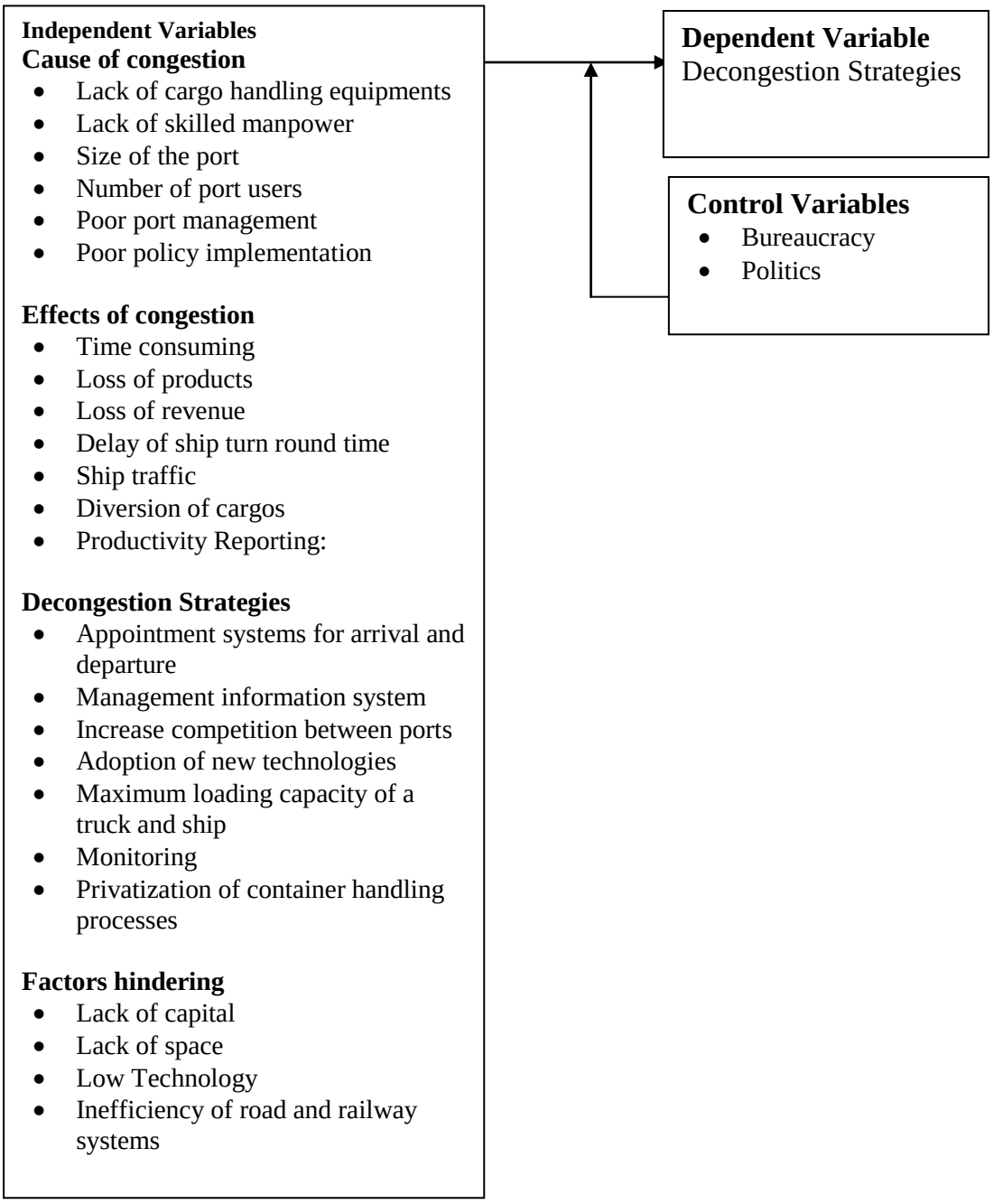

Figure 2.1: Conceptual Framework for Inland Container Depots and Container Freight Services Decongestion Strategies

Source: Field Data, (2014)

2.5 The Elements or Variables

A variable is a characteristic that can assume two or more properties. If a property can change either in quantity or quality, then it can be regarded as variable (Kenneth, 2005). In the study there is three types of variables; independent variables, dependent variables and mediating variables.

An independent variable is the variable researcher has control over, what a researcher can choose and manipulate. It is usually what researcher thinks would affect the dependent variable. In some cases, the researcher may not be able to manipulate the independent variable. It may be something that has been already there and is fixed, something researcher would like to evaluate with respect to how it affects something else, the dependent variable (Kenneth, 2005). In this study, independent variables have been developed by researcher and these are causes of congestion which include factors like lack of cargo handling equipments, lack of skilled manpower, size of the port, number of port users, poor port management and poor policy implementation among others; concern with the impact of congestion the following variables were considered time consuming, loss of products, loss of revenue, delay of ship turn round time, ship traffic, diversion of cargos and productivity reporting; while variables for the decongestion strategies in the study were appointment systems for arrival and departure, management information system, increase competition between ports, adoption of new technologies, maximum loading capacity of a truck and ship, monitoring and privatization of container handling process appointment systems for arrival and departure, management information system, increase competition between ports, adoption of new technologies, maximum loading

capacity of a truck and ship, monitoring and privatization of container handling processes and factors hindering implementation of decongestion strategies these can be attributed lack of capital, lack of space, low technology and inefficiency of road and railway systems and so on.

A dependent variable is what researcher measure in the study and what is affected during the study. The dependent variable responds to the independent variable. It is called dependent because it depends on the independent variable (Kenneth, 2005). In this study researcher had to relate what have been known to be independent/exploratory variables with decongestion strategies in the seaport. Therefore, decongestion strategies were use as the dependent variable in this study.

Mediating variables are used to test for a relationship between dependent and independent variables. That is, to test whether an observed relationship between dependent and independent variables may be explained by the presence of another variable (Kenneth, 2005). In this study mediating variables were concerned with the bureaucracy and politics because this is because it has been shown in other studies that they have influence in strategic development and congestion at the port. Therefore, the study used the said variables as mediating factors since it was necessary to make sure that potentially moderating effect of these factors were minimized.

CHAPTER THREE

3.0 METHODOLOGY OF THE STUDY

3.1 Introduction

Research methodology refers to the way how a research problem can be solved in logical manure (Strauss and Corbin, 1998; Sweet and Martin, 2008). This chapter involves presenting the choice of method of collecting and analyzing data, from practical point of view, comparing relative advantages and disadvantages of other alternative method that may be more or less appropriate to the context of this study with the aim of finding answers to the research questions (Kothari, 2006). This chapter presents research design, describes the research methods, sampling techniques and the instruments employed in the data gathering, data analysis that led to the generation of valid and reliable data while taking in to consideration of ethical issues of the respondents.

3.2 Research Strategies and Design

3.2.1 Research Strategies

Research strategy can be defined as the way in which the research objectives can be questioned (Naoum, 1997). There are two types of research strategies namely quantitative research and qualitative research (Naoum, 1997). The researcher plans to implement both qualitative and quantitative strategies. Qualitative is soft, rich and deep; it aims at answering questions of why and how that need a lot of explanation and its findings are presented in themes. Qualitative research strategy is aimed at helping researchers understand the meanings people assign to social phenomena and

to elucidate the mental processes underlying behaviors. This is through the use of observations, in-depth interviews and focus groups discussion (Polit and Hungler, 1995). The researcher made observation of procedures used to load, offload and storage of containers at the seaport, together with conducting focus group discussion (FGD) with port managers as well as interviewing them. Therefore, all these three methods of collecting qualitative data were used in the study.

Quantitative research is about prediction, generalizing a sample to a larger group of subjects and using numbers to prove or disprove a hypothesis while providing answers to research questions of what and when (Polit and Beck, 2003). According to Bowling (2002), quantitative research deals with quantities and relationships between attributes; it involves the collection and analysis of highly structured data in the positivist tradition. Since the study wanted to find relationship between strategies used by Dar es Salaam seaport management and decongestion at the port as well as generalize the findings to the rest of the seaports in Tanzania, therefore, quantitative approaches were used in this study. Quantitative data were obtained via questionnaire method.

3.2.2 Research Design

Kothari (2004) define Research design as the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedures. In this study, two research designs were used and these are descriptive and exploratory designs. Descriptive research design is the research design with the purpose of producing an accurate

representation of persons, events, or situations while providing an accurate description of what is existing, the frequency with which it occurs and the meaning assign to it by the different people, events or situations (Saunder, 2009). The descriptive design provided deeper insight and better understanding on description of the reasons for increased congestion in Tanzanian seaports and effects resulted from said congestion. Under this research design, the researcher utilizes quantitative data that were attained through questionnaires.

An exploratory research design is conducted when little is known about the phenomenon that is under study and when the problem is difficult to limit with limited restriction on the topic (Brink, 1996). With a lot of curiosity, the researcher aims at discovering new ideas so as to find answers of why congestion is increasing at Tanzania seaports and how the problem can be solved. This research design helped in attaining qualitative data were attained through interview, observation and FGD data collection method.

These research designs have also been selected on grounds that they provided a good plan in advance of data collection and analysis for the research project, and yield maximal information with minimal expenditure of effort, time and money.

3.3 Research population and Study Area

3.3.1 Research Population

According to Ruane (2005), research population refers to the individuals, events or objectives that have common observable characteristics and meet certain criteria for

inclusion in a given universe. In conducting a study, it is not possible, practical and even sometimes expensive to gather data by considering entire population. Therefore smaller chunks of a unit sample are chosen to represent the relevant attributes of the whole units (Leedy and Ormrod, 2005). A targeted population in this study included operation managers, receiving agents clearing and Freight Forwarding Agents (CFFAs) and port user. These groups had been proposed to involve in the study on the ground that they would provide reliable and valid information concerning the matter understudy while taking in to consideration that the selected respondents were easily access by the researcher.

3.3.2 Research Area

The term research area refers to interdisciplinary fields of research pertaining to a particular geographical, national or cultural regions to where the study is limited (Babbie, 2001). The study was conducted at Dar es Salaam seaport. Dar es Salaam is located at 6°48' 30 south, 39°17' east in Tanzania and cover approximately 1,590.5 sq km, it is surrounded by Coast Region both Northern, Western and southern part, east it is bordered by Indian Ocean.

Dar es Salaam seaport has been chosen because it is the leading seaport in Tanzania wherein a lot of cargoes in and outside Tanzania path. This port also serves many countries ranging from East Africa to Central. The study area has also been chosen on grounds that it provided reliable data for the study and it was in the interest of the researcher’s proximity hence making it easy for him to administer the data collection instruments.

3.4 Sampling Design Procedures and Size

3.4.1 Sample Design

A sample is a group hopefully representative of the population intended to be studied and from which one devices generalization about the population (Bailey, 1994). Sample according to Kothari (2006) can be defined as a collection of some parts of the population on the bases of which judgment is made. A sample should be small enough to make data collection convenient and should be large enough to be true representative of the population which is selected.

In this study potential respondents were selected among managers and receiving agents at the Dar es Salaam seaport, clearing and freight forwarding agents in Dar es Salaam as well as port users; base on the reasons given above on the study population. The criteria for selection of respondents from the population were as follows:

- Currently working with Dar es Salaam seaportas the operation manager or receiving agent for more than three years; three years cutting point have been selected base on the experience issues.
- Licensed clearing and freight agents operating the business in Dar es Salaam seaport for more than three years; this implies one was having detailed information on Dar es Salaam seaport operation.
- As well as being an international trader using of Dar es Salaam seaport.

3.4.2 Sample Procedures

According to Kothari (2006), sample procedure is defined as the process of selecting

a some part of the aggregate of the totality based on which a judgment or inference about the aggregate or totality is made. It is a process of selecting a group of people, events, behaviour, or other elements with which to conduct a study. It is also involved selection of technique to be used in the selection process.

An important issue influencing the choice of a sampling technique is whether a sampling frame is available or not, that is, a list of the units comprising the study population. If sample frame is available investigators are advices to use probability sampling techniques such as simple, stratified and cluster random sampling techniques. And if it is not available investigator has to use non-probability sampling techniques such as purposive, convenience and snow bow sampling techniques (Saunders, 2009).

In this study researcher used simple random sampling (one of probability techniques) to select managers and receiving agents at Dar es Salaam seaport. This technique was used because total number/population of these two groups is already known by researcher. But the researcher used convenience sampling (non-probability sampling) to select representatives of clearing and freight forwarding agents as well as port users. This is because it is hard to know exactly number of these agents involve in clearing and forwarding containers/cargo at Dar es Salaam seaport as well as users of the port as specified on the sections above. According to Zikmund (2003) convenience sampling refers to a sampling obtaining unit of people who are most conveniently available; therefore, the study involved those who were willing to participate in the study.

3.4.3 Sample Size

Sample size is the number of respondents selected to participate in the study from targeted population. It depends on the accuracy needed, population size, population heterogeneity whether the sample was subdivided or not and resources available (Bailey, 1994). From the result of pilot study it was discovered that there 16 staffs at managerial level and 21 officers working as the receiving agents. Therefore, the study made sample of these two groups of potential respondents working with the said port using a sampling formula provided by Yamane (1967) when population/sample frame is less than 200 individuals.

This is stated here under.

$$n = \frac{N}{1 + N(e)^2}$$

Where 'n' is the sample size, 'N' is the population size or sample frame and 'e' is the degree of precision that the selected population is the right one. At 85% level of confidence the sample size for managers and receiving agents are computed as follow:

$$n = \frac{16}{1 + 16(0.15)^2} = 11 \qquad n = \frac{21}{1 + 21(0.15)^2} = 14$$

Thus, the study had to sample total of 11 and 14 managers and receiving agents respectively at Dar es Salaam seaport. For purposes of selecting the key informants among clearing and freight forwarding agents (CFFAs) as well as port users, convenience sampling was used as said above and these selected twenty (20)

respondents from each of CFFAs and user groups. Therefore, the study had sixty five (65) respondents.

3.5 Methods of Data collection

The study was conducted with the help of both primary and secondary data. Data collection efforts will am at attaining data on implementation of strategies for decongestion at Dar es Salaam seaport.

3.5.1 Primary Data

Primary data is the information gathered directly from experimental studies or respondents using the researcher's research instruments (Kothari, 2006). The researcher used questionnaire, interview, observation and FGD in collection of primary data. These tools have been chosen on the grounds that they added more attributes and gather detailed information for the research topic under investigation. They also provided hard facts and numbers relating to the issue while providing quantifiable data that was generated from the large sample population.

3.5.1.1 Questionnaire

Questionnaire refers to a formal set of questions designed to gather information from respondents that accomplished the goals of a research project (Burns and Grove, 2005). A set of questions were arranged in which the respondents were required to fill in answers. This method was used to collect quantitative data. The questionnaires were made up of both closed ended questions and open-ended questions. In open-ended questions the respondents were required to fill in by giving their opinions

while in close ended questionnaire contained multiple choice questions provided by the researcher. Respondents answered in accordance to the given choice. Questionnaire was used to collect data from both groups of respondents; managers and receiving agents at the port, CFFAs as well as port users.

However, questionnaire was used as the primary tool for data collection because it is time saving method of collecting data since many respondents can be approached at the short time. Respondents were given adequate time to provide answers and this enabled accuracy and credibility of the collected data. The researcher has also taken in to consideration of validity, reliability and discrimination of the questionnaire in order to produce the required data.

3.5.1.2 Interview

An interview refers to an oral verbal communication between the interviewer and the interviewee (Oppenheim, 2004). This method was used to attain qualitative data. In the study face to face interview with semi structured open ended questions were used to collect data from the respondents through application of both listening and understanding skills with high degree of respect to respondents' information.

Answers were recorded on the interview sheets from the respondents by the researcher to avoid omissions and irrelevant data. In addition, the words in the questions were simple, clear and acceptable to respondents. Any words that affect the sensitivity of religion, race, culture, and ethnicity of the respondents were avoided. This method targeted user and CFFAs.

This method of data collection has been chosen on the grounds that the researcher had the opportunity to ask a series of questions on the topic of study to the respondents, confusions and misunderstandings were easily avoided while dealing with ambiguous answers. To avoid boredom limited time was spent while conducting the interview process so as not to interfere with respondents work activities and was conducted in an agreed place.

3.5.1.3 Focus Group Discussion

A focus group discussion is an interview with a small group of people usually six to eight people participate in the interview for about one two hours(Patton, 1990). Patton argues that focus group discussion is the highly efficient qualitative data collection technique, which provides some quality controls on data collection. Participant tends to provide checks and balances on each other and it is fairly easy to assess the extent to which there is a relatively consistent shared view among the participants.

Focus group discussions were held at the office of the Dar es Salaam seaport in the meeting room. They were two deferent FGD and were carried out in deferent days. The first FGD involved officers of the port from managerial level and second group consisted of receiving agents. Each group had 6 to 7 members; those who were willing and having time to participate in the FGD at the proposed day. Each meetings/FGDs took about one and a half hours, and they were conducted by using Swahili Language. Two research assistants were also included in the meeting in order to capture all issues that rised in the meetings by noting them down.

3.5.1.4 Observation

Rich information and awareness about a phenomenon can be obtained through direct observation. Denzin (1989) and Patton (1990) note that direct observation gives the researcher a valued recourse and tool to relate the information obtained from the questionnaire, to crosscheck information gathered through interviews and through other relevant methods. It also provides necessary background information on the problem being studied.

Observation was therefore vital qualitative method used during the data collection period. This method was used as a supportive technique to further compliment data that was obtained by other methods. The researcher visited Dar es Salaam seaport to observe existing containers, the why containers/cargos are arranged at the port, entered and leaving the port. Photographs of important scenes were taken using a digital camera.

3.5.2 Secondary Data

According to Kothari (2004), secondary data refers to the data which have already been collected and analyzed by someone else. Kothari emphasizes on the value of documents as they can provide more insight into the programs being studied by cross validating and augmenting evidence from other source. Relevant information were extracted and reviewed from files, circular reports and other records published and unpublished (Saunders, 2009). When the researcher utilizes secondary data, then he look into various sources from where he can obtain them and in this case he plans to visit some libraries in order to read up some literatures on inland container depots

and container freight services decongestion strategies. This method has been chosen on the ground that it provided comparative and contextual data while resulting to unforeseen discoveries. This secondary data were used by the researcher only when found reliable, suitable and adequate. More ultimate, secondary data were useful because they are already available data.

3.6 Data Quality Control

The researcher applied some measures to control the quality of the data. These included the following: Piloting the study: This is where the data collection materials are tested to ensure their accuracy. In these phase, the researcher took into consideration of the language spoken (ports terminologies) and understanding of the respondents so as to ensure effective communication in actual data collection for the study.

Editing interview: interview was edited frequently depend on the respondents responses and any missing information were rectified in time and data from key informants were recorded immediately even during the interview.

3.7 Data Analysis

According to Zikmund (2003), data analysis is the use of reasoning to understand and interpret data that has been collected. Data analysis process involves editing, coding, classifying and tabulating the collected data. In the study the researcher used qualitative and quantitative data analysis technique. The use of both methods enabled

effective interpretation of both data in numbers, figures as well as narrative and in depth information were provided.

3.7.1 Qualitative Data Analysis Technique

In case of qualitative data analysis, it involved three concurrent activities and that is data reduction, data display and conclusion drawing (Miles and Huberman, 1994). Data reduction was concerned with the process of selecting, simplifying, abstracting and transforming the data so that they can be made intelligible in terms of the issue being investigated. Data display went a step beyond data reduction to provide an organized assembly of information that permitted conclusion. Drawing conclusion involved stepping back to consider what the analyzed data were meaning and accessing its implication to the research questions. This analysis is known as thematic analysis. However, qualitative information was obtained from interview, observation and FGD. Analyzed qualitative data helped in gain more insight understanding about the topic as emphasized by Saunders (2009) while providing richer and deeper understanding on the research topic.

3.7.2 Quantitative Data Analysis Technique

Quantitative data analysis technique refers to interpretation and presentation of study finds in numerical form (Strauss and Corbin, 1998; Sweet and Martin, 2008). Quantitative data were obtained from the data collected from questionnaires which were subjected to the descriptive statistics analysis, compeering mean analysis (i.e. independent t-test and ANOVA) and other analyses (i.e. Correlation analysis and multiple linear regressions). Accordingly all statistical procedures were conducted

using statistical package for social science (SPSS). SPSS has been chosen because it can take data from almost any type of file and use them to generate tabulated reports, charts, perform descriptive statistics and conduct complex statistical analyses.

3.8 Ethical Considerations

Ethics refer to moral principles, which ought to be considered. Ethics are standards used by groups of people, professionals and communities to measure rightness or wrongness of actions and behaviors, especially of researchers (Polit and Beck, 2003). The researcher took into consideration of the following in order to observe ethical issues in data collection. Obtaining informed consent before the study or the interview begins and ensure that all subjects participate voluntarily, not exploring sensitive issues before a good relationship has been established with the informant, Ensuring the confidentiality of the data obtained and Learning enough about the culture of informants to ensure it is respected during the data collection process.

3.9 Validity and Reliability of the Data

3.9.1 Validity

Polit and Hungler (1995) explained that validity is the extent to which the research data and methods used obtain considered precise, correct and accurate findings. The definition also reflects on questions of how well the findings reflect on the truth, reality of the main questions. There are three kinds of validity as noted by Yin (1994) that is constructing, internal and external validity. Construct validity refers to the process of establishing the correct operational measures for the studied concepts. The researcher ensures construct validity in this study by re-examining data entered in the

analytical software (SPSS) before perform any analysis, this was hand in hand with repetition of analysis procedures to ensure that the answer(s) is correct.

Internal validity refers to the extent to which a researcher can prove that only the independent variable caused the dependent variable. Internal validity was not ensured in this study since the study did not test any analysis.

External validity is aimed at determining if a study's findings are possible to generalize beyond the immediate case study. Since the study was conducted at Dar es Salaam seaport which is the administrator seaport of other seaports in Tanzania, therefore, the information obtained at this port, presents the rest of seaports in the country.

3.9.2 Reliability

An instrument is considered reliable if the results of a study can be reproduced under a similar methodology (Joppe, 2000). Reliability is therefore the extent to which measures yield consistent results (Zikmund, 2000). To be considered reliable, the measuring instrument must be free of errors and the results or observations must be applicable or repeatable (Joppe, *ibid*). The consistency or reliability implied in the research instrument relates to three issues, namely (1) the degree to which a measurement, given repeatedly, remains the same (2) stability of a measurement over time and (3) the similarity of measurements within a given time period (Kirk and Miller, 1986). In this study, the Cronbach alpha coefficient was used to calculate the internal consistency (reliability) of the measuring scales.

The Cronbach alpha reliability coefficient ranges from 0 to 1 (George and Mallery 2003), hence the closer the alpha coefficient is to 1.0, the greater the internal consistency of the items in the scale. According to George and Mallery (*ibid*), a Cronbach alpha coefficient of 0.70 or more is considered ideal. Other studies, however, regard a Cronbach alpha coefficient of 0.50 as acceptable for basic research (Tharenou, 1993). A Cronbach alpha of 0.70 means that 70 percent of the variance in observed scores (the actual scores obtained on the measure) is due to the variance in the true scores (the true amount of the trait possessed by the respondent). In other words, the score obtained from the measuring instrument is a 70 percent true reflection of the underlying trait measured. Therefore, the measures of the variables were conducted as follows:

Cause of decongestion; the variables used were lack of enough cargo handling equipments, lack of skilled manpower, small size of the port, large number of the port users, poor port management and poor policy implementation. The instruments (variables) had a 5-point Likert-scale and reliability check of the instruments revealed a Cronbach alpha of 0.759, which shows that the measure was reliable.

Effects resulted from decongestion; the variables used were loss of income on the clients, loss of working time on clients, ship traffic, delay of ship turn round time, diversion of cargoes from Dar es Salaam seaport to other ports and loss of client cargoes/parcels. The instruments had a 5-point Likert-scale and reliability check of the instruments revealed a Cronbach alpha of 0.788, which shows that the measure was reliable.

Strategies for decongestion; the variables used were adaptation of new technologies in cargo handling process, increase of skilled staffs, monitoring transit, increase efficiency or speed of the crane, maximize loading capacity of truck and ships, reduce bureaucracy in clearing process, use of higher information management systems, formation of powerful policies useful in decongestion process, expand size of the terminals, increase/widen roads to reduce truck traffics toward and from the port, use of appointment systems for ship arrival and departure, privatization of container handling processes and increase efficiency of the railway shipping system. The instruments had a 5-point Likert-scale and reliability check of the instruments revealed a Cronbach alpha of 0.805, which shows that the measure was reliable.

Factor hinder decongestion strategy; the variables used were inefficiency of road and railway systems, infrastructures' shape, lack of enough space, inadequacy of staffs, lack of capital, low technology and weak regulatory framework. The instruments had a 5-point Likert-scale and reliability check of the instruments revealed a Cronbach alpha of 0.746, which shows that the measure was reliable.

Table 3.2: Cronbach's Alpha Coefficient

Variables	**N of Items**	**Cronbach's Alpha Coefficient**
Cause of decongestion	6	0.759
Effects resulted from decongestion	6	0.788
Strategies for decongestion	13	0.805
Factor hinder decongestion strategy	7	0.746
Reliability of the Questioner	32	0.908

Source: Field Data (2014)

CHAPTER FOUR

4.0 DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 Introduction

The previous chapter three explains the designed methodology in this research, plus key elements in data collection and analysis as well as validity and reliability of the study. This chapter presents the results of the study based on the completed questionnaires and interviews with users and officers of Dar es Salaam sea port. The data of all the respondents to the interview were compared to give better understanding of decongestion strategies at Dar es Salaam seaport. The chapter had two sections, in which section one presented demographic characteristics of the respondents and section two presents results of the study.

4.2 Respondents Demography

The results that follow show the background of the respondents. Cross tabulations were used for presentation of background of respondents. The respondents' backgrounds include gender, age, level of education, and experience in terms of years of dealing with Dar es Salaam seaport. For the purpose of collection of primary data, a total of forty three (43) respondents were sampled where by twenty seven (27) were private port user and clearing and freight forwarders while sixteen (16) were Officers of Dar es salaam seaport comprise of both managers and receiving agents. The results from the cross tabulation was presented as follows:-

4.2.1 Gender Distribution of Respondents

The results in the table 4.1 below were generated using Cross tabulation test in order

to explore the distribution of gender of respondents. The reason why the gender of the respondents was recorded was to show that respondents came from both sexes.

Table 4.1 Gender of Respondents by Category of Respondents

			Respondents' Category			Total
			Private Port User	**Clearing and Freight Forwarder**	**Officer of Dar es Salaam Seaport**	
Gender of respondents	Male	Count	12	14	13	39
		% within respondents' category	100.0%	93.3%	81.2%	90.7%
		% of Total	27.9%	32.6%	30.2%	90.7%
	Female	Count	0	1	3	4
		% within respondents' category	.0%	6.7%	18.8%	9.3%
		% of Total	.0%	2.3%	7.0%	9.3%
Total		Count	12	15	16	43
		% within respondents' category	100.0%	100.0%	100.0%	100.0%
		% of Total	27.9%	34.9%	37.2%	100.0%

Source: Field Result (2014)

The result shows that in all the visited Category of respondents, the majority of the respondents were males than women, where by male respondents among private port user were 100%,clearingand freight forward agents were93.3% and among responding officer of Dar es Salaam seaport were 81.2%. In general, total number of responding male was 90.7% of all respondents, while the female respondents were 9.3%. It can be assumed that male gender participates much in seaport issues compare to the female gender. However, since in the study there were both male and female respondents; implies that the results of the study came from both genders.

4.2.2 Age Group Distribution of Respondents

The results in the table 4.2 below were generated using Cross tabulation in order to explore the distribution of age of respondents by categories of respondents.

Table 4.2: Age Group of Respondents by Category of Respondents

			Respondents' category			
			private port user	Clearing and freight forwarder	Officer of Dar es Salaam seaport	Total
Age group of respondent	20-29 years	Count	7	11	4	22
		% within Respondents' category	58.3%	73.3%	25.0%	51.2%
		% of Total	16.3%	25.6%	9.3%	51.2%
	30-39 years	Count	3	2	5	10
		% within Respondents' category	25.0%	13.3%	31.2%	23.3%
		% of Total	7.0%	4.7%	11.6%	23.3%
	40-49 years	Count	2	2	6	10
		% within Respondents' category	16.7%	13.3%	37.5%	23.3%
		% of Total	4.7%	4.7%	14.0%	23.3%
	50 and above years	Count	0	0	1	1
		% within Respondents' category	.0%	.0%	6.2%	2.3%
		% of Total	.0%	.0%	2.3%	2.3%
Total		Count	12	15	16	43
		% within Respondents' category	100.0%	100.0%	100.0%	100.0%
		% of Total	27.9%	34.9%	37.2%	100.0%

Source: Field Result (2014)

The results on table 4.2 above show more than half of both private (58.3%) and clearing and freight forwarders (73.3%) was people of age 20-29 years, followed by

those who were at the age of 30-39 years old whereby private port used of this age group were accounted for 25% while clearing and freight forwarders at this age group were accounted for 13.3%. Their number gradually degree as the number of year increases. Concern with officers of responding Officers of Dar es Salaam seaport majority (37.5%) were at the age group of 40-49 years old followed by those of 30-39 (31.2%) age group and 20-29 (25%) age group. In general the majority (51.2%) of respondents was people of age between20-29, followed by those how were at the age of 30-39 (23.3%) and 40-49 (23.3%) these shows most of the respondents were youth group which is the group of people whose are power full and effectively involve in production. The next group was (2.3%) people of age group between 50 and above whose was few compared with youth group.

4.2.3 Education Distribution of Respondents

The results in the table 4.3 were generated using cross tabulation test in order to explore the distribution of the respondent categories by their level of education.

Demographic data continued with respondents' level of education as it shown in table 4.3 above. The table revealed that more than three quarters of responding private port users (80%), clearing and freight forwarders (90.9%) were holders of diploma qualifications. Followed by few of them who where holding bachelor degrees as shown in the table 4.3 above. On the other hand of responding officers of Dar es Salaam port management, majorities (43.8%) were holding bachelor degree, while 37.5% and 18.8% of these responding officers where holding master degree and diploma qualifications respectively. In general more than half (56.8%) of all

respondents were the holder of diploma qualification, follower the respondent those with bachelor degree who took 27.0% of all respondents and master degree who took 6.2% of all respondents. These results show that respondents were people with enough education and able to give objective answer by thinking and reasoning. Therefore, the results are valid and reliable.

Table 4.3: Education Qualification of Respondents by Category of Respondent

			Respondents' category			Total
			private port user	**Clearing and freight forwarder**	**Officer of Dar es Salaam seaport**	
Education of the respondents	Diploma	Count	8	10	3	21
		% within Respondents' category	80.0%	90.9%	18.8%	56.8%
		% of Total	21.6%	27.0%	8.1%	56.8%
	Bachelor	Count	2	1	7	10
		% within Respondents' category	20.0%	9.1%	43.8%	27.0%
		% of Total	5.4%	2.7%	18.9%	27.0%
	Master/ PGD	Count	0	0	6	6
		% within Respondents' category	.0%	.0%	37.5%	16.2%
		% of Total	.0%	.0%	16.2%	16.2%
Total		Count	10	11	16	37
		% within Respondents' category	100.0%	100.0%	100.0%	100.0 %
		% of Total	27.0%	29.7%	43.2%	100.0 %

Source: Field Data (2014)

4.2.4 Experience of Respondents

The analysis continued to analyze the experience of respondents in either working or using Dar es Salaam seaport in term of number of years. Therefore respondents

experience was explored using cross tabulation test and the results have been shown in the table 4.4 below.

Table 4.4: Experience of Respondents by Category of Respondents

			Respondents' category			
			private port user	**Clearing and freight forwarder**	**Officer of Dar es Salaam seaport**	**Total**
Period of dealing with Dar es Salam Seaport (working or using)	1-3 years	Count	6	10	7	23
		% within Respondents' category	50.0%	66.7%	43.8%	53.5%
		% of Total	14.0%	23.3%	16.3%	53.5%
	4-6 years	Count	3	2	1	6
		% within Respondents' category	25.0%	13.3%	6.2%	14.0%
		% of Total	7.0%	4.7%	2.3%	14.0%
	7-9 years	Count	2	2	1	5
		% within Respondents' category	16.7%	13.3%	6.2%	11.6%
		% of Total	4.7%	4.7%	2.3%	11.6%
	10 years and above	Count	1	1	7	9
		% within Respondents' category	8.3%	6.7%	43.8%	20.9%
		% of Total	2.3%	2.3%	16.3%	20.9%
Total		Count	12	15	16	43
		% within Respondents' category	100.0%	100.0%	100.0%	100.0%
		% of Total	27.9%	34.9%	37.2%	100.0%

Source: Field Data, (2014)

The table 4.4 above shows the results for working experience of respondents, where by the majority of respondents had an experience of 1-3 years (53.3%), followed by

20.9% with experience of 10 years and above, then 14% with experience of 6 - 4 years and lastly 11.6% with experience of 7-9 years. This results means that most of the respondent have enough experience with Dar es Salaam seaport, which implies that the results of the findings were drown from experience respondent. Also it implies that the data obtained can be considered to be reliable because they are from experienced people with the study site.

4.3 Empirical Data Analysis and Discussion

This section presents an analysis of the results of the study obtained from the primary data, as well as discussion observed during an interview, focus group discussion and document reviews. To start analysis and make the reader more aware of the discussion, a reader can go back to chapter one and review objectives of this study. During analysis stage researcher used descriptive statistic to calculate mean and standard deviations and Correlation analysis to show the relationship between variables.

4.3.1 Factors that contribute to the increased Congestion

The first objective of the study was to identify factors that contribute to the increased congestion at Tanzanian seaports with special emphasize in the Dar es Salaam seaport. Accordingly, six variables were prepared in the form of the short sentence and provided to the respondents to give their view rendered. The respondents were asked to rate their opinions in the five points Likert scale ranging from 1=strongly disagree, 2=disagree, 3=neither disagree nor agree, 4=agree and last 5= strongly agree. However, two types of analyses were conducted; correlation analysis to

establish relationship between variables. The variables used were as follow: lack of enough cargo handling equipment, lack of skilled man power, small size of the port, large number of the port users, poor port management, poor policy implementation at the port. The estimated coefficients were statistically different from zero variously at the 5% level of significance. The results of the table 4.5 below give the results of such correlation.

Table 4.5: Factors contribute to the increase of congestion -Correlations

		Lack of enough cargo handling equipments	Lack of skilled manpower	Small size of the port	Large number of the port users	Poor port management	Poor policy implementation
Lack of enough cargo handling equipments	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	43					
Lack of skilled manpower	Pearson Correlation	.342*	1				
	Sig. (2-tailed)	.025					
	N	43	43				
Small size of the port	Pearson Correlation	.150	.139	1			
	Sig. (2-tailed)	.339	.376				
	N	43	43	43			
Large number of the port users	Pearson Correlation	.071	.167	.645**	1		
	Sig. (2-tailed)	.651	.283	.000			
	N	43	43	43	43		
Poor port management	Pearson Correlation	.218	.399**	-.070	.107	1	
	Sig. (2-tailed)	.160	.008	.654	.494		
	N	43	43	43	43	43	
Poor policy implementation	Pearson Correlation	-.045	.391*	.102	.193	.631**	1
	Sig. (2-tailed)	.780	.012	.524	.227	.000	
	N	41	41	41	41	41	41

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed)

Source: Field Data (2014)

From the table 4.5 above it can be observed that lack of enough cargo handling equipments had correlation with lack of enough skilled manpower (p= 0.025) But no

significant correlation between lack of enough cargo handling equipment and small size of the port (p=0 .339), large number of the port users (p=0.651),poor port management (p=0.160), as well as poor policy implementation at the port (p=0.780).This means that respondents who accepted that lack of enough cargo handling equipment was the cause of congestion in seaport they also agree that lack of enough skilled manpower is among of the factor which cause congestion in Dar es salaam seaport but they disagreed that small size of the port, large number of the port users, poor port management and poor policy implementation to be among the factor which cause congestion in Dar es salaam seaport.

The result continued to show that lack of enough skilled manpower had strongly positive significant correlation with poor port management (p=0.008) as well as poor policy implementation (p= 0.012). But it had no significant correlation with small size of the port (p=0.376) and large number of the port users (p=0.283). Therefore those who believed that lack of enough skilled manpower was one of the factors which cause congestion in Dar es Salaam seaport they were also agreed that poor port management and poor policy implementation were among the factors which causes congestion. But they did not accept that small size of the port and large number of the port users as the causes of congestion in the seaport under review.

Furthermore, results continued to show that small size of the port had strongly positive significant correlation with a large number of the port users (p=0.000). But it had no significant correlation with poor port management (p=0.654) as well as poor policy implementation (p=0.524). This demonstrated that respondents who said the

small size of the port is the factor which cause congestion in seaport they also accepted that a large number of the port users as among of the factor which cause congestion in a seaport. But they did not agree that poor port management and poor policy implementations at the port were also the causes of congestion in a seaport. In addition, with the same interpretation and meanings poor port management had strongly positive significant correlation with poor policy implementation (p=0.000).

Therefore, according to the result and explanation above it has been understood that all variable has a positive correlation and it can be concluded that poor policy implementation at the port, poor port management, small size of the port, lack of enough skilled manpower, lack of enough cargo handling equipments and large number of port users are the main causes of congestion in Dar es salaam seaport.

It was also reported that congestion at the port was contributed by long proceeds of clearing cargos at the port/ long bureaucratic system as well as corruption and other miss conducts. One of responding private port user said that “if client doesn’t know anyone in the shipment organizations to get his/her cargo it will take long process and days, and added that some port workers do not do their work as it’s needed until client/customer, give them some money which is not part of the contract; meaning corruption or bribe”. Congestion at this port was also connected to the increase of the shipping size following globalization of trade and marine transportation nodes in relation to inadequate port facilities such as inappropriate cargo handling equipment’s, the inefficiencies of the land side transport which cause some works at the seaport to stop.

In the study it was also reported that problems in operation and maintenance of port facilities were among of the causes of congestion where by one or responding port officer put it that lack of finance for buying modern handling equipment, lack of inland or port warehousing facility cause cargo to remain for long time in the port transit facility. The absence of proper maintenance of equipment, lack of adequate stock of spare part and insufficient of standardization of equipment type were widely mentioned. Both of these cause the problem of congestion to continue to grow each year. While chatting with one of experienced clearing and freight forwarder, it was further noted that lack of qualified maintenance personal, lack of training dockworkers, insufficient deployment of labours, poor labour relation and inadequate technology with poor tools and equipment are the major factor which cause congestion in almost all see ports in the country.

These finding related with some part of the findings of Mark (2005) who conducted the study in Ghana and found that poor management, inappropriate policy and clearing procedure in the sea port are midst of the factors which contribute congestion in the sea ports. Appointments of the personnel without appropriate qualification and inappropriate polices have also been reported to affect performance of many ports in developing countries by (Cullinane and Wilmsmeier, 2011).

The congestion problem due to the size of the port can be connected to the fact that while a number of the port users are increasing day after days, the size of the port remaining the same. This leads to the lack of sufficient container storage space. The study argued that world container trade is driven in the first instance by the growth of

output and of consumption. Chioma (2011) reported that growth in world container handling activity grow at double-digit rates after every two years as shown in the table 4.6 below. This situation has put existing port facilities under a considerable strain; therefore, it calls for the expansions of existence port size at and equivalent increase of container handling activities.

Table 4.6: Container Activity by Region ('000 TEU of Port Handling, Including Empties and Transshipment)

REGION	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
North America	22,160	22,813	24,935	26,401	28,454	30,824	31,212	34,212	37,469	40,357
Western Europe	32,016	35,304	40,136	44,381	47,236	51,707	52,805	57,350	62,702	69,467
North Europe	21,562	23,172	25,689	27,331	29,300	31,661	31,991	34,403	37,337	41,301
South. Europe	10,454	12,131	14,447	17,049	17,935	20,047	20,814	22,947	25,365	28,166
Far East	41,178	44,899	48,999	52,192	60,697	71,096	75,126	87,541	103,285	121,254
South East Asia	20,975	23,353	26,119	28,020	30,227	34,320	36,906	41,105	45,436	52,112
Mid East	6,703	7,243	8,050	8,849	10,060	11,092	12,328	13,642	16,125	19,378
Latin America	10,015	10,893	12,961	15,112	16,222	17,802	18,793	19,212	21,313	24,569
Carib/C.Am	5,319	5,852	6,794	8,206	9,127	9,925	10,371	10,464	11,493	12,472
South America	4,697	5,041	6,167	6,907	7,095	7,877	8,422	8,749	9,820	12,097
Oceania	3,397	3,583	3,870	4,155	4,657	5,019	5,312	6,023	6,483	7,037
South Asia	3,231	3,824	4,365	4,661	5,077	5,481	5,830	6,586	7,158	7,646
Africa	4,670	5,049	5,592	5,707	6,360	7,150	7,613	8,454	9,661	11,271
Eastern Europe	797	908	959	978	955	1,080	1,438	1,726	2,076	2,523
WORLD	145,142	157,868	175,986	190,456	209,944	235,571	247,364	275,850	311,709	355,612

Source: Secondary Data, (2014)

From the table 4.6 above it can be obviously seen that from 2001 to 2010 the volume of container handling in each region has been linearly increased from year to year. In Africa container activities in the year 2001 was 4,670,000 TEU but kept increasing year after year without any slightly decrease p to 11,271,000 TEU in the year 2010 which is almost three fold of what have been observed in the year 2001 in the region.

So that, management of Dar es Salaam sea port should know that the volume of container traffic continue and will continue to rise.

Poor port management was also found to be a factor contributed to the congestion at the seaport. It was revealed that management of Dar es Salaam sea port is poor because of interference from the politicians who encroaches autonomy of the port officers hence interfere with strategies implemented for the performance of the port-which are legging decongestion at the port.

Finally, the study argued that factors that contributed to the congestion at this port and other seaports in Tanzania are many and there is a serious need for some strategies to be putted in front in order to reduce these challenges. As the result, seaports in Tanzania can be able to compete with other seaports in Africa and the world at large as well as increasing its profitability.

4.3.2 Effects of Congestion at Tanzania Seaports

In this section the study examined the effects of congestion at the seaport. The questions were structured in the Likert scale with five Likert scale points ranging from strongly disagree to the strongly agree with the neutral point of neither disagree nor agree and presented to the respondents. There were six variables analyzed to assess the effect of cargo congestion at the visited port. And these were: congestion at the port has caused loss of working time, congestion at the port has caused loss of clients cargoes/parcels, congestion at the port has caused loss of revenue, congestion at the port has caused delay of ship turn round time, congestion at the port has caused

ship traffic, congestion at the port has caused diversion of the cargoes from Dar es salaam seaport to other ports.

Descriptive analysis was used to calculate mean and standard deviation to explain the results of this objective. It must be noted that the mean is the average value of response for each item on the Likert scale. This is simply the sum of the values divided by the number of values. The implication is that the item with the highest mean is the one which most of respondents chose or rated highly and vice versa.

Standard deviation is however a measure of variation. This uses all the observations, and is defined in terms of the deviation (xi-μ) of the observations from the mean, since the variation is small if the observations are bunched closely about their mean, and large if they are scattered over considerable distances. This means an item on the Likert scale with the smallest standard deviation implies that respondents gave a similar answer to that item compared with the others. On the other hand an item with the biggest standard deviation is one that respondents gave varying (different) answers.

The response modes on these variables in collection of data were (1) strongly disagree, (2) disagree, (3) neither disagree nor agree, (4) agree, (5) and strong agree (5). In the same line interpretation of analyzed data was (1) no extent, (2) small extent, (3) some extent, (4) large extent, (5) Very large extent. Table 4.7 below gives the results.

Table 4.7: Effects of Congestion at Tanzania Seaports

Effects observed	N	Mean	Std.
Congestion at the port has caused loss of income on the clients	42	4.07	.973
Congestion at the port has caused loss of working time on clients	42	3.74	1.061
Congestion at the port has caused ship traffic	41	3.61	1.262
Congestion at the port has caused delay of ship turn round time	43	3.60	1.218
Congestion at the port has caused diversion of cargoes from Dar es Salaam seaport to other ports	43	3.60	1.137
Congestion at the port has caused loss of client cargoes/parcels	42	3.45	1.152
Interpretation of Means			
4.01-5.00 Very large extent			
3.26-4.00 Large extent			
2.51-3.25 Some extent			
1.76-2.50 Small extent			
1.00-1.75 No extent			

Source: Field Data (2014)

The result from the table 4.7 above shows that the effect resulted from congestion at the port were loss of income to the clients' side which had the highest mean of 4.07, which was interpreted to be the problem occur at very large extent as the result of congestion at seaport. Followed by loss of client cargoes/parcels (mean=3.45), loss of working time to the clients' side (Mean=3.74), ship traffic which (Mean=3.61), Delay of ship turn round time (Mean=3.60) and lastly diversion of cargoes from Dar es Salaam seaport to other ports (mean=3.60). All these problems apart from loss of income on the clients' side (which was found to occur at very large extent) were occurred at large extent due to the cargo congestion at this port.

The interview with some port users noted that as the result of the congestion at the port potential users was unable to clear their goods/cargos on time once arrives at the port and therefore they were forced to pay some extra money for the storage facilities. One of the interviewees said that "when the cargo arrives it is usually given

a free storage of not more than three days for the owner to clear with all the payment and other paper works required for removing the cargo at the ports, and when the cargo exceed this grace period of three days the owner will have to pay for each extra day the cargo stays at the port, however much it is not his/her problem hence this cause the loss of income to the clients." Apart from that, the consequence of congestion at the port is also exhibit in the loose of the income following shortage of the stock in entrepreneurs' businesses together with loose of money in term of transport and working time trying to follow up their immovable cargoes at the port.

In the table 4.7 above it was shown that congestion in the visited sea port has caused loss of working time to the clients at the mean which was interpreted as the loss of working time was at the large extent. In discussing this theme the study argued that many port users were waiting for the long time before getting their cargo which was viewed as lost of profitable hours to the business people. One of the selected clearing and freight agents known by the name of Mr. Mwelele who operate shipping business along Indian Ocean highlighted that the time they use to clear cargo at the Dar es Salaam port was real too long compare to the timed used in other countries he normally visiting. And he also added that the time him and his fellow business people keep on waiting until they get their cargo at this port is the wastage of time that they would be doing other economic works to increase their profits and they also lost their income because of paying high storage charges resulting from cargo overstaying at the port.

It was suggestion of this study that a cargo sitting idle does not generate revenue to both port users/clients and management of the port, instead there are operating costs

incurred such as insurance, security, port charges, etc. Therefore, it constitutes a waiting line and waiting cost problems which intern goes back to the port users and/or to the last consumer of the product.

It was also discovered that at Dar es Salaam port there is serious ship traffic waiting to offload and others to load. Offloading or discharge speed was the one affected much with congestion compare to the loading speed. The lack of space to keep cargo was plainly observed, berths sometime could stop working and this was attributed to the lack of space to keep discharged cargos. Indeed this is the loss of revenue to the port management, users and government at large. The study argued that in order to know evidently how much money is lost due to the ship traffic and/or delay of ship turn round time caused by congestion at the port there is the need of conducting quantitative research to examine the magnitude of the this loss in term how much money is wasted. The study conducted by Humbag in the year 2005 in developing countries of Western Africa including Nigeria, Ghana and Liberia reported that due to the congestion at the ports ships were at anchorage/in port for between 8 and 10 days compared with an average 2/3 days in normal circumstances. According to him such delays were causing the loss of US$ 6,000 per 3 hours and costs as much as US$ 45,000 per day to operate and so another 6/8 days of non-productive time in port was a direct cost to the operator of US$ 360,000. In addition, ocean carriers were forced to sail ships at over service speed to try and cover up the lost time.

Congestion at the ports in Tanzania and other developing countries is the root cause of the poor performance of the port. One other strategies to increase performance of

our port is to ensure there is no congestion at the port that mean to ensure enough space to keep all arrived cargos and those waiting for departure at any time. This can be done though implementation of appropriate strategies and policies aimed at increasing the speed of taking cargos away from the port facility. It was ascertained that few years ago people (both management and port users) were complaining for having only one berth at Dar es Salaam sea port which could discharge one ship at a time-the presence of one berth was taken as the cause of severe performance problem the port was suffering by that time. Nevertheless, in the year 2012 two more and modern berths were constructed and since then the port can discharge three ships at once but still the earlier problems of ship traffics and delay of ship turn round time are still persisting. This can be attributed to the cargos congestion, whereby, in spite of increase discharging speed lack of proper methods and strategies of removing cargos from the port facility exterminate the initiatives of increasing offloading speed and the overall performance of the port.

In these days of globalization of trade shipping is the biggest business to keep business moving every corner and therefore many ships arrive at one port at the same time. As we have seen in the table 4.6, section 4.3.1 that all over the world container handling double every year; since Dar es Salaam port is small cannot tolerate the increase of cargos shipping and therefore, congestion become the result of this increase of cargos without increase of storage space, hence leading to the ship traffic. According to the TPA annual report of 2011/12 ship traffic had increased from 1899 (2008/09) to 3042 (2011/12) an average of 2% growth while Gross Tonnage (GRT) for the port increased by 3.5%. This increase in ship traffic as well as cargo imported

signifies that, the port needs substantial expansion/modernization to serve for all vessels (panama and post panama) which are increasingly in the shipping business.
It was argued that Dar es Salaam sea port is the biggest source of income in Tanzania base on the fact that there many countries both land locked and unlocked depend it. But the delay of cargos at the port as well as waste of time and money on the clients' side has cause many bulk transporters such as Multination Shipping Companies to shift to Mombasa seaport which has been perceived to be more active than Dar es Salaam port in term of ship turn round time, offloading of the cargos from the ship and from the port area. Thus, loss of revenues to the government as a result of diversion of cargoes from our seaports to other ports.

Shifting of port users to other ports in other countries had been also observed in Nigerian seaports which made Ogah (2010) to conduct a study on this area and holds the view that cargo diversion could be influenced by the congestion at the port among other things which made port users to get fade-up with Nigerian ports and shift to other nearby ports. According to him, most shipping firms were moving away to pitch tent in neighboring countries from where they are transshipping goods into Nigeria. Also, his study observed that Multinational Shipping Companies had built terminals in neighboring countries such as Republic of Benin, Togo, Cote d' Ivoire and Senegal where they could be offered better incentives in shipping business and they are now discharge Nigeria–bound cargoes for transshipment into the country.

In the data collection phase of this study it was reported that in the last decade there were many Rwandese and Congolese using Dar es Salaam seaport for their shipping

needs but in this decade their number has seriously reduced. This being the fact, the study afforded to enquire the reason from one of the Rwandese who was found at the port waiting to be given his vehicles he imported from Japan. By that time, according to him, the vehicles had spent six days at the port and did not know what exactly stuck them there. He said that for him Dar es Salaam seaport is the nearest seaport to his home (Kigali, Rwanda) for the reason that after getting his cargos cleared at the port the process of forwarding them to Kigali become very cheap and faster compare to the long bureaucratic and unsecured road transport from Mombasa seaport of Kenya to Kigali via Uganda land. But sometime the delay of the cargo at Dar es Salaam seaport force him to use Mombasa seaport where port activities are moving faster than in Dar es Salaam seaport. Additionally, from his words he said that "Dar es Salaam seaport is characterized by congestion and its charging high price which cause the customers to shift from using this port to other port."

There was also loss of cargoes/ parcels and the Dar es Salaam seaport which was connected to the increase of congestion. It was frequently reported that many cargo have been lost at the port after discharged from the vessel. The study found some port used sending their complaints to the port management over their lost cargoes. This be the case, the study tried to find out how management of the port handle such complaints and what are the strategies have been put in place to reduce if not to eliminated cargo loss at the port. It was found out that once someone has lost the cargo or parcel at the port; he/she is neither refunded by any one nor management of this port pays for the loss although it is the fault of management. The victims of the lost cargoes are only told to be calm while the management is looking for their

cargoes. Victims were again becoming sad of waiting for the period which they don't know when their cargoes would be-indeed there is no assurance of recovering your cargo once has got lost at this port.

Concern with the ways of preventing loss of cargoes at the port, the study found that TPA has introduced the system that called containerization that refers to the increasing and generalized use of the container as a support for freight transportation. It involves processes where the intermodal container is increasingly used because it either substitutes cargo from other conveyances. It was reported that the usage of containers shows the complementarily between freight transportation modes by offering a higher fluidity to movements and a standardization of loads. It was added that introduction of containerized system has managed to address many theft activities because of the freight anonymity a container confers, therefore, loss of clients cargo it remains an issue for movements outside terminals where the contents of the container can be assessed based upon its final destination-this means that container is not allowed to be opened until reaches its final destination. Surprisingly, even with this containerized system clients are still losing their containers. From documentation of various reports concerning marine nodes transportation in Tanzania, it is estimated that about 10,000 containers with cargoes inside per year (27 per day) are lost at seaports of Tanzania.

In conclusion, the study argued that the effects of congestion at Tanzania seaports are connected to the low economic performance to the port users and the whole country at large. At the port level they have contributed to the reduced competitive

advantages of the port in the international market. To expand further the scope of the problems it was also mentioned that because of the delay in getting cargo moved away from the port, the whole distribution network or supply chain in the country has been disorganized hence slow production.

4.3.3 Decongestion strategies

Third specific objective was to identify some of the decongestion strategies implemented by Tanzania seaports managements. The variables used to understand the decongestion strategies were expand size of the terminals, adaptation of new technologies in cargo handling process, increase efficiency of the railway shipping system, reduce bureaucracy in clearing process, increase of skilled staffs, monitoring transit, increase efficiency or speed of the crane, privatization of container handling processes, maximize loading capacity of truck and ships, use of higher information management systems, formation of powerful policies useful in decongestion process, increase/widen roads to reduce truck traffics toward and from the port and use of appointment systems for ship arrival and departure. All these variables/constructs were used because have been reported to be used by highly competitive seaports in the world such as American and European seaports, Indian, Bangladesh and Chinese seaports to increase cargo shipping in both marine and inland nodes. Therefore, this study wanted to know if these strategies have also been used and the extent to which have been implemented in the seaport under question.

Responding port officers were given questionnaires with five Likert points ranging from (1) never, (2) very rarely, (3) rarely, (4) frequently and (5) very frequently a

given strategy have been used in this seaport. In reaching to the conclusion of this objective descriptive analysis was used to calculate arithmetic mean and standard deviation, whereby in interpretation of the results the highest mean is the most frequently strategy used by this port for the decongestion processes. In other words, it is the strategy that have been implemented at very large extent by management of Dar es Salaam seaport, and hence in all seaports in the country at large. While the strategy with very lowest mean is interpreted as strategy that is either not used at all or used very rarely in the process of dealing with reduction of congestion at this port.

Table 4.8: Decongestion Strategies

Decongestion Variables	N	Mean	Std.	Rank
Adaptation of new technologies in cargo handling process	15	4.00	.655	1
Increase of skilled staffs	15	2.87	.990	2
Monitoring transit	15	2.80	1.082	3
Increase efficiency or speed of the crane	15	2.73	.884	4
Maximize loading capacity of truck and ships	15	2.67	.900	5
Reduce bureaucracy in clearing process	16	2.62	.957	6
Use of higher information management systems	15	2.60	.910	7
Formation of powerful policies useful in decongestion process	14	2.57	.938	8
Expand size of the terminals	15	2.47	.990	9
Increase/widen roads to reduce truck traffics toward and from the port	15	2.47	1.246	10
Use of appointment systems for ship arrival and departure	16	2.44	1.315	11
Privatization of container handling processes	15	2.33	1.234	12
Increase efficiency of the railway shipping system	15	1.87	1.187	13
AVERAGE MEAN		2.64		

Interpretation of the Mean

4.01-5.00	Very large extent
3.26-4.00	Large extent
2.51-3.25	Some extent
1.76-2.50	Small extent
1.00-1.75	No extent

Source: Field Data (2014)

Therefore, the results in the table 4.8 below were generated using the SPSS software program in order to identify some of the strategies implemented by the Dar es

Salaam seaport management in trimming down congestion and its effects at the seaport.

The result of the table 4.8 above shows that with exception of adapting new technologies in cargo handling process which was found to be implemented at "large extent" the remaining strategies of dealing with congestion at the port were implemented at either "small extent" or "some extent." The general result show that the mentioned strategies have been implemented at "some extent" in this port, the calculated average mean was 2.64 interpreted as some extent. Statistically the results show that adaptation of new technologies in cargo handling process (Mean 4.00) was the number one strategy used by this port, followed by (in the order of priority) increase of skilled staffs (Mean 2.87), monitoring transit (Mean 2.80), increase efficiency or speed of the crane (Mean 2.73), maximize loading capacity of truck and ships (Mean 2.67), reduce bureaucracy in clearing process (Mean 2.62), use of higher information management systems(Mean 2.60) and formation of powerful policies useful in decongestion process (Mean 2.57).

These were rated to be used rarely and therefore, interpreted as the decongestion strategies implemented at "some extent.'' The remaining strategies were rated by responding port officers to be used very rarely and accordingly, they were interpreted as the strategies implemented at small extent. There are expand size of the terminals (Mean 2.47), increase/widen roads to reduce truck traffics toward and from the port (Mean 2.47), use of appointment systems for ship arrival and departure (Mean 2.44) and privatization of container handling processes (Mean 2.33) However, according

to the result of the analysis above the strategy that was shown to be the least implemented by management of this seaport in dealing with congestion was increasing efficiency of the railway shipping system (Mean 2.87).

In this study it was argued that the adaptation of new technologies in cargo handling seem to be number one strategy employed by management of Dar es Salaam seaport because of the recently new two berth and other new and modern machines like modern folk lifts and cranes that work fast and bring efficiency in the cargo handling services. In the fiscal year 2011/2012 TPA disposed several cargo handling machines and other related machines used in the seaport following their outdation and extensive loose of their efficiency. The liquidation of these old machines went together with procuring of new and faster working machines that suit the increase of container handling activities at the port. However, other machines which were not there before were purchased at this time. Therefore, concerning weak equipment for handling cargos at this port is no longer an issue; except the way these machines are operated and managed. It was acknowledged by one of the port manager that the new machines have helped to reduce the heavy work load in handling of the cargos.

However, being an independent institution TPA has got the chance of hiring some skilled labours than previous time, these skilled workers are believed to be competent and knowledgeable in shipping and logistic sector. It was asserted that this has helped to some extent in reducing the problem of disorganized cargos at the port as well as loss of clients' cargos at the port. The skilled worker also are accounted for the increase of port users from Congo, Malawi and Zambia, they are seemed to be

quick to respond and approachable by international shippers. Moreover, they are the source of new strategies and policies on how to deal with hardship port matters especially those relating to the performance of decongestion, safety of the customers' cargos and ship turnaround time.

It was also argued that as the ways of getting rid of problem of congestion, the seaport management also at some extent have been actively involves in monitoring ship transit. The sailors are informed on the proper time to arrive at Dar es Salaam seaport so that the cargo receiving agents at the port can get enough time to handle one ship by one at a time.

Also if the ship has carried a heavy/ huge luggage which cannot be accommodated by internodes transport the sailor and owner of the luggage are informed prior to arrive at the port since because arriving of such huge luggage can bring problem of congestion base on the fact that there will be no way to get it away from the port to upcountry. On the other hand, management of this port has been also actively monitor truck to and fro the port through establishment of proper system of calling trucks in to the port area, loading trucks at container deport and finally leave them go of the port without interfere with those entering or loading cargo at port.

Although, it was mentioned to be used rarely but it was argued that at some extent increase efficiency or speed of the cranes has also been used in dealing with congestion reduction at this port. It was argued that the slightly speed increase of cranes is the results of buying the new cranes, which in turn, slightly speed increase

of loading cargos in the trucks for transshipping. The study continued that maximizing loading capacity of truck and ships has been another strategy used rarely or implemented at some extent to help in reducing congestion at the port.

In the discussion with some experts in this field of shipping it was obtained that if Dar es Salaam seaport properly observes and considers maximization of loading capacity of the truck entering in the port to pick cargos it will obviously help to reduce big tones of cargos at the port. This can be done by putting some policies governing minimum loading capacity of the truck allowed to enter in the port area. This can be exemplified by the removal of the small public buses, renowned as Daladala or Vipanya, in the city of Dar es Salaam on the ground that they were the cause of the road traffic jam in the city and allow only big buses that carry many passengers at once. Therefore, maximizing loading capacity of the trucks will help to reduce number of the trucks entering the port meanwhile give space to other trucks to turn easily and others to park

Reduce bureaucracy in clearing process has also been rarely used as the strategy of reducing congestion at the port. This was done through delegation of powers to different people (from the top management) in order to reduce number of stages clients have to path through to get permission/endorse to pick their cargo from the port. The study argued that reduction of bureaucracy should not be there only at the time cargos are congested at the port it should be leg of the strategies in cargo handling cargos at the port, this will attract many Multination Shipping Companies to use Dar es Salam seaport in East Africa.

4.3.4 Factors hindering implementation of the decongestion strategies

The last specific objective of the study was to investigate factors hindering implementation of the decongestion strategies in this port. The main variables used were inefficiency of road and railway systems, inadequacy of staffs, lack of capital, weak regulatory framework, infrastructures' shape, low technology and lack of space.

The response modes for the questions for these variables were also structured in to five Likert scales ranging from (1) strongly disagree to the (5) strongly agree with the middle point of (3) neither disagree nor agree. Descriptive analysis was used to calculate statistical results of these variables in term of mean and standard deviations. The value of mean was used to rank the variables in their order of importance, state from most important to the less important. The clear results have been given in table 4. 9 below, in which, the highest mean is the most factors that hinder implementation of decongestion strategy in this seaport and the variable with lowest mean is interpreted as either less or not important hindering factors in implementation of decongestion strategies.

The result of the table 4.9 above shows the factors hindering implementation of the decongestion strategies at Dar es Salaam seaport, where by, inefficiency of road and railway system (Mean 4.20) has been found to be the mostly important hindering factors, followed by shape of infrastructure or port (Mean 3.80) and lack of space (Mean 3.66). These two factors were found to hinder much or to be important hindering factors in the implementation of decongestion strategies at the port.

Table 4.9: Factor Hindering Implementation of the Decongestion Strategies

Variable	N	Mean	Std.	Rank
Inefficiency of road and railway systems	15	4.20	.845	1
Infrastructures' shape	15	3.80	.861	2
Lack of enough space	15	3.66	.899	3
Inadequacy of staffs	16	3.25	1.064	4
Lack of capital	15	2.87	1.125	5
Low Technology	16	2.86	1.024	6
Weak regulatory framework	15	2.66	1.175	7
AVERAGE MEAN	3.32			

Interpretation of the Mean

4.01-5.00	hinder very much / mostly important hindering factor
3.26-4.00	hinder much / important hindering factor
2.51-3.25	hinder little / moderate important hindering factor
1.76-2.50	hinder very little / less important hindering factor
1.00-1.75	No hindrance at all / not important hindering factor

Source: Field Data, (2014)

The remaining factors: inadequacy of staffs (Mean 3.25), lack of capita (Mean 2.86), lack of technology (Mean 2.86) and weak regulatory framework (Mean 2.66) were found to be moderate important hindering factors or to have little hindrance power in implementation of decongestion strategies. In general, all seven analyzed variables have been found to be important hindering factors in the implementation of decongestion strategies, mean of the means or average mean obtained is 3.32 interpreted as important hindering factors.

The results of this subsection are somehow similar to the results of the subsection 4.3.3 where by the results in table 4.9 shown that increase efficiency of the railway system was the list or not among the strategies used by Dar es Salaam seaport to reduce congestion at the port. Likewise the table 4.10 revealed that inefficiency of road and railway systems has mostly been hindering the implementation of

decongestion strategy in the seaport. It was argued, due to the fact that the management of the seaport is not mandated to manage efficacy of roads and railway, therefore, it remain the challenges to the port management toward implementation of appropriate methods or enter and exit to the port area. It should be known that performance of the seaport is also highly depending on the arrangement of road and railway network in both nearby and away from the port. Non performing railway and road network reduce the speed of shipping cargos from the port to the destination and from upcountry to the port, hence, weak internodes connectivity. Additionally, performance of roads and railways are monitored by Tanzania Roads Authority and Tanzania Railways Authority in which Tanzania Ports Authority has no control.

The study further argued that the railway systems of Tanzania are not effective in discharging cargos from the seaport to the upcountry because of regular railway officers' strikes over their salaries and allowances coupled with weak and old railway network which was constructed more than fifty years back during the era of colonialism. In this year of 2014 workers of Tanzania and Zambia Railway Authority (TAZARA) stopped working for the one month and few days; from February to mid March trying to pressure the two governments of Tanzania and Zambia to pay billions of money owe by TAZARA. However, several timed railways have been head to stop working because of the flood problems resulting from poor and outdated railways infrastructure, especially in Kilosa region large part of the land is wetland and railways from the seaport path this region except for the one which free northern regions of Kilimanjaro and Arusha. So, at the time when railway system is not working shippers are forced to use road transport which is also not well established

to handle all cargo transportation needs and it is also expensive compare to the railway transport.

The researcher afforded to visit some truck drivers who were lining up along the roads heading to this seaport and enquire from them things concern with the roads heading to this port. Actually, majority of them shown not to be satisfied with the narrow and few roads which always are congested with private and public vehicles. They also suggested for the construction of trucks' roads separately from the public transport roads together with widen existing roads. This has also been affirmed by Barnes (2005) who conducted his study in Guinea stressed that poor planning and poor means of land transport are the most obstacles in decongestion process of the seaports. Whereby inadequate of inland transport both in capacity and efficiency, fairly to keep traffic forecast update to reflect the changes in the pace in major economic and improvement by rebuilding new means of land transportation were the cause of feeble marine transportation nodes in Guinea. In view of that, this study suggested that further studies should be carried out while examining intently contribution of existing road and railway networks in the performance of internodes cargo transportation.

Shape of Dar es Salaam seaport was also said not to allow expansion of port and hence proper implementation of decongestion strategies. It was said that this port is located at shallow water and therefore expansion of the port towards the sea water in not easy (need a lot of money and high level of technology) compare to the port located at the deep water. As the result of this, the government of Tanzania has

planned for the construction of modern seaport at Bagamoyo where the depth of seawater is too deep. According to Kojo (2012), function location of the seaport is the most important factor in the shipping performance. Kojo (*ibid*) added that urban developments' activities make impossible for many ports in development countries to develop. Contraction of new buildings without back up areas for port expansion and activities carried out in and around the port areas which do not relate to the shipping and cargo handling process tend to minimize the space for carrying out shipping activities, as the result, affected performance of seaports in many developing countries.

The study agreed with the fact the lack of the space to expand the port was another important factor that hinders decongestion strategies at the port. If we go back to the subsection 4.3.1 of this study, it was found that small size of the port was claimed to contribute to the congestion o cargos, this means cargo arrive at this port are many compare to the size of the port to accommodate them. However, in subsection 4.3.2 it was also found that expansion of the port size was among the least decongestion strategies used by the Dar es Salaam seaport. The reason behind all these findings was lack of the space to expand size of the port. However, of recently TPA has bought some land in Mivingeni (fifty hundred acres) and Kisarawe (one hundred acres) with the aim of establish dry ports which will leg decongestion process at the port in the future. But all these acres of land have been said not to be enough base on the rapid expansion of marine transportation business. Lack of space also has impact on the inadequacy of staff at the seaport. It was argued that although, TPA has try to increase staff in this ports but they are not enough to carter for all the clients' needs

and it cannot hire more staff because the port size is too small for construction of more offices, therefore, not enough space to accommodate new staff, hence low number of staff important challenges in implementation of decongestion strategies.

Lack of capital is also another factor that hinders the decongestion strategies to be fully implemented at some extent. This is because it was found to have moderate hindrance power in decongestion strategies. It was said that TPA has run short of money to secure more land for expansion of the seaports especially Dar es Salaam port which is the administrator of other water ports in the country. Apart from having new and high speed machine (cranes, forklifts and so on) but still there is the need of buying more automated machines for auto operation of port activities which are too expensive and port management does not have enough capital to invest in such improved technology. It is believed that auto operation of port activities once adopted will highly reduce theft and cargo breakage scenarios at the port, increase speed of loading and offloading cargos at the port, simplify the clearing procedures by making it free from corruption and bribes tricks and eventually maximize the speed of service delivery. In the literature review of this study it was mentioned by several author that among of the factors hinder renovation of shipping industry is the financial constraints and lack of cooperation by some stakeholders in the shipping industry.

One of the interviewed port officer highlighted that somehow Dar es Salaam seaport have established the uses of technological machines however they are not enough to deal with highly increased cargo handling in this port. And he added that also not all officers have knowledge on the technological machines that have been established

hence congestion problem has not been highly addressed with the existing level of technology established in this port. On the other hand, TPA have introduced on line system for the port used to clear and make payments for the port use but due to the low knowledge and fear of using electronic business (e-commerce) most of port user do not use the system which is believed by port officers to be effective and helpful in reducing the work load at the port. Hence cause inefficiency of the clearance process which in turn, challenges implementation of decongestion strategies. Kironde (2008) also reported that inefficiency of the clearance process and poor infrastructure are the most factors which cause congestion at Dar es Salaam port.

Lastly weak regulatory framework has also hindered the decongestion strategy to the small extent. As we have seen in first objective the sea port has poor policy implementation so because of this it has cause weak regulatory framework that cannot help the decongestion strategy to be implemented fully.

In conclusion decongestion strategy at Dar es Salaam seaport have been hindered by different factors the major one are inefficiency of road and railway systems, shape of the port and lack of enough space in that order of important; followed by inadequacy of staffs, lack of capital, low technology and weak regulatory framework in the same order of important. All this constraints need to be addressed for the proper implementation of decongestion strategies which were found to be implemented at some small extent.

CHAPTER FIVE

5.0 SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter looks at the main findings presented in chapter four by relating them to the objectives of the study, and also reflects on the methodologies used to obtain and analyze data. From the findings, conclusions are drawn and recommendations are made. The chapter ends with identifying an area for further research.

5.2 Summary and Conclusion of the Study

Marine cargo sizes tend to fluctuate due to the changes in customer demands and changes in the worldwide economies. This led to the reaction of increasing cargo volumes which lead to congestion in many seaports in the world include Dar es Salaam seaport. The intention of the study was to analyze the in land container depots and container freight services decongestion strategies in Tanzania Ports Authority (TPA). Accordingly the study posed four research questions relating to the objectives of the study to be answered. The questions are: What are the factors that contribute to the increase of congestion at Tanzanian seaports?, What are the effects resulted with congestion at Tanzania seaports?, What are the decongestion strategies implemented by Tanzania seaport managements? And what are the factors hindering implementation of these decongestion strategies?

First, using a correlation analysis the study found out that the factors that contribute to the increase of congestion at Dar es Salaam seaport were lack of enough cargo

handling equipments, small size of the port, large number of port users, poor port management and poor policy implementations. Also, other factors such as rapidly increasing trade, increases in ship size in relation to port facilities, the inefficiencies of the land side transport and sometimes the climate changes and lack of enough skilled manpower are also factors that cause congestion at the Dar es Salaam seaport. Second, concerning with the effects resulted with congestion at Dar es Salaam seaports. The study found that congestion has cause the following effects to both port users and management of the port: loss of working time, cargos/parcels and income to the clients, ship traffic, delay of ship turn round time and lastly diversion of cargoes from Dar es Salaam seaport to other ports especially Mombasa seaport. Therefore, it was argued that the problem of congestion at the seaport has caused great losses not only to the port users and management of the port but also to the whole government since government has lost revenue from these unutilized hours (time lost) by entrepreneurs who are tax payers.

Thirdly, with the help of descriptive analysis the study found out that adaptation of new technologies in cargo handling process was only strategy which used at large extent or fully implemented, other strategies which were implemented at some extent or used rarely, in order of their priority, were increase of skilled staffs, monitoring transit, increase efficiency or speed of the crane, maximize loading, capacity of truck and ships, reduce bureaucracy in clearing process, use of higher information management systems and formation of powerful policies useful in decongestion process the rest of strategies were found either implemented very rarely or not to be implemented. In general decongestion strategies have been not fully implemented by

Tanzania seaport management. The average mean obtained was 2.64 interpreted as decongestion strategies have been implemented at some extent and not fully.

Finally, it was obtained that the factors that hinders the implementations of the decongestion strategies were inefficiency of road and railway system, followed by shape of port and lack of space. These two factors were found to hinder much or to be important hindering factors in the implementation of decongestion strategies at the port. The other factors; inadequacy of staffs, lack of capita, lack of technology and weak regulatory framework were found to be moderate important hindering factors or to have little hindrance power in implementation of decongestion strategies. In general, all these variables have been found to be important hindering factors in the implementation of decongestion strategies, average mean obtained was 3.32 interpreted as important hindering factors.

5.3 Recommendation

Recommendations have been made about measures that could be taken to improve the practice and operation of seaport decongestion strategies

- Government should assist in building and improvement some infrastructure which will meet current developments and technological changes in the shipping industry like building of better road which will be used by the rapid moving trucks to and fro the seaport to reduce congestion. Also by providing land to construct other terminals which will facilitate easily tress of cargo and reduce congestion in the recent terminal.
- Management of the port should consider that to overcome congestion there must be improvements in port operations, application of new technology and efficient

use of more automated machine in order to reduce risks like theft and breakage of cargos.

- Better management of the rail port interface is required together with the purchase of additional rolling stock and cargo handling equipment and relocation of rail tracks to the back of the seaport to reduce traffic circulation pattern.
- Also TPA should recruit new employee with consideration of qualification, modify work shifts and delivery schedules. These options will vary on the units depending on abilities to operate during morning, afternoon and evening periods which will help to manage many customers at any time. This will not only help on the discharge of cargos but also to avoid problem of customer loss their cargo or loss of anything.
- However Tanzania port authority should make substantial reforms and upgrading their operation, management system, and information and communications system so as to reach international standards and to meet the demands of a growing and increasingly marine international trade. This process will led shippers and agents to reduce loss of capital, unnecessary cost and time clearing their cargo from the port.
- Lastly, the study suggested that TPA should be unwavering in its commitment to develop innovative solutions that will engender competitiveness for the shipper in Tanzania and ultimately realize its vision of becoming a world class service organization that ensures (for shippers in Tanzania) quick, safe and reliable service delivery at friendly cost. This can be attained through fighting corruption and bribes in the institution as well as putting institution away from political muscles.

5.4 Research Directions

Future research needs to expand the scope of the study by considering other seaports in Tanzania such as Tanga, Lindi and Mtwara seaports. However, there is the need of conducting another study on the ways to technique ways of mitigate congestion at the seaports in Tanzania rather than assessing the efficacy of existing one.

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APPENDICES

APPENDIX I: Questionnaire to the Staffs of Dar es Salaam seaport

Introduction

The aim of this questionnaire is to assess decongestion strategies used in inland container depots (ICDs) and container freight services (CFSs) so that to develop a framework for improving shipping movement at Tanzania sea ports. Your response to this Questionnaire will serve as source of information to the research paper to be done for dissertation purpose. Any response you provide here is strictly confidential and will be used exclusively for the research purpose. Your honesty in responding the right answer is vital for the research outcome to be reliable.

Questionnaire No. _____ Date: _____

SECTION A: Profile of Respondents

1. What is your gender?

Male	Female

2. Select your age group.

20-29 years	30-39 years	40-49 years	50 and above

3. Select your highest academic or professional qualification? Select only one

diploma	Bachelor	Master/PGD	PHD

- Others (specify) _____

4. For how long have you been working with Dar es Salaam Seaport

1 -3years	4-6 years	7-9 years	10 years and above

5. What is your current working position in Dar es Salaam Seaport

_____

SECTION B: Study question

PART I: First objective of the study

6. The study wants to know the main courses of the congestion at Dar es Salaam seaport. Therefore you have been given some of the variables aimed at determining cause of congestion at this port. Please show your views by rating on the corresponding columns whether your strongly disagree, disagree, agree or strongly agree with the following variables in causing congestion at the Dar es salaam seaport

Variables	Strongly Disagree (1)	Disagree (2)	Neither disagree nor agree (3)	Agree (4)	Strongly Agree (5)
Lack of enough cargo handling equipments					
Lack of enough skilled manpower					
Small size of the port					
Large number of the port users					
Poor port management					
Poor policy implementation					

- What are the other things contribute to the cargo congestion at Dar es Salaam seaport

_____

PART II: Second objective of the study

7. What have been the impacts of the cargo congestion at Dar es Salaam seaport?

_____

8. The study wants to know the extents to which the following scenarios have been reported or observed at Dar es Salaam seaport with regard to the cargo congestion at the ports.

Variables	Strongly Disagree (1)	Disagree (2)	Neither disagree nor agree (3)	Agree (4)	Strongly Agree (5)
Congestion at the port has caused loss of working time					
Congestion at the port has caused loss clients cargoes/parcels					
Congestion at the port has caused loss of revenue					
Congestion at the port has caused delay of ship turn round time					
Congestion at the port has caused ship traffic					
Congestion at the port has caused diversion of cargoes from Dar es Salaam seaport to other ports					

PART III: Third objective of the study

9. What are the strategies have been used by Dar es Salaam seaport authority to reduce cargo congestion at this port?

_____

10. The study wants to know more about decongestion strategies implemented by Dar es Salaam seaports managements. Therefore, you have been given some of the variables which have been found to be useful in dealing with decongestion issues in other seaports in the world. Please vote the answer that properly

represents your opinion on how each of the following variables has been applied in Dar es Salaam seaport in trying to reduce congestion at the port.

Variables	Never (1)	Very rarely (2)	Rarely (3)	Frequently (4)	Very frequently (5)
Use of appointment systems for ship arrival and departure					
Adoption of new technologies in cargo handling process					
Use of high management information systems					
Maximize loading capacity of truck and ships					
Increase of skilled staffs					
Privatization of container handling processes					
Formation of powerful policies useful in decongestion process					
Reduce bureaucracy in clearing process					
Increase/widen roads to reduce truck traffics toward and from the port					
Increase efficiency of the railway shipping system					
Increase efficiency or speed of the crane					
Expand size of the terminals					
Monitoring transit					

PART IV: Fourth objective of the study

11. The study wants to know factors hinder implementation of proper cargo decongestion strategies at Dar es Salaam seaport. Therefore you have been given the following variable aimed at determining factors preventing functioning of decongestion strategies in this port. Choose the way you would rate the influence of these factors in thereof.

Variables	Strongly Disagree (1)	Disagree (2)	Neither disagree nor agree (3)	Agree (4)	Strongly Agree (5)
Weak regulatory framework					
Lack of capital					
Lack of space					
Low Technology					
Inefficiency of road and railway systems					
Inadequacy of staffs					
Infrastructures' shape					

12. What are the factors prevent proper implementation of cargo decongestion strategies at Dar es Salaam Seaport?

_____

_____

Thank for Your Responses

APPENDIX II: Questionnaire to the Private Port Users as well as Clearing and Freight forwarding Companies

Introduction

The aim of this questionnaire is to assess decongestion strategies used in inland container depots (ICDs) and container freight services (CFSs) so that to develop a framework for improving shipping movement at Tanzania sea ports. Your response to this Questionnaire will serve as source of information to the research paper to be done for dissertation purpose. Any response you provide here is strictly confidential and will be used exclusively for the research purpose. Your honesty in responding the right answer is vital for the research outcome to be reliable.

Questionnaire No. _____ Date: _____

SECTION A: Profile of Respondents

13. What is your gender?

Male (1)	Female (2)

14. Select your age group.

20-29 years (1)	30-39 years (2)	40-49 years (3)	50 and above (4)

15. Select your highest academic or professional qualification? Select only one

Diploma (1)	Bachelor (2)	Master/PGD (3)	PHD (4)

- Others (specify) _____

16. For how long have you been dealing with Dar es Salaam Seaport

1 -3years (1)	4-6 years (2)	7-9 years (3)	10 years and above (4)

17. What is your respondent's category in this questionnaire?

Private port user (1)	Clearing and freight forwarder (2)

SECTION B: Study question

PART I: First objective of the study

18. The study wants to know the main courses of the congestion at Dar es Salaam seaport. Therefore you have been given some of the variables aimed at determining cause of congestion at this port. Please show your views by rating on the corresponding columns whether your strongly disagree, disagree, agree or strongly agree with the following variables in causing congestion at the Dar es salaam seaport

Variables	Strongly Disagree (1)	Disagree (2)	Neither disagree nor agree (3)	Agree (4)	Strongly Agree (5)
Lack of enough cargo handling equipments					
Lack of enough skilled manpower					
Small size of the port					
Large number of the port users					
Poor port management					
Poor policy implementation at the port					

- What are the other things contribute to the cargo congestion at Dar es Salaam seaport

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PART II: Second objective of the study

19. What have been the impacts of the cargo congestion at Dar es Salaam seaport to the clients of the port?

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20. The study wants to know the extents to which the following challenging scenarios have been reported or observed at Dar es Salaam seaport with regard to the cargo congestion at the ports. Therefore rate while showing your level of acceptance in the Likert scale given the way you have witnessed occurrence of these challenging scenarios

Variables	Strongly Disagree (1)	Disagree (2)	Neither disagree nor agree (3)	Agree (4)	Strongly Agree (5)
Congestion at the port has caused loss of working time to clients					
Congestion at the port has caused loss of clients cargoes/parcels					
Congestion at the port has caused loss of income to the clients					
Congestion at the port has caused delay of ship turn round time					
Congestion at the port has caused ship traffic					
Congestion at the port has caused diversion of cargoes from Dar es Salaam seaport to other ports					

PART III: Third objective of the study

21. In your opinions what should be done in order to reduce cargo congestion at the sea ports of Tanzania, especially Dar es Salaam see port.

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Thank for Your Time and Responses