UNIVERSITY OF GHANA
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THE CHALLENGES FACING HAULAGE OPERATORS IN THEIR OPERATIONS AT THE FREEPORT OF MONROVIA

BY

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DECLARATION

I, Augustine M. Manoballah, declare that the contents of this dissertation represent my own work under supervision, and that the dissertation has not previously been submitted for academic examination towards any qualification. Furthermore, it represents my own opinions and not necessarily those of the University.

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ABSTRACT

With the continuous increase in economic activities and globalization of trade, port users are demanding efficient, effective and sustainable logistical services from ports. In Liberia, the major mode of transport from the Freeport of Monrovia, which services more than 95% of the country's seaborne trade, is the road haulage (truck). With Liberia's economy heavily reliant on imported goods, the roles of the port and to a large extent the haulage operators in ensuring those goods reach the local market cannot be overemphasized. The huge presence of congestion of haulage trucks inside and outside the premises of the Freeport of Monrovia compelled this paper to assess the challenges facing haulage operators in the receipt and delivery of cargo at the port. In furtherance, this research assessed the receipt and delivery operations and examined the challenges facing haulage operations at the port. This study also determined the average time for receipt and delivery of cargo and identified measures for the enhancement of haulage operations at the Freeport of Monrovia.

The study was conducted with 77 respondents dominantly males with the use of questionnaire, interview and observation. Seventy (70) respondents comprising haulage operators were issued questionnaires and 68 responded evidenced by the number of questionnaires retrieved. The study also interviewed 7 haulage management officials of the Freeport of Monrovia.
CHAPTER I: INTRODUCTION

This chapter opens the discussion on the issue under research. It presents a contextual description of the study in the background. The problem this research intends to solve is also presented in this chapter. This chapter addresses all the research objectives, the related research questions, rational of the study, scope of the study, and chapters’ organization.

1.1 Seaport System of Liberia

Liberia seaport system contains four seaports, the Freeport of Monrovia, the Port of Buchanan, the Port of Greenville, and the Port of Harper (National Port Authority, 2012). The sole functional seaports within the National Port Authority’s network are the Freeport of Monrovia and the Port of Buchanan (National Port Authority, 2012). The Port of Greenville and Port of Harper are strictly dedicated to the timber trade, however, not practical presently (National Port Authority, 2012). The Port of Buchanan mainly handles the export of iron ores that is dedicated to Mittal Steel and also contain a 334 meters long commercial quay that is barely utilized (National Port Authority, 2012).

The Freeport of Monrovia observed as the Gateway to Liberia’s Economy is the largest within the Authority’s Network (National Port Authority, 2012). The United States Military designed the port throughout World War II for strategic functions and operations commenced in 1948 (National Port Authority, 2012). It handles most of the country’s foreign cargoes. Two breakwaters, 2,359m and 2,200m long, defend the harbor, intromission a basin of three hundred hectares of protected water (National Port Authority, 2012). The general cargo berth, (the main pier), consists of an opened concentrated, 610m long by 11m wide marginal wharf.
with a ferroconcrete deck and a water depth of 12.95m (National Port Authority, 2012). The main wharf serves ordinal and third generation coastal and mainline vessels (National Port Authority, 2012). An act of Legislature established the National Port Authority in 1967 (amended in 1970) as a state-owned enterprise to manage, plan and develop all ports in Liberia (National Port Authority, 2012).

1.2 Importance of Seaports to the Economy

The Freeport of Monrovia serves as the major commercial port for Liberia's ocean-national and international trades. As a result of the civil unrest, the economy of Liberia remains grappling with the challenge of leveling her export with import (CIA World FactBook, 2012). The Country's economy is heavily reliant on foreign products (CIA World FactBook, 2012). The Central Intelligence Service Word FactBook (2012); economic statistics on exports and imports based on 2011 estimates, point to a huge gap between exports and imports in Liberia. The total exports value in dollars stood at $362.3 million as opposed to imports with $763 million. Rubber, timber, cocoa, coffee, and iron ores are merchandises that are exported (CIA World FactBook, 2012). As a non-oil manufacturing country with low manufacturing industries, fuels, chemicals, machinery, transport equipment, manufactured merchandise, and food products are the major foreign merchandises (CIA World FactBook, 2012).

Seaports serve as a major economic front for coastal countries. They are the primary and required transit points for the bulk of the trade, allowing the import of goods that coastal states with seaports cannot themselves produce in sufficient quantity and the export of items contributing to the development of the economy. Seaports are also a sensible place for the
availability of more services that add value to the product transported and therefore greatly aid in meeting the increasing demands of trade.

Seaport activities play a major role in the economic independence of port countries, which is very vital to their political independence, and they perform a strategic role in their trade. However, trade relative to seaport or airport is associated with custom activities, which distinguish it from ordinary trade. Custom activities involve collecting and safeguarding custom duties and controlling the flow of goods in and out of a country. The function is usually assigned to an authorized agency in a particular jurisdiction. The growth of all countries depends to a large extent on foreign trade. This is particularly true of developing countries including Liberia, which often are unable to manufacture many of the goods they need, and have to import them. At the same time they must export in order to obtain foreign exchange which they need for the acquisition of capital equipment (machinery, plant and vehicles), materials and technological skills so essential to their economic development (Onwuegbuchunam & Ekwenne, 2008).

UNCTAD (2011) summarized the role of a modern seaport as “Seaports are interfaces between several modes of transport, and thus they are centres for combined transport. Furthermore, they are multi-functional markets and industrial areas where goods are not only in transit, but they are also sorted, manufactured and distributed. As a matter of fact, seaports are multi-dimensional systems, that must be integrated within logistic chains to fulfil properly their functions. An efficient seaport requires, besides infrastructure, superstructure and equipment, adequate connections to other transport modes, a motivated management and
sufficiently qualified employees.” The paper adopts this definition as a proper categorization of seaport in terms of significance to a nation’s economy.

1.3 The Role of Haulage

Haulage refers to the transporting of cargo internally or externally from the shippers’ destinations to the port by means of truck or train using road and rail respectively. It also involves transportation of cargo from the port to the consignees’ destinations. The latter definition handles imported cargo while the former is associated with exportation of cargo. With the reliance of Liberia heavily on imported goods for economic trade (CIA World FactBook, 2012), the latter definition is dominantly practiced by haulers in this industry, with emphasis on road transport as the mode of transport and trucking as the means of transport.

In an economy that is struggling with infrastructure development; road haulage is likely to face the challenge(s) of poor road infrastructure. The Road Haulage Association of the United Kingdom in an online article title Carbon Footprints Explained indicated that efficiency and the environment are the two most pressing issues to challenge the road haulage industry in many decades. While the article considered efficiency and environment in the context of CO2 emissions and it minimization by drivers and owners of trucks to save cost, efficiency and environment can also be related to the port management and operations, and the road infrastructure development respectively.

Road haulage has the foremost direct impact on impoverishment as its employs millions of individuals and generates a significant portion of gross domestic product, particularly in low
and middle-income countries (Transport Research Support, 2009). The report conferred trucking as the primary mode of transport for domestic, trans-border, and international cargo, representing over seventy per cent of the freight bill and even more of cargo value (Transport Research Support, 2009). Trucking as view by the report is the mainstay of the economies of the world, suggesting that in globalized economy; road transport is cardinal to production, distribution, mobilization, driving economic, and social and environmental progress. While the arguments are good basis for this paper, it is added that road transport takes up a wide space in a nation's transport network. It is the most convenient way of transporting goods to the interior. Road transport is cost-effective for transportation of goods over short distance due to huge savings on packing cost and expenses on several handling. This mode of transport is quicker over short distance because goods are directly loaded to the truck and transported to the place of destination. It is conjointly appropriate for carriage of perishable merchandise that needs quick delivery. Acknowledging that goods are exposed to great deal of losses on land transport, the risk of losses in road transport is lesser compare to rail transport. Flexibility in road transport is higher giving that its route and temporal order are adjusted to suite the individual demand. This ends up in its provision of door-to-door services.

While rail transport is additionally vital, quicker and economical for the transportation of products over long distances at lower cost compare to road transport, the capital investment of road transport is lesser than that of rail transport. Even with the rail system, truck transport would still be necessary for final transport of products from rail stations to final destinations. Factor of such is one of the driving forces behind economies especially developing economies to concentrate more on truck transport, which is easily accessible and cheaper.
With the continuous increase in economic activities and globalization of trade, shippers and port users are demanding efficient, effective, and sustainable logistical services from ports. For instance, the major mode of inland transport from the Freeport of Monrovia, which services more than 95% of the country’s seaborne trade, is the road haulage (Trucking). Most of the country’s seaborne trade constitutes imports (CIA World FactBook, 2012). With the nation’s heavy reliance on imported goods to sustain the economy, the need for haulers to carry goods from the port to consignees’ destinations as well as from shippers’ destinations to the port (for export) cannot be over emphasized.

1.4 Congestion

The haulage industry (trucking) is contributing immeasurably in the distribution of cargo at the port. While it is true, the type and nature of trade determine the kind of transportation to use the haulage trucks and by extension the haulage industry have certainly been of great assistance in this direction. However, this type of service provided by the haulage industry comes with serious and unexplored challenges in the areas of performance across the network infrastructure, storage terminal and transport management in the port, gate security and procedures, cargo handling gears, and parking spaces, which cause congestion of road traffic inside and outside the port premises. In addition, congestion also arises out of the following: 1. Ship to shore transfer of cargo – considering the loading and offloading of goods. 2. Quay transfer of goods – where there are inadequate dockside equipment or the rate at which transfer of cargo from the quay to the point of transportation (either at the transit storage or receipt and delivery point), is faster than the rate at which the point of transport is met with consignments. 3. Transit storage – inadequacy of equipment which, transport goods to the storage terminal. 4. The receipt and delivery stage where bureaucracies and lengthy documentation procedures are in place. 5. Procedures and documentation – ensuing from late
arrival of documents, faulty documents, outdated documentation requirements and the methods of processing, superannuated facilities for vessels and cargo as well as importers ordering shipments without adequate funds to take delivery of consignments on arrival.

The ever-presence of congestion cannot be underestimated in port operations. Port congestion as Mabs (2009) indicated comes with delays for port users and increases the costs to many stakeholders; for example, shipping lines (shipping delays, incomprehensible feeders), terminals’ (yard congestion, re-handling), trucking companies and railways (longer waiting time) and shippers (longer lead time).

Every port, the first point of access for land transport is the gate compound or complex. The gate compound or complex regulates the entrance and exoduses of road vehicles carrying merchandise and containers through the port. It is at the gate compound, documentation, security, container, and alternative merchandise examination procedures are undertaken. The existence of weaknesses within the operations at this point might conjointly result in congestion of haulage trucks within and outdoors the port premises.

1.5 Problem Statement

The huge presence of congestion of trucks inside and outside the Freeport of Monrovia premises is an old age problem. Whether the congestion results either from the truck operators—that is they lack proper understanding of procedures as drawn up by the port management therefore placing them in a situation they should not be in, or from the port
authority, drawing up complex or unclear procedures to be implemented, or from the storage
terminal management; that conclusion cannot be arrived at at this point. The effect of this
congestion results to delay in the receipt and delivery of cargo and has the potential to
increase haulers’ operating cost, which is an abnormal phenomenon for any business and
indirectly increasing the cost of doing business at the port, which also has impact on the
competitiveness of the port.

1.6 Research Objectives

The major objective of this research is to assess the challenges confronting haulage operators
in the receipt and delivery of cargo at the Freeport of Monrovia. The researcher achieved this
by employing the below sub-objectives:

- To assess the receipt and delivery operations at the port of study
- To examine the challenges facing haulage operations at the port of study
- To find out the time taken on average for receipt and delivery of cargo at the port
  of study
- To identify possible measures for the enhancement of haulage operations at the
  port of study

1.7 Related Research Questions

The related research questions were designed to fully address the research objectives:

- What procedures the port management have in place for the receipt and delivery
  of cargo?
- What problems do haulage operators have with the receipt and delivery process at
  the Freeport of Monrovia?
• How long does it take on average to receive and deliver cargo at the Freeport of Monrovia?
• Is the port management faced with any challenges in the receipt and delivery process at the Freeport of Monrovia?

1.8 Justification of the Study
Findings from this study contribute to the existing literature on documentation processes and clearance procedures relative to receipt and delivery of cargo at the Freeport of Monrovia. The study serves as guide or catalogue for more research into challenges of haulage operations at the seaports in Liberia. It also serves as reference guide to Port Authorities in their effort to help mitigate the challenges of haulage management. The study is also the researcher’s contribution to knowledge.

1.9 Scope of the Study
The study covered only haulage operations in respect of receipt and delivery of cargo at the Freeport of Monrovia. The study limited itself to the management of haulage trucks in and around the port premises. This research restricted itself to container and general cargoes as the types of cargo hauled. The population selected for this study was limited to members of the Truckers Association of Liberia registered for the year 2013, and staffs of haulage management at the Freeport of Monrovia.
1.10 Organization of Chapters

Chapter I
The study revolves around a basic introduction and understanding regarding the changes and the challenges that have been undertaken to attempt and complete the study. The chapter lays down the aim and the resulting objectives that would provide for narrating and describing the necessary results and outcomes, which not only make way for giving the audience an idea of the progress, but also call for analyzing and comprehending the expected outcomes associated with the research.

Chapter II
The second chapter revolves around secondary research work. Through the utilization of the necessary outcomes and the available information upon cargo and the operations that are undertaken at the Freeport of Monrovia, not only does it make way for the development of constructive literary findings that would help make way for progress and outcomes, but also provide for narrating and describing data and information regarding subjects and concepts in-scope. The literature provides for creating the most effective of results and outcomes, but that it also calls for the reader to analyze and comprehend the best and the most constructive of results.

Chapter III
This chapter revolves around the methods, methodologies, tools and techniques that are employed in the research that has been undertaken. With key words to online databases that have been utilized and intended for progress, it is necessary to create and describe the most
effective and the most constructive of results, along with filtered accounts and progress that has been made.

Chapter IV
This chapter centers on the findings of this research. Through this chapter, which presents the responses of the research respondents, the reader will get the picture of the outcome of this research.

Chapter V
Chapter Five recounts the summary of the research findings, the conclusion, and recommendations. Reading this chapter gives the reader an appreciation of the researcher's recommendations based on the research conducted, and the conclusion of the research.
CHAPTER II: LITERATURE REVIEW

2.1 Definition/Introduction to Seaport

A seaport port is a facility for receiving ships and transferring cargo to and from them (Ships) (Chung, 1993). UNCTAD (2004) does not just see seaport as platform for providing services to ships and cargo or as sea/land interface, but as a good location for value-added logistics and other related services including industrial, trade, financial, and even leisure and property development activities. In a more concise term, the researcher will define seaport as a point where goods are transferred from one mode of transport to another. This goes to say a point where goods are transferred from water transport (ship) to road (truck) or rail (train) transport.

Seaports are usually situated at the edge of an ocean or sea, river, or lake. Ports often have cargo-handling equipment such as cranes (operated by stevedores) and forklifts for use in loading/unloading of ships, trucks or train, which may be provided by private interests or the port authority. Often, canneries or other processing facilities will be located very close by the port.

The terms "port" and "seaport" are used for ports that handle ocean-going vessels, and "river port" is used for facilities that handle river traffic (Baird, 2002). Sometimes a port on a lake or river also has access to the ocean, and is then referred to as an "inland port".
Port has several players (port users) who make use of its services. Port users as defined by UNCTAD (2004) are institutions or individuals who transact business with the port. Port users comprise ship owners, cargo owners, shipping lines, agents or brokers, cargo hauliers (haulage operators), freight forwarder, etc. The ships owners and cargo owners are the major customers of the port (Langen, 2007). The two users are given significant recognition based on the fact that they are the players that generate the activities that involve the other players. For instance, the ship owner and the cargo owner must collaborate to have cargo at the port before a haulier/haulage operator will engage in the haulage of the cargo. However, the services of the haulage operator can be needed in advance to transport cargo from the cargo owner/shipper’s warehouse to the port.

There is wide range of services port offers its users. Ship owners benefit from services such as loading and discharging cargo form vessels, adequate draft to accommodate vessels calling at the port, provision of dry dock services for repair of vessels, and the list can go on and on depending on the financial, human resource and technical capacities of the port. However, Behar and Venables (2010) argued that the number of services offer by a port is not a factor to attract more users rather the quality, effectiveness and efficiency of those services, which give satisfaction to the users and improve their operations. With respect to cargo owner, the port offers services such as provision of storage facilities for cargo and provision of cargo handling equipment for loading and unloading cargo on trucks or rail. The major service the port provides haulage operators is the provision of adequate parking space (Cullinanae & Song, 2002). Notwithstading, efficient and effective gate flow system, storage terminal management system and automated documentation processing are services demanded by
haulage operators from ports (Langen, 2003). The optimal provision of these services optimizes the operations of haulage operators.

2.2 Cargo Related Operations in Ports

The port operations with respect to cargo handling begin from anchorage where the vessel anchors to await berth, to the port’s gate where the cargo exits the port by means of truck or rail (train). This aspect of the operations is related to cargo been imported. For export cargo, the operations begin from the port’s gate where cargoes are received by the port by means of truck or train, to the point where the vessel gets out of the breakwater. However, for the purpose of this research, the focus is on storage yard and gate operations with brief description of the quay operations.

There are three stages of the terminal namely, the quay, the storage yard and the gate (Langen, 2007). The quay is the area in the port where cargo discharging and transfer operations take place. The discharging operation include the offloading of cargo from vessels, trucks or train, while the transfer operation involves shifting of cargo from quay to ship, truck, or to storage yards. In respect of cargoes been imported, when the ship berths, cargoes are discharged from the ship to the quay and subsequently transferred to the designated storage sites. There are instances where cargoes are discharged from the ship directly to a truck but this operation takes place at the quay. On the other hand for exported cargo, the cargo is been shifted from the quay to the ship. In the same vain, cargo can be shifted from a truck directly to the vessel, but operation is been carried out on the quay. Gantry cranes (ship-based or shore-based) are used for cargo handling at the quay.
The storage operation involves moving cargoes to their respective storage locations in a well-planned manner. The storage operation also involves the receipt or delivery of cargo, where truck drivers go to storage yard to deliver or receive cargo. According to UNCTAD Monographs on Port Operations, focusing on operation planning in ports, when the vessel berth and the details of the vessel are received, storage space is allocated for cargo received for consolidation. According to this port operations manual, when the storage plan and manifest are available, the import cargoes can be allocated to specific storage locations. As the cargoes are not meant to remain in storage perpetually at the terminal, the manual recommends that the first step before the cargoes go to storage is to contact the consignees or their agents to discuss their handling and delivery requirements, and to find out how much cargo is going into storage. Once the types of cargoes moving to storage are known, the floor area needed by each cargo, for open and covered storage, can be calculated. The possibility then exists to mark them on the storage plans ready for distribution to the storage supervisors. Moreover, the delivery instructions for each cargo consignment and any special requirements can be filled in on the Hatch Lists and Hatch Plans.

The UNCTAD Monographs on Port Operations also pointed out that giving that the amount of cargo going through storage is known, and the likely pressure imposed by the receipt and delivery of cargo, storage areas' labour can be allocated not only for storage operation itself but also for receipt and delivery operation. In addition to allocation of labour for storage operation and receipt/delivery of cargo, cargo-handling equipment is also allocated.
2.2.1 Types of Storage Systems

There are various types of storage and retrieval systems based on the type of port. This literature concentrates on two general types of storage and retrieval systems in use as used by U.S. marine Terminals: wheeled and grounded. The wheeled system is the storage of container cargo on chassis that can be connected to trailers for retrieval. Ioannou, et al (2000) described wheeled operation as a one in which the container is brought into the container yard on a chassis, and then brought to the ship on the same chassis, and lifted off. The empty chassis can then be used for inbound containers. The wheeled operations, where possible, are more efficient than the grounded ones in terms of loading and unloading rates as they require no container transfer and are random access (Ioannou, Kosmatopoulos, et al, 200). Additionally, the lower cost for labour and equipment for wheeled operations make these operations more desirable than grounded ones at places where land is inexpensive. Although wheeled operations are more efficient in terms of the amount of effort required to move the container through the yard, this operation is very inefficient in the utilization of space and equipment, since the containers are parked on chassis (Ioannou, Kosmatopoulos, et al, 2000).

The grounded storage system is one that involves storing container in storage yard on ground, stacked over one another up to six, or higher for full container load, or even higher for empty containers. Ioannou, Kosmatopoulos, et al (2000) argued that grounded operations are very efficient in terms of space, since the containers can be stacked as much as 4-5 high when full, and even higher when the containers are empty. Grounded operations, however, require much more equipment to remove the container from chassis and place it in stacks and vice versa. Grounded operations require much effort in the storage and retrieval of containers, since the container must be transferred via lifting equipment, and often, multiple lifts are required in
the yard where containers are stacked on top of one another. Grounded operations usually require that the ground be reinforced to support the stacks of containers and the cargo handling equipment. However, the “throughput per acre” for grounded operations is typically much higher than that of wheeled operations. Effective Grounded operations use cargo-handling gears such as hostlers, forklift, straddle carriers, and reachstackers (Ioannou, Kosmatopoulos, et al, 2000). Hostlers are yard tractors that pull chassis (with or without containers) to and from the container yard. These are not legal vehicles for public road transit. Forklift is a powered industrial truck used to lift and transport cargo in the storage yard. It is used for handling of general cargo in the pallet, sac and drum forms. It also handles container cargo. Forklift trucks (FLT) are mechanically or electrically operated and fitted in front with a platform in the shape of two prongs of a fork; lifting capacity varies from 1 to 45 tons. The Straddle Carriers are rubber tired lifting units that are used to place and pick containers from stacks within container yards. They are manually driven, and typically are capable of lifting a container four (4) container-heights high (one-over-three). Reach Stackers is the type of equipment used for container sorting and hostler loading within the yard. Typically, they can reach four (4) plus containers high.

Although the two storage systems discussed above, have focused mainly on Full Container Load (FCL), which is container that is wholly intended for one consignee or consignor, general cargo handling is still carried out at container freight stations under these storage systems. At the container freight stations (a port facility where containers are consolidated and stored), there are FCL containers and Less than Container Load (LCL) containers. The LCLs are containers that contain cargoes belonging to more than one consignee or consignor. Imported LCL containers are opened in the container freight station and consignees go with
trucks other than container trucks to receive their cargoes. For exporting LCL containers, consignors/shippers deliver their cargoes by means of non-container trucks to the container freight station for consolidation. This form of containerization (LCL) appears as general cargo as the cargo is received from the port not in container.

With regards to the two storage systems discussed above, the Freeport of Monrovia storage operations fall under the grounded storage system. However, the port currently has one reachstacker and a forklift for cargo handling at the storage yard. Hence, when there are two trucks at the storage yard where one is receiving and the other delivering containers, one has to wait for the other to be served.
Figure 2.1 Storage Terminal of a Grounded Storage System

Source: Google Maps

Figure 2.2 Storage Terminal of a Wheeled (Chassis) Storage System

Source: Google Maps
2.3 Port's Gate Operations

Choi, H.R., Park, B.J., Shin, J.J., Keceli, Y., & Park, N.K. (2007) defined a terminal gate as a physical interface between a cargo transporter (haulage operator) and a terminal (port) where responsibility for cargo/container management is shifted between the two. At the port’s gates, the operation is security related dealing with the movement of vehicles and pedestrians in and out of the port. Concerning haulage of cargo by trucks, the port’s gate is the first point at which the port receives cargo, and the last point at which the port delivers cargo.

Choi et al (2007) argued that giving that the port’s gate provides a truck driver with the information on the accessibility to the storage yard and location, improvement in the job-handling capacity at the gate produces efficiency in the terminal operation. Their study
divided the jobs at the gate into three segments: recognition and confirmation, information management, and customer services.

Recognition and confirmation require recognition of driver, truck’s plate number, container number, and chassis number. This also involves confirmation of container seal, weight, size, damage, and temperature status for container trucks. For the information management segment, the responsibilities comprise delivering job order (receipt and delivery procedures relative to the gate) information, storage of cargo/container information, and real-time information transmission to TOS (terminal operating system). At the customer services level, the job calls for providing customers including shippers and transporter with information on cargoes/containers and related statistical data.

2.3.1 Partially/non-automated gate system

Port’s gate system can be generally categorized into two: partially/non-automated gate system and fully automated gate system. The partially/non-automated gate system is one that is operated with human involvement in trucks inspection, drivers’ inspection, and documentation processing. The partially/non-automated gate system requires truck drivers to stop at the gate and disembark their trucks for processing of documentation for entry into the port. At a partial/non-automated gate, the security officers collect information about drivers, trucks and the cargo the driver is going for or delivering, manually, and import the information manually into a document system operated by the port. At a manual gate system, for each entry or exit truck movement, the gate clerk must check the truck number and the container number to see if they match the actual numbers displayed on the equipment listed
on the documentation. In addition, the truck must be checked for "road worthiness" (brake lights and turn signals functioning properly, tire wear acceptability, etc.). This makes the inspection procedures too lengthy.

To the knowledge of the researcher, there has been no documented study on the significance of this gate system, especially in this era of technological advancement. Nonetheless, one can point to the many challenges associated with this port's gate operating system as this study enumerates few. Due to the manual operation, there is a high possibility of delay at the gate as work that could be done electronically in one minute may take ten to fifteen minutes to complete. A research conducted at a terminal found that trucks had to wait at the entrance gate an average of 42 minutes before they could be served (Easley & Walton, 1995). So multiplying that time by 60, 80 or even 100 trucks waiting to approach the gate can translate into revenue lost for the trucking industry, as well as reduced terminal productivity.

Another challenge with this system that cause possible delay at the gate resulting to long queue is, gate security officers or gate clerks dealing with haulage operators who are challenged with the English language. There are instances where truck operators do not read English; this means that the gate operator must take an inordinate amount of time extracting pertinent information from the truck operator and, in some cases, actually fill out forms for the truck operator.

At a gate system not automated, each container is given a cursory check for damages upon arriving at or exiting from the terminal in order to reduce liability. There can be times when
the trucking company claims that a container was damaged before the truck operator picked it up from the terminal; there can also be claims as well as counter-claims by the terminal operator that the container was damaged while in the custody of the trucking company. There are no pictures or other visual proof of receipt of a damaged container. Furthermore, many mistakes are made in the entry/exit process because of the need to record information (container number, docking receipt number, delivery order number, etc.) repetitively. These numbers can easily be misread or misrecorded. These mistakes also lead to costly, unnecessary delays.

Chatterjee, Kohls, Hummer & Clarke (2008) enumerated some challenges associated with security operations at the gate. According to their study, enhanced security inspection combined with increased traffic demand may result to traffic congestion at port gates. That is meant to say when the screening of vehicles and drivers at port gates are heightened; there exist a possibility of delay in the movement of trucks and railcars into and out of port facilities. Chatterjee, Kohls, Hummer & Clarke (2008) also argued that traffic congestion at a port gate and the resulting queue of vehicles could cause congestion problems on the surrounding road network and also inside a port itself. This is mainly applicable to a port that has one gate with separate sections of entry and exit.

Despite these challenges and in the face of this technological era, some ports still use this gate operating system. The port under study (Freeport of Monrovia) is one of the ports that run a manual gate system. From collecting of information from truck drivers to inspection, is been done manually. Some other ports that operate this gate system are Port Nelson Ltd and
Bangkok Port. Port Nelson Ltd of New Zealand’s South Island currently operates a partially automated gate system (Port Nelson Ltd, 2012). At Port Nelson, all drivers must obtain a Port Nelson Ltd (PNL) ID card or visitor card to gain access or exit through the security gate system. On arrival at Port Nelson’s entry gate, all trucks are required to stop at the Cargo Reception for processing of documentation and receipt of direction. At the Cargo Receptions there are waiting areas for trucks to park while their documents are been processed. The driver then presents the documentation for authorization, inspection and data entry in the container management system. The Cargo Reception staff will input the relevant data into the Jade Master Terminal management system and give the driver directions to the correct vehicle transfer area for the cargo or container.

The following information is required in the documentation provided at Cargo Reception on arrival at Port Nelson.

<table>
<thead>
<tr>
<th>Containers</th>
<th>Other Cargo</th>
<th>Delivering Empty Containers to Yard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Container number</td>
<td>Waybill number</td>
<td>Container number</td>
</tr>
<tr>
<td>Container type</td>
<td>Voyage reference</td>
<td>Container type</td>
</tr>
<tr>
<td>Voyage reference</td>
<td>Consignor</td>
<td>Shipping Line</td>
</tr>
<tr>
<td>Consignor</td>
<td>Port of discharge</td>
<td>Consignor (Source)</td>
</tr>
<tr>
<td>Port of discharge</td>
<td>Final destination</td>
<td></td>
</tr>
<tr>
<td>Final destination</td>
<td>Booking reference</td>
<td></td>
</tr>
<tr>
<td>Booking reference</td>
<td>Cargo description</td>
<td></td>
</tr>
<tr>
<td>Cargo description</td>
<td>Weight</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>Dimensions</td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td>Special instructions</td>
<td></td>
</tr>
</tbody>
</table>

24
The Bangkok Port located in Thailand under the authority of the Port Authority of Thailand also operates a partially automated gate system. At Bangkok Port, the cargo flow begins with the cargo owner obtaining the cargo pre-advises (called Customs movement ID) through the Electronic Data Interchange (EDI) system. The cargo owner takes the Customs Movement ID to the Information Technology (IT) section of the Bangkok Port (Terminal 1/Terminal 2).

The IT section will prepare the entry pass called Container Movement 49, and submit it to the cargo owner. The cargo owner contacts a truck driver (haulage operator). The truck driver drives to the Main Gate In with the entry pass and pay the entrance fee (toll) and obtain a payment receipt. The driver moves to the Sub Gate In (Terminal 1/Terminal 2), the truck is weighed and container is weighed (for trucks carrying container). The driver submits the cargo manifest and entry pass to the port staff at the sub gate in. The port staff do damage inspection, documents and issue Equipment Interchange Report (EIR) form to the driver. The
driver will submit the signed EIR (by the driver) and entry pass to the Customs Officer at the sub gate for verification than the truck enters.

2.3.2 Fully automated gate system

Fully Automatic Gate Systems (FAGS) help establish a connection at gate terminals between trucks and terminal operators. Truck handling at the terminal gates is controlled by the Gate Operating System (GOS). In order to process the collected data, communication needs to be established between the customer's advanced Gate Operating System and the terminals application or usually Terminal Operating System (TOS) (COSMOS 2008). FAGS use camera portals and optical recognition to read the number on the container, search the billing file to see whose cargo it is, and determine where it needs to go. Drivers can be identified with fingerprints of the first two fingers on the left hand, increasing security and accountability. Workers, therefore, will not need to be on the ground checking in drivers.

Gate efficiency can be improved by implementing automated gate systems (Hong & Chung, 2003). These systems often make use of the internet for greater coordination of terminal capacity and operating conditions with truck appointment scheduling. This helps to reduce lengthy truck queues and information processing times and facilitates a more efficient allocation of personnel (Thomas & Urban, 2001). Trucks arrive when needed and benefit from faster processing and reduced waiting times. Minimizing waiting times and improving timeliness of deliveries can improve customer satisfaction and productivity for both haulage trucks and terminal operators, with the use of automated gate system.
Internet technologies that allow for automated scheduling can also facilitate online information processing with automated gate system. Shipment information can be updated online and relayed between haulage operators and gates prior to trucks arriving at the port. Information on container status can help trucking companies to efficiently dispatch trucks to pick up available containers. With the automated gate system, haulage trucks serving the port are equipped with transponders allowing drivers information to automatically be transmitted to the gatehouse to improve the speed of processing.

However, this system cannot be totally freed from challenges depending on the type of technological equipment used to automate the gate. Hong & Chung (2003) identified three possible problems that gate automated with Radio Frequency ID (RFID) equipment that has low frequency may face: (1) Conformation of gate passage, (2) Delay of gate passage time, (3) Recognition of combined containers (20 ft containers). With respect to the problem of conformation of gate passage, in case of RFID tag attachment, recognition is possible within the distance of 100 meter. However, it cannot show whether the container has passed the gate or not (Choi, Park, Park, Yoo, Kwon & Shin, 2006). Delay of gate passage time is caused by examination of container to determine the condition of the container and stopping of truck to confirm the information on the job orders (Choi et al, 2006). Choi et al (2006) also attributed the problem of recognition of combined containers to interference by frequencies of each other and frequency absorption caused by the quality of container material.

In the case of an automated gate system using barcode technology, when a container truck arrives at the gate, its driver has to get his truck and container recognized by means of a bar
code system, and receives the information on job order (Thomas & Urban, 2001). Nevertheless, this bar code system takes a long handling time, and also the barcodes are sometimes lost and damaged (Hong & Chung, 2003). In case of an automated gate system with optical character recognition (OCR) technology, a video classifier is used for the recognition of trucks and containers (Thomas & Urban, 2001). However, this also often causes errors, consequently leading to manual work (MOMAF, 2005).

In past times and presently at some ports, the main jobs of recognition and confirmation, information management and customer services at the gate were/are done manually, and so the bottleneck often takes place at the gate. In an effort to solve this problem, many ports have shifted to automated gate system. For example, Los Angeles Port of United States introduced an automated gate system by adopting a video camera and a voice transmitter in order to reduce job-handling time at the gate (Thomas & Urban, 2001). Of late, several cases of Radio Frequency Identification (RFID) technology application to the port can be found. In Korea, under the leadership of the Ministry of Maritime Affairs and Fisheries, both RFID-based port logistics project (in 2004) and intellectual port logistics technology development project (in 2005) were conducted and laid a foundation of an automated gate system (Hong & Chung, 2003). In the Netherland, the Port of Rotterdam business process is completely conducted in an automated environment with barely any manual intrusions. Based on the highly industrial nature of the Port of Rotterdam, most of the manufacturing firms are located within the port, making the clearing of cargo very fast (Visser, Konings, Pielage & Wiegmans, 2007). The Port eliminates manual documentation processing with the adoption of various Electronic Data Interchange (EDI) systems (Besselink, 2008). The entire cargo workflow processing is computerized with the use of enterprise resource planning software.
Besselink (2008) further revealed that haulage operators accessing the Port of Rotterdam require a "CargoCard" to be properly identified by biometric means. This suggests that operators will have to be previously registered to have their information captured in the biometric technology. The "CargoCard" is a biometric identification and verification card used to identify truck drivers. Drivers who have been assigned to receive or deliver container drive to the gate and put their cards (one at the time) in the biometric card reader, which captures all of the drivers' information, trucks' information and containers' information in few seconds. As the trucks drive through the gate barrier, they are automatically inspected by means of scanning. Drivers pay toll fees online or at the gate but without disembarking their vehicles.

Like the Port of Rotterdam, the Port of Singapore is entirely automated with EDI System to circumvent manual processing. Due to the adjoining nature of the Port to the city, fast entry into the Port is imperative to keep the connecting roads free and fast flowing to avoid congestion at the terminal and city roads (Secretariat for the Committee on Infrastructure-Government of India, 2007). The Port has a well-designed gate system to ensure speedy access of the trucks on arrival to the terminal. The gate system handles an average traffic flow of "700 prime movers (trucks) per peak hour, and 8,000 prime movers per day" (Secretariat for the Committee on Infrastructure-Government of India, 2007). According to the Secretariat for the Committee on Infrastructure-Government of India (2007), this fully automated and paperless process clears haulage drivers for entry into the Port within 25 seconds utilizing the following steps:

➢ A manifest (for cargo and truck) is submitted through Portnet (the terminal management system) 36 hours in advance.
The truck arrives at the gate and is weighed by the weighbridge.

The driver taps his ID card on the reader and keys in an ID number.

A signal is automatically picked up from the transponder atop the truck's cabin.

The Container Number Recognition System via CCTVs (Closed Circuit TV) captures the container number at the gate.

The weight of the truck, driver's identity, truck's identity and the container number are all checked against the manifest and cleared.

The automatic paying system tells the driver the exact position in the yard where the container will be stacked.

Truck driver goes to yard and the truck is automatically loaded.
Figure 2.3 Column-mounted hand scan, enabling drivers to pass easily without having to leave their trucks

Source: Keesing Journal of Documents & Identity, Issue 26, 2008, pg. 21

Figure 2.4 Automated Gate with Light Signal/Status Light- showing readiness for services

Source: Port of Bangkok, http://www.bkp.port.co
2.4 Gate appointment and extended gate hour strategies

Automated gate system can be run on either gate appointment basis or extended gate hour basis. Gate appointment is a truck reservation system that provides a certain number (limited by capacity of the terminal) of reserved transactions during a specified time slot (usually one hour). That is, trucks do not go to the port to await contracts for hauling of cargo from the port. Trucks only go to the terminal when there is an appointment and the cargo is ready to be delivered or received by the port. Appointments are made by the use of the Internet or by phone. Modern distribution centres that are fully automated have appointment systems for trucks in use for receiving and delivery of cargo. An appointment system requires dedication of shippers, haulage operators, and terminal operators, in order to be effective (Bureau of Transportation Statistics, 2006). Gate appointment systems can be very effective in controlling the random arrival of trucks, modifying the peak hours of demand, minimizing congestion of idling trucks, and improving the utilization of the terminals' capacity (both at the delivery area and the storage yard). In order for a gate appointment to be successful, further strategies should be in place for processing the trucks arriving before or after their appointment time. Methods of processing arriving trucks with appointments differ from terminal to terminal, as shown by the current literature (Lord and Morais 2006). One way of processing trucks is to have dedicated lanes for trucks with appointments. Faster processing of trucks with appointments is assured if the conditions inside the terminal are well organized. Besides separate lanes, another method of processing trucks without appointments is to gather them all in a marshalling yard and service them according to a pre-determined pattern. This way all trucks with an appointment have priority (Theofanis et al. 2008). When there are no dedicated lanes for trucks with an appointment, the same queue can be used for all trucks, and trucks with appointments can be pulled out of line if the waiting time exceeds a limit for trucks with appointments. To fully take advantage of an appointment system,
storage terminal operations must also be organized, so that when a truck makes an appointment, containers are ready for pick up. To facilitate this objective, containers can be reshuffled the day before, or when time is available, based on the appointment schedule so there are no delays at the storage terminal. This strategy is not practical for partially/non-automated gate system. For instance, in Liberia at the Freeport of Monrovia, haulage trucks are not processed based on appointment system. Truck drivers go the port in the morning hours with the expectation to get contract for haulage. Some drivers obtain contract before getting to the port but no appointment with the gate.

In addition to a gate appointment system, the strategy of extending the hours of operations of the gates is another way to manage the demand patterns of truck arrivals and avoid high concentration during peak hour periods. Both strategies can exist in isolation or can be implemented together and complement each other. The latter strategy allows the demand for processing containers to be spread out throughout the evening, night, and even on weekends. This reduces the likelihood of congestion occurring during peak hours. There are three main issues that affect the successful implementation of this strategy. 1) providing incentives to haulage operators that will encourage them to utilize the extended hours of gate operations, 2) adjustment of hours and pay of workers at the terminal (Giuliano and O'Brien 2007), and 3) the ability of storage terminals to accommodate the truckers that receive or deliver containers during the extended hours of gate operations. Peak hour surcharges are an option to encourage traffic in off-peak hours. The improved truck turn times within the terminal and increased credibility of the terminal operator in keeping the promised truck turn times, could also facilitate the successful implementation of this strategy.
CHAPTER III: METHODOLOGY

3.1 Introduction

This chapter discusses the population, study area, population sample, sampling procedures, and research design. The data collection and data analysis methods employed for this research are also discussed in this chapter.

3.2 Research Design

The research is designed on the foundation of both qualitative and quantitative research methods based on the descriptive and exploratory nature of the study. The descriptive technique was espoused to gather, organize and summarize information around the research problem and issues identified in that. On the other hand, the exploratory technique investigates the problem for the purpose of moulting new light upon it and accordingly revealing new knowledge.

McMillain and Schumacher (1993) defined qualitative research as "primarily an inductive process of organizing data into categories and identifying patterns (relationships) among categories." Wiersma (1995) also argued that qualitative research is based on the assumptions and perspectives of phenomenology, investigative research nature, reality and post hoc conclusions. From the concept of the arguments propended by these two researchers, it can be stated that data and their meaning originates from the research context which this research conformed to. Qualitative research is attainable through exploratory, inductive procedures research emphasizes processes rather than of ends (Merriam, 1988).
Across to quantitative research, it is based on the maximization of objectivity, replicability and generalization of research findings. There are various types of quantitative research strategies, but this research restricted itself to only two of those strategies: Survey research and descriptive research. Survey is used to gather information from a defined population by means of personal interviews, telephone interviews, and questionnaires (Polit and Hungler, 1999). The descriptive strategy as the name suggests, describes existing situations and may provide room for discovery of new concepts and meaning. This strategy involves the use of instruments such as questionnaires, closed questions’ interviews and observations in collecting data that will describe a particular population or situation under study (Polit and Hungler, 1999). Polit and Hungler (1999) concluded that the essence of descriptive research is to observe, describe and document features of a defined situation just as they occur.

The research also engaged the services of both the quantitative and qualitative data analysis methodologies for the purposes of arriving at a more all-inclusive understanding of the problem. The qualitative method involved the use of observation, interviews and artefacts to collect significant data while the quantitative method took into consideration the use of questionnaires.

Primary data constituted responses from haulage operators, the staffs of haulage management at the port, and researcher’s observation. Secondary data included the truck processing procedures and relevant literatures on haulage operations at seaports. Questionnaires were used to collect data from the haulage operators (drivers/owners) to enable the findings generalize the entire population. The questionnaires carried both
structured and unstructured questions. Interviewer’s guide assisted in obtaining relevant information from haulage management staffs of the port. The interview questions were unstructured to allow respondents provide their own ideas or understandings of the problem under study. The researcher’s presence at the Freeport of Monrovia and notes congregated from what was observed provided the data for observation.

3.3 Population

The area under study in this research is the Freeport of Monrovia. The study population of this research was composed of haulage operators and haulage management staffs at the port. The haulage operators were composed of truck drivers/owners. The haulage management staffs were a make-up of gate officers and administrators and APM Terminal storage staffs directly involved with haulage operations at the port. Selection of staffs from the port was done based on their role played in the port as far as haulage is concerned and it is the researcher’s confidence they could have provided relevant information on the subject matter. These constitute the group of the port community that are pertinent to this research.

3.4 Study Area

The Freeport of Monrovia was selected to constitute the area of this research due to its busy nature. The Freeport of Monrovia is the Gateway to Monrovia’s economy (National Port Authority, 2012). The economy of Monrovia is heavily dependent on imports; almost 95 per cent of the imported goods enter the country through the Freeport of Monrovia. The Freeport of Monrovia also handles most of the very limited exports of the country (CIA World Factbook, 2013).
3.5 Population Sample

A targeted population of 77 participants was estimated to form part of this research. The 77 participants were drawn from the haulage operators as well as the haulage management staffs concerned with haulage operations at the port. The haulage operators were drawn from a list containing names of 90 operators issued by the Truckers Association of Liberia. The haulage management staffs of the port were drawn based on their roles played relative to haulage; hence, sample frame (list) became unnecessary.

Distribution of target groups by sample size:

<table>
<thead>
<tr>
<th>Target Group</th>
<th>Sampling Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haulage Operators (Truck Drivers/Owners)</td>
<td>70</td>
</tr>
<tr>
<td>Haulage Management Staffs (Gate officers, administrators, APM storage terminal staffs)</td>
<td>7</td>
</tr>
</tbody>
</table>

3.6 Sampling Procedures

A representative sampling technique (random sampling) was employed. The adoption of this sampling tool is based on the common characteristics and same experiences respondents share. The simple random sampling technique was utilized to select the sample size of haulage operators.

Non-representative sampling method-the purposive sampling technique was used to select the staffs from the port. Specifically, the modal instance sampling technique was used for the selection of staffs of the port. This sampling technique was employed to get respondents who
are directly in charge of haulage business in the port, and it is believed they had reliable and more technical information required for the study. Those selected for the interview had at least five years experience in the haulage industry.

3.7 Data Analysis

Data collected for this research are analysed using Statistical Package for Social Sciences (SPSS). This data analysis tool provides researcher the knowledge about the trend and meaning of the data. Primary data from the field collected by means of the questionnaires are analysed in order to derive relevant meanings from responses of the respondents. Frequency tables and charts were used to assist in the organization of the data for analysis. Descriptive analysis was used to analyse questionnaires' data. Absolute figures were converted into percentage (%) so as to have a common basis for assessing the figures generated from the raw data. The interview data, researcher's observation notes and secondary data were analysed using appropriate narrative descriptions.
CHAPTER IV: PRESENTATION OF RESEARCH FINDINGS

4.1 Introduction

This chapter comprises of research data collected from a sample size of seventy five (75) respondents who are haulage operators and officials from the haulage management department of the Freeport of Monrovia, and the researcher's observation. These include seven (7) officials from the port's haulage department and sixty eight (68) haulage drivers. The seven officials were interviewed with the aid of an interview guide. Seventy (70) questionnaires were issued to the haulage drivers and sixty eight (68) representing ninety seven per cent (97%) success rate of the questionnaires issued were retrieved.

Some questionnaires data are grouped into charts and tables. Interview data and researcher's observation are narratively described. The first section of this chapter presents the analysis of the sixty eight (68) responses from the questionnaires and the second section deals with the analysis of information obtained from the seven (7) respondents interviewed. The researcher's observation is reflected in the third section of this chapter.

The analysis in section one is done in the order of socio-demographic characteristics, knowledge, and attitude of respondents. The socio-demographic characteristics looks at the gender, age, educational status of respondents and their experiences while the knowledge deals with the respondents understanding of the research problem. The attitude focuses on their perspective relative to the problem researched.
4.2 Analysis of Questionnaires Responses and Outcomes

This section presents the analysis of the 68 responses from the questionnaires administered to respondents.

4.2.1 Socio-demographic Characteristics of Respondents (Haulage Drivers)

The socio-demographic characteristics comprise the sex of respondents, age of respondents, educational level and the number of years the respondents have worked in the haulage industry.

The Sex of Respondents

Of the total of sixty eight (68) respondents who responded to the questionnaires administered to them, majority were males (66 representing 97%) and the females totalled two (representing 3%). From this statistics, it can be reasoned that more men were represented in this research than women were and the opinions given were male-dominated.

Age of the Respondents

From the research, it was realized that most of the haulage operators (drivers) fell between the ages of 30-39 years, which was represented by 70.6% of the total number of respondents. Haulage Drivers below 20 years of age formed the least age group (1 representing 1.5%) of the total number of respondents. Drivers between the ages of 20-29 years and 40-49 years were represented by 11.8% respectively equating the two age ranges of haulage drivers.
Table 4.1 Ages of Respondents

<table>
<thead>
<tr>
<th>Number of Years</th>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 20 years</td>
<td>1</td>
<td>1.5</td>
</tr>
<tr>
<td>20-29 years</td>
<td>8</td>
<td>11.8</td>
</tr>
<tr>
<td>30-39 years</td>
<td>48</td>
<td>70.6</td>
</tr>
<tr>
<td>40-49 years</td>
<td>8</td>
<td>11.8</td>
</tr>
<tr>
<td>50-59 years</td>
<td>3</td>
<td>4.3</td>
</tr>
<tr>
<td>Total</td>
<td>68</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Field Work, 2013

Educational Level and Experiences of Respondents

The educational level ranged from basic level of education to tertiary level of education. The study revealed that a greater number of the respondents representing 61.8% had attained the basic level of education. Four of the respondents representing 5.9% had attained tertiary level education. The rest of the respondents (22) representing 32.4% were of vocational and secondary education qualifications. This include 11 (16.2%) who have attained vocational level education and 11 (16.2%) with secondary education level qualification.

The figure below supports the information presented above.
The question of ‘how long have you been working in the haulage industry’ was put to all the respondents. The responses of the respondents showed that many of them (60) representing 88% have worked in the haulage industry for more than one year.

Many of these respondents (40) representing 59% had worked in the haulage industry for between 1-10 years, and others (20) representing 29% for between 11-20 years. There were other respondents (8) representing 12% who had worked for less than one year.
Table 4.2 Years of Working in the Haulage Industry

<table>
<thead>
<tr>
<th>Years</th>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 year</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>1-10 years</td>
<td>40</td>
<td>59</td>
</tr>
<tr>
<td>11-20 years</td>
<td>20</td>
<td>29</td>
</tr>
<tr>
<td>Total</td>
<td>68</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Field Work, 2013

4.2.2 Knowledge and Attitude of Respondents

In this section, the views of the respondents with respect to their understanding of who regulates the port, gate and storage terminal procedures, and haulage management challenges experienced by them are presented.

Respondents' knowledge about the regulatory authority of the Freeport of Monrovia

The respondents were made to provide the name of the regulatory authority at the Freeport of Monrovia. The question was intended to gather how well the respondents understand the environment in which they do their business. Majority of the respondents (66) representing 97% of the total respondents acknowledged the National Port Authority of Liberia (NPA) as the Regulatory Authority. Interestingly, two of the respondents representing only 3% indicated that APM Terminals regulates the Freeport of Monrovia.

Table 4.3 below evidence the data presented above.
Table 4.3 Name of the authority that regulates the Freeport of Monrovia

<table>
<thead>
<tr>
<th>Name of Authority</th>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Port Authority, Liberia</td>
<td>66</td>
<td>97</td>
</tr>
<tr>
<td>A.P.M Terminal, Liberia</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>68</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Source: Field Work, 2013

Respondents’ knowledge about the duration for the Receipt of Cargo at the Freeport of Monrovia

To this closed ended question, respondents were asked to select from the list of times given them indicating how long it takes them to receive cargo from the port. Many of the respondents constituting 72% replied that it takes them 1-3 days to receive cargo from the port. 25% of the respondents said it takes less than one day to receive cargo from the port. Two of the haulage drivers making up 3% of the total respondents confirmed it takes up to 3-5 days for haulage operators to receive cargo from the Freeport of Monrovia. The table below shows how respondents responded to this question.

Table 4.4 How long does it usually take you to receive cargo at the Port

<table>
<thead>
<tr>
<th>Number of Days</th>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 day</td>
<td>17</td>
<td>25</td>
</tr>
<tr>
<td>1-3 days</td>
<td>49</td>
<td>72</td>
</tr>
<tr>
<td>3-5 days</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>68</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Source: Field Work, 2013
Respondents’ knowledge about the duration for the Delivery of Cargo to the Freeport of Monrovia

Respondents were given the same list of times to determine how long it takes them to deliver cargo at the Freeport of Monrovia. From the responses, majority of the respondents represented by 71% revealed that 1-3 days is the duration for delivery of cargo to the port by haulage drivers. However, some of the haulage drivers (29%) of the total respondents said it takes them less than one day to deliver cargo at the port.

Respondents’ knowledge about the procedure to enter and exit the Freeport of Monrovia when receiving or delivering cargo

Respondents were asked to explain the process they follow to enter and exit the port when receiving and delivering cargo. The question was posed to get the respondents understanding of the gate procedures. It was realised that responses to this question were related, in that, views given on what the gate procedures are were not varied.

The summary of what the haulage drivers are saying is outlined as followed: After the cargo owner has received the delivery order, the cargo owner goes to APM Terminal’s administrative department and pay for the handling charges and get the pass for the gate. The cargo owner obtains a haulage truck and comes to the port gate with his/her truck. The gate security officers inspect the truck and gate pass, the truck driver pay for his/her toll ticket and is allowed to enter the port. When all goes well in the port and the truck has to exit, a copy of the Equipment Report (E/R) obtained from the administrator at the out gate through
the out gate clerk is signed by the truck driver and the driver delivers it to the securities at the exit gate then the truck is scanned.

Respondents' knowledge about the process to receive cargo at the storage terminal
This open ended question was intended to test the respondents' knowledge of the import storage terminal procedures since they are required to operate with those procedures. The study revealed that the respondents demonstrated high knowledge of the procedures confirmed by the unvaried responses provided. The respondents explained the process as followed: At the waiting site the truck driver submits his/her gate pass to the gate clerk, the gate clerk takes the pass to the gate administrator who processes the pickup ticket, the driver gets the pickup ticket from the Clerk and goes to the storage yard and give the pickup ticket to the Officer in the Yard. Using the pick up ticket, the terminal operator orders the restacker to locate and load the cargo on the truck.

Respondents' knowledge about the process to deliver cargo at the delivery yard
In addition to the previous question, respondents were made to also explain the procedures for delivery of cargo at the Freeport of Monrovia. Again the respondents showed their knowledge of the export storage terminal procedures justified by their responses which were not varied from the established procedures at the port.

In responding they outlined the process which is summarized as followed: When a truck enters the yard it goes to the waiting site then the clerk collects the gate pass and take it to the
administrator for processing the permit which is used to proceed to customs yard for scanning of the cargo and customs give clearance permitting the truck to go to the storage yard. The storage yard officers collect the permit from the driver and verify then the truck is unloaded.

Respondents' knowledge about haulage management efficiency at the Freeport of Monrovia

This section looks at how haulage management at the Freeport of Monrovia is impacting the haulage operators' operations with respect to their efficiency. Many of the respondents (67) representing 98.5% of the total respondents believe that haulage management at the port is not efficient in a way that will positively impact their operations. However, one driver (1.5%) believe that haulage is managed at the port in a way that improves his efficiency in delivering to the expectation of his customers.

In a follow up question, respondents were asked to provide explanation if they believe haulage is not managed at the port in an efficient manner to impact their operations. Of the total 67 respondents that responded to this question, many of them (24) representing 35.8% highlighted delay in documentation processing as the major reason for the inefficiency of haulage management at the port. They believe that the delay cause them to delay in delivering the cargo to their clients as expected and shorten their daily income as they are unable to secure other contracts which could be handled in the same day should the process be speedy.
Other respondents (20) representing 29.9% indicated corruption at the port gates, storage terminals and administration as factors responsible for the inefficient haulage management at the Freeport of Monrovia. Still another group of respondents (12) constituting 17.9% blamed the inefficient haulage management at the port on the availability of insufficient cargo handling equipment. They opined that limited cargo handling equipment could also cause delay in getting or delivering cargo at the port. They based their argument on the fact that limited equipment requires limited cargo handling, which makes the loading and unloading process slow thereby affecting the receipt and delivery process.

A small segment of the respondents (5) representing 7.5% intoned that the gate procedures is rigorous and inflexible. They hinted that the gate procedure is not practical and that is why they find difficulties in entering the port. Another group of respondents (9%) also attributed poor Information Communication Technology (ICT) system and the frequent system down to the inefficient haulage management at the port. Table 4.5 below depicts the results explained above.
Table 4.5 Give explanation for your answer

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insufficient cargo handling equipment</td>
<td>12</td>
<td>17.9</td>
</tr>
<tr>
<td>Corruption at the port gates, storage terminals and administration</td>
<td>20</td>
<td>29.9</td>
</tr>
<tr>
<td>Poor ICT system and always down</td>
<td>6</td>
<td>9.0</td>
</tr>
<tr>
<td>Delay in processing of document</td>
<td>24</td>
<td>35.8</td>
</tr>
<tr>
<td>Process of entering and exiting the port is strenuous</td>
<td>5</td>
<td>7.5</td>
</tr>
<tr>
<td>Total</td>
<td>67</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Field Work, 2013

Respondents’ response to Challenge (s) doing business with the Freeport of Monrovia

The challenges faced by haulage operators in their operations at the Freeport of Monrovia were assessed as part of the objectives of this research. Respondents of this study were therefore asked if they face any challenge (s) doing business with the Freeport of Monrovia. In a follow up question based on the response from the previous question, respondents were given list of operational challenges to identify the categories under which their challenges fall. From the available data, it is ostensible that haulage operators face challenges in doing business with the Freeport of Monrovia.

This is because out of the sixty eight (68) respondents, as many as 66 of them representing 97% thought that doing business with the port is challenging to them. Only 2 (3%) respondents suggested that they face no challenge (s) in doing business with the port.
This line of thought was further probed when respondents were asked to identify their challenges from the list of operational challenges. The data obtained showed that many of the respondents agreed to many of the operational challenges listed.

As much as 65 (98.5%) of the respondents identified huge bureaucracy in documentation procedures, delay in loading at storage terminal and delay in unloading at delivery yard respectively as major challenges haulage operators encounter in their operations at the Freeport of Monrovia. Many respondents (62) representing 93.9% and (61) representing 92.4% respectively, also specified bribes to gate securities/administrators or terminal operators and limited parking lots outside the port premises as some major challenges they are confronted with in dealing with the port. Poor communication system and poor road network in the surrounding of the port also surfaced as operational challenges haulage drivers experience at the Freeport of Monrovia. Fifty six (84.8%) of the respondents acknowledged poor communication system as a challenge while another 48 (72.7%) believe that the poor road network around the port area is a challenge they have to encounter on a daily basis.

However, payment for toll tickets and accidents in the port premises are not of problems to the haulage operators. The researcher who observed a better coordination in toll tickets sales and traffic control in the port premises also confirmed this fact.

Table 4.6 below affirms the information presented above.
Table 4.6 Operational Challenges faced by Haulage Operators at the Freeport of Monrovia

<table>
<thead>
<tr>
<th>Categories of Operational Challenges</th>
<th>Responses</th>
<th>Per cent of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Too much bureaucracy in processing document</td>
<td>65</td>
<td>15.29</td>
</tr>
<tr>
<td>Long time waiting to load truck at the storage terminal</td>
<td>65</td>
<td>15.29</td>
</tr>
<tr>
<td>Long time waiting to unload truck at the delivery yard</td>
<td>65</td>
<td>15.29</td>
</tr>
<tr>
<td>Bribes to gate securities/administrators or storage terminal operators</td>
<td>62</td>
<td>14.59</td>
</tr>
<tr>
<td>Limited parking lots for trucks waiting to be processed for entering the port</td>
<td>61</td>
<td>14.35</td>
</tr>
<tr>
<td>Poor communication system (calling truck drivers on time)</td>
<td>56</td>
<td>13.18</td>
</tr>
<tr>
<td>Poor road network in the surrounding of the port</td>
<td>48</td>
<td>11.29</td>
</tr>
<tr>
<td>Too much bureaucracy in paying for toll tickets</td>
<td>2</td>
<td>0.48</td>
</tr>
<tr>
<td>Accidents in the port premises (trucks crashing and colliding)</td>
<td>1</td>
<td>0.24</td>
</tr>
<tr>
<td>Total</td>
<td>425</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: Field Work, 2013

In addition to the identification of operational challenges, respondents were made to provide reasons for the challenges recognized by them. The respondents mostly ascribed the delay in documentation processing to long range of offices documents have to pass through before completion. The respondents believe that the delay creates the room for soliciting bribes from haulage drivers, which increase their operational expenses. On the challenge of limited parking lots, the respondents linked this challenge to the port having limited land space. From the researcher's view based on observation, the port has limited land space, which makes it impractical to apportion space for parking lots. This is a challenge that results to haulage drivers parking on the shoulders of a single two-lane road laying adjacent the port. Other
respondents see the single two-lane motor road that leads to the port as poor road network and affects their operations due to the huge traffic the road attracts.

Yet other respondents pointed to few cargo handling equipment (not well functional) and power outage as reasons for the delay at the storage terminal and delivery yard. The major reason cited by respondents for the challenge of poor communication system is the lack of radio communication system.

Respondents’ knowledge of difficulty faced with the processing of their documents at the port gates

Probing on the issue of difficulties with processing of document at the gate, respondents were requested to give one difficulty each encounter with the processing of document(s) at the gates. Majority (61.7%) gave the long queue at the entrance gate and bribes collection at entry and exit gates as major difficulties they face in their documentation process at the gates; this was followed by poor communication network as emphasized by 11 respondents (16.2%). Other respondents (7) equated to 10.3% see the careless attitude exhibited by gate securities officers as a challenge in the processing of their documents at the gates.
Table 4.7 Give one difficulty you face with the processing of your documents at the Gates

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of respect for drivers by gate securities and handling document carelessly</td>
<td>4</td>
<td>5.9</td>
</tr>
<tr>
<td>There is a long queue to entrance and bribe collection at entry and exit gates</td>
<td>42</td>
<td>61.7</td>
</tr>
<tr>
<td>Poor communication network</td>
<td>11</td>
<td>16.2</td>
</tr>
<tr>
<td>Frequent system breakdown</td>
<td>4</td>
<td>5.9</td>
</tr>
<tr>
<td>Don’t-care attitude by security officers</td>
<td>7</td>
<td>10.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>68</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Source: Field Work, 2013

4.3 Analysis of Interview Responses

This section presents the responses from the seven haulage management officials of the Freeport of Monrovia interviewed.

**Background information of respondents**

The interviews were conducted with a total population of seven (7) persons comprising haulage management officials of the Freeport of Monrovia. The gender categorization of the interview respondents includes four (4) males and three (3) females. All seven respondents have attained up to tertiary level education.
Respondents' knowledge about receipt and delivery procedures relative to haulage operators at the Freeport of Monrovia

Responding to this question, the officials indicated that the consignor/consignee, the agent, or broker has to obtain the Delivery Order (DO) and Bill of Lading from the shipping line and process the entry permit that will authorize the truck driver to enter the port. The truck driver is required to take the entry permit to the entry gate and go through the gate formalities enumerated by the haulage operators in earlier questions. The haulage management officials further indicated that the gate clerk collects the entry permit from the driver and take it to the gate administrator who processes the pickup ticket that the driver requires to pick up the cargo from the storage terminal. For receiving goods from haulage drivers, the officials maintained that the process for entry remains the same except that customs must clear the goods before they are sent to delivery yard.

The haulage management staffs stressed that it is the obligation of the cargo owner or agent to complete all necessary documentation before obtaining a haulage truck to enter the port to either receive or deliver cargoes. The rest of the procedures enumerated by these officials correspond to those given by the haulage drivers in earlier responses.

Respondents' knowledge about storage yard procedures relative to haulage operators at the port

This question was intended to know how haulage drivers receive and deliver cargo at the discharged section of the storage terminal. In response, the haulage officials stated that haulage drivers require pickup tickets to receive containers or cargoes from the storage terminal. The officials stated that trucks must be at the waiting site before the pickup tickets
are processed. They said the gate clerk will collect the gate passes from trucks that are at the waiting site on a first come first serve basis and take them to the gate administrator for processing of the pick up tickets. The drivers collect the picket up tickets from the gate clerk and proceed to the storage terminal on a numbering basis. The drivers present the pick up tickets to the storage terminal operators to locate and load the cargo on the trucks then the trucks proceed to the out gate. Responding to the delivery aspect, they indicated that the drivers need custom inspection clearance from the custom authority in the port to deliver goods to the storage yard. The rest of the procedures are similar to those enumerated by the haulage drivers.

Respondents' knowledge about the challenges associated with the storage yard management at the port

In addressing this question, the officials admitted that there are still few problems with storage terminal management. They narrated that technology to automate the storage and discharged terminal is an issue they are trying to address. They also explained that cargo-handling equipment can cause them some times to load and discharge cargo than the estimated time, due to the limited number and condition of equipment.

Respondents' knowledge about parking spaces for haulage trucks outside the port’s gate

Answering the above question, the haulage staffs at the port admitted to the limited parking lot provided by the port for haulage trucks. They explained that trucks waiting to enter the port are normally parked on the edge of the Main Street near the port’s fence. The officials
believe the situation is responsible for the presence of the huge motor road traffic around the port, which also affects the haulage operators. They attributed the problem to the limited land space and location of the port. They also revealed that the port only has a waiting site in the premises that can accommodate up to four haulage trucks at a time.

Respondents' knowledge about toll tickets sales challenges
This question received an overwhelming "NO" in response from the haulage management officials at the port. They only indicated that toll ticket is of no issue at the Freeport of Monrovia, which confirms earlier responses from haulage operators to earlier question posed.

Respondents' knowledge about average time taken by haulage operators to receive and deliver cargo at the Freeport of Monrovia
This question was intended to get the respondents knowledge on the delay of haulage operators by the port and the estimated time taken in the receipt and delivery of cargo at the port. The respondents attributed the refusal or failure of the haulage operators to follow the laid down procedures to the key factor that influence the delay of the trucks in the receipt and delivery of cargo. They based their stand on the fact that truck drivers usually want to make their way into the port before the time slated for them to enter, and getting them out to allow entrance by procedure creates delay at the gate. They also hinted that cargo agents are in the habit of arranging the haulage before the completion of the cargo documentation process, which causes the driver longer time waiting to receive or deliver cargo.
The haulage officials further narrated that cargo handling equipment and documentation system breakdown are some factors that influence the time trucks spend when receiving and delivering cargo at the port. Two of the officials put the estimated time haulage drivers take to receive and deliver cargo at the port at five (5) hours to fifteen (15) hours, which is technically less than a day. The remaining five (5) haulage staffs estimated this time at one to two days based on the prevalence of the factors presented above.

Respondents' knowledge about the efficiency of haulage operations at the Freeport of Monrovia

To this question, the haulage management staffs expressed mixed views. Three (3) of the officials responded “yes” to this question indicating that despite the minor challenges enumerated by them in previous questions there is still high efficiency of haulage operations at the port. The remaining four officials believe that the efficiency rate of haulage operations at the port is not at an expected level in the face of these challenges enumerated, but stressed that the port is working on improving the efficiency of haulage operations.

Respondents' knowledge about challenges the port face in dealing with haulage operators

Again, the haulage officials maintained an overwhelming “yes” posture in respond to the above question. They explained that the problem is centred on some haulage drivers back passing the normal laid down procedures in order to make quicker entries into the port and to evade the proper duties charged, thereby utilizing unapproved routes. They also hold on the view that trucks that go in the port to deliver cargo do not exit but stay in to obtain contract to receive cargo causing delay to other trucks waiting outside to enter the port. The haulage
officials pointed out that these challenges most often result to congestion of haulage trucks in the port premises.

Respondents' suggestions on the way forward for haulage at the Freeport of Monrovia

The haulage officials revealed that putting the port under a public private partnership agreement with APM Terminal presents a brighter future for haulage management at the Freeport of Monrovia. They listed some of the projects in plan by APM Terminals and the National Port Authority as expanding storage yard, automating gate procedures, and establishment of parking lots for haulage trucks. The officials also revealed that there is a plan to equip the storage and discharged yards with adequate cargo handling gears. They believe when all of these are properly implemented will put haulage management at the port in the proper perspective and to cut the problem of congestion of trucks inside and outside the port premises.

4.4 Researcher's Observation

In respect of the gate procedures, while the respondents demonstrated good knowledge and understanding of the procedures, the researcher noticed that some haulage drivers do not honour the procedures. Some factors observed by the researcher, which are responsible for the disregard to these procedures by some drivers, include delay in documentation processing, corruption at the gates, and impatience of some drivers.
The single-entry gate has a number of security officers including the seaport police (originally responsible for the gate), immigration officers and Liberia National Police officers all interacting with haulage drivers at the same time without due regard to the gate procedures thereby creating crowdedness of the port’s entry gate. On many occasions while collecting data, the researcher witnessed more than two security officers giving directives to the respective truck drivers they interacted with to enter at the same time, something that usually cause misunderstanding amongst the officers at the gate as to whose client to enter first. In these instances, it was noticed that trucks enter without permits or gate passes and occupy the waiting site in the port preventing those who have legitimately obtained gate passes from entry. The unauthorized and irregular entry of some trucks and effort to get them out create congestion and delay for those that have legitimate passes awaiting entry.

Another behavioural pattern observed in haulage drivers relative to the gate process is that, those drivers that enter the yard to delivery cargo/container normally do not exit as per the procedures. Rather, they occupy the waiting site in the port waiting for clients since it will be advantageous for a client who wants to get his or her consignment out quick. Because the waiting site in the port must have space to accommodate truck (s) before trucks are allow to enter, truck drivers who have passes to enter will have to wait outside for the longest until those inside are served or those illegal entrants are put out which takes some times.

The researcher observed that the effect of the challenge of poor communication system at the port’s gate leaves haulage truck drivers to park their trucks at distances and converge at the entry gate to listen to their gate pass numbers when it is time. This also contributes to the
delay at the entry gate as drivers who gate pass numbers are called take about five to ten minutes to get to where their trucks are parked before maneuvering to get to the gate for inspection.

Considering the duration for receipt and delivery of cargo at the port, the researcher observed that some haulage drivers took more than one day to get to the storage terminal for cargo after being contracted by the cargo owner. The truck drivers normally initiate the process with the intent to get out in few hours, but delay in the system results to them completing the next day. Again as was observed in the receipt process, similar situation occurs in the delivery process.

As per the normal process, the gate clerk is to collect gate passes from truck drivers at the waiting site in the port on a first come first serve basis and with no extra cost to the drivers. On the contrary, the researcher observed that this system is not applied. It was noticed that drivers that enter lastly but in the position to bribe the gate clerk will have their passes collected first and pick up tickets processed. This practice has become a culture as some drivers see it as a way of expediting their process though they complain on it. On two occasions, the researcher caught up with haulage drivers and gate clerk in confusion on the unfair behavior of the gate clerk.
CHAPTER V: SUMMARY, CONCLUSION & RECOMMENDATIONS

5.1 Introduction

This study sought to assess the challenges confronting haulage operators in the receipt and delivery of cargo at the Freeport of Monrovia, focusing on the gate and storage terminal operations. The study specifically sought to address the following objectives:

➢ Assess the receipt and delivery operations at the Freeport of Monrovia
➢ Examine the challenges facing haulage operations at the Freeport of Monrovia
➢ Find out the time taken on average for the receipt and delivery of cargo at the Freeport of Monrovia
➢ Identify possible measures for the enhancement of haulage operations at the Freeport of Monrovia.

This section therefore recapitulates the findings of the data collected from the seventy five (75) study respondents comprising haulage operators and haulage management officials of the Freeport of Monrovia, conclusion, and recommendations resulting from the study.

5.2 Summary of Findings

The following observations with respect to the study were made and have been summarized below. Summaries from questionnaires responses are presented first, followed by interview responses.

➢ Respondents for this study were males and most of the study respondents fell between the ages of 30-39 years.
➢ Majority of the respondents had attained the basic level of education. A few of them fell within the secondary and vocational levels of education.

➢ Many of these respondents had worked in the haulage industry for many years, thus they were able to demonstrate that they have a good background and understanding of the field and also how haulage operations at the Freeport of Monrovia affects their operations.

➢ On their understanding of who the regulatory authority of the Freeport of Monrovia is, they acknowledged the National Port Authority as the regulatory authority of the port.

➢ According to the respondents, the average time taken by haulage operators to receive/deliver cargo at the Freeport of Monrovia is 1-3 days. Few respondents confirmed that haulage operators could take less than one day to receive/deliver cargo at the Freeport of Monrovia.

➢ On their knowledge of the gate, import and export storage terminals procedures, views given by the respondents were not varied showing that they understood what the procedures are. The cargo owner is responsible for processing the gate entry pass before contracting a haulage operator. Haulage operators required gate pass in order to access the port, and are to enter based on the gate pass numbering system. Haulage operators require pickup tickets to receive cargo from the import storage terminal and customs clearance to deliver cargo to the delivery yard. Haulage drivers are required to wait at the waiting site in the port until their pickup tickets and customs' clearances are processed. While they demonstrated good knowledge of the procedures, some haulage drivers do not adhere to these procedures due to delay in documentation processing, corruption at the gates and impatience on their part. The port entry gate has huge presence of mixed security officers who create the condition for haulage drivers to disregard the established procedures in place.
Based on results obtained from the study, haulage management at the Freeport of Monrovia is inefficient. The inefficiency affects the operational costs of haulage drivers and reduces their chance of maximizing greater incomes.

The prevalence of delay in documentation processing, corruption at the gates and limited cargo handling equipment are causing inefficiency of haulage management at the Freeport of Monrovia.

The general impression of the study is that there are challenges associated with the operations of haulage operators at the Freeport of Monrovia, which the haulage operators confirmed as the result of the study shows. The major challenges faced by haulage operators in their operations at the Freeport of Monrovia include huge bureaucracy in documentation procedures, delay in loading and unloading at storage terminals, corruption at the gates, limited parking lots, poor communication system and poor road network in the surrounding of the port. The huge bureaucracy in the documentation procedures is the result of the stages documentation goes through before completion, which is intended to solicit bribes from haulage drivers. The location and limited land space of the port prevent it from allotting adequate parking lots for haulage drivers. Haulage trucks park on the edge of the narrow road adjacent the port to await entry into the port.

The usually long queue at the port's entrance gate and corruption at the entry and exit gates are major issues that confront haulage operators in processing their documents at the gates.

Summary of Interview Findings

All respondents had attained the tertiary level of education and held management positions ranging from senior managers, junior managers and field managers.
The Freeport of Monrovia like other modern ports has in place procedures for haulage management. The procedures are simple and cleared to understand as was demonstrated by haulage operators in respond to their knowledge of the procedures.

In the view of the respondents, the port has some challenges in the areas of limited cargo handling equipment and limited parking lots. They said the limited equipment factor is translated into the time haulage drivers take to receive/deliver cargo at the port.

On the efficiency of haulage operations at the Freeport of Monrovia, respondents believe their operation is not efficient as expected base on the current challenges, but improvement is in the pipeline.

The port admits that it finds difficulties in dealing with some haulage operators who voluntarily violate the established procedures on haulage management. The respondents admitted to congestion of haulage trucks inside and outside the port premises.

The respondents see the contracting of the terminal operations of the port to APM Terminals as a boost to haulage management at the port. They indicated that APM Terminals and the NPA have a huge package for haulage management at the port to include expansion of storage terminals, provision of adequate equipment and automating gates procedures.
5.3 Conclusion

Following a detailed assessment of the challenges facing haulage operators in their operations at the Freeport of Monrovia, the study produces the following conclusions that actors in the haulage industry and port sector can consider in decision-makings. The conclusions are drawn based on the research objectives and the study results.

In respect of the receipt and delivery operations at the Freeport of Monrovia, while there are clear procedures understandable by haulage operators, the challenge lies in the adherence to these procedures. This challenge stems from the fact that haulage operators as demonstrated by the study results, lack the level of academic sophistication to comprehend the impact of their behavior on their operations and the port. Research has shown that people with higher academic achievements have higher levels of behavioral, emotional and social wellbeing. Had the haulage operators had some higher level of education, it could have put them in the position to know that violating the procedures creates delays at the port’s gate and affects their operations. Some of the port officers (gate securities, gate clerks, and administrators) responsible for implementing the procedures cannot be excluded from this challenge. The introduction of corrupt practices by some of these officers aimed at collecting unapproved fees from haulage operators to have them process outside the procedures impedes the proper implementation of the gate procedures and affects haulage operators by inflating their operational budgets. Beyond this point, this corrupt practice also exposes the port to possible security threats, as trucks are not properly inspected before entry into the port. When the port’s personnel uphold these procedures, the haulage operators will be compared to follow suite.
Additionally, the study examined the challenges facing haulage operations at the Freeport of Monrovia. As the study results show, corruption at the gate/administration, insufficient cargo handling equipment, limited parking lots, poor communication system and road network in the surrounding of the port are challenges associated with haulage operations at the Freeport of Monrovia. The outcome of the corruption is the undue delay in documentation processing which is a major challenge to haulage operators in their operations at the Freeport of Monrovia. These challenges have led to increase in the price of haulage services, which indirectly affects consumers’ price. Moreover, these challenges diminish the desire of entrepreneurs and investors venturing into haulage business, which if considered could help reduce the high unemployment rate of the country. Giving the significance of the port and the haulage operators to the economy of the country, the mitigation of these challenges demands immediate action, though the port officials disclosed that plans are under way to improve haulage operations at the port.

Considering the average time taken for haulage operators to receive or delivery cargo at the Freeport of Monrovia, the study found out that it takes minimum one day and maximum 3 days for haulage drivers to complete the process of receipt and delivery. The type of gate operating system and storage terminal challenges can affect the time it takes a haulage operator to receive or deliver cargo at a port. Port’s gate systems that are not automated and storage terminals using grounded storage system without sufficient equipment for cargo handling can cause delay in the receipt and delivery process. This is the situation the Freeport of Monrovia is faced with; hence delay in receipt and delivery of cargo by haulage operators will certainly exist.
The study identified possible measures that will mitigate these challenges and enhance haulage operations at the Freeport of Monrovia. The measures are presented in section 5.4 below.

5.4 Recommendations

➤ Giving that the port has limited land space, the Port Authority should engage landowners in the surrounding of the port and encourage them to venture into parking lots business. The Port Authority should also work with those landowners to ensure that fees charged for their services are set at a reasonable rate. This engagement should involve the haulage operators so that the outcome will face no challenge in acceptance. Additionally, the port should clear the waiting site with damaged equipment to accommodate more trucks at a time. With this, the challenge of limited parking lots can be addressed.

➤ Giving that the Freeport of Monrovia operates a grounded storage system, to reduce the time haulage operators spend at storage terminals, the port should procure additional modern cargo handling equipment that are required by this type of storage system. Reachstacker, forklift, hostlers and straddle carriers are very important for the enhancement of efficiency of the storage terminal at the port.

➤ The port in a short-range strategy needs to install Closed Circuit TV cameras at the gates and in administrators’ offices to constantly monitor the activities at those points. This will increase the efficiency of gate securities and administrators and drastically reduce the level of corruption at those points, which hinders the proper implementation of the haulage procedures.
➢ As a long-range plan, the port needs to transition from manual inspection of trucks to automated inspection. This requires the installation of biometric scanning machines at the gates that will electronically identify and process haulage drivers entering and exiting the port. The introduction of this automated system will reduce the human factor in the inspection, which eliminates corruption at this point. This also speeds up the scanning process and eliminates undue delays. To make this effective, staffs and haulage operators need adequate training on these gadgets.

➢ While there is an automated document processing system, the port needs to upgrade this system to speed up documentation processing.

➢ Although the port is relatively small, but given that trucking is the primary means of transport to and from the port, the opening of additional one entry gate will speed up the entry process. The opening toward the Bong Mine’s pier can be used as an entry gate to support the main entry gate. This will also help to reduce the huge concentration of haulage trucks at the main entry gate, which speeds movement and eradicate delay.

➢ Finally, for a policy to be effective it must involve all affected by that policy. That is to say, in preparation of any haulage policy or procedures, the port should involve the haulage operators who are largely affected by these policy or procedures. Moreover, regular meetings with haulage operators to evaluate the procedures or policy and update them on any new improvement are necessary. A special training section for haulage operators on the impact of their violations of the gate and storage terminal procedures will do a great help in insuring adherence to these procedures.
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INTRODUCTION

I am Augustine M. Manoballah, a Master of Arts student at the Regional Maritime University researching on the topic: “THE CHALLENGES FACING HAULAGE OPERATORS IN THEIR OPERATIONS AT THE FREEPORT OF MONROVIA”. This is part of the requirements for the award of a master degree from the Regional Maritime University in collaboration with the University of Ghana. I will be grateful if you could find time to fill this form to enable me carry out this research.

You can be assured that all information provided will be treated as confidential and will only be used for academic purpose.

INSTRUCTION:

Please tick the empty brackets ( ) relating to your responses to the questions that have been provided with answers and fill in the blank spaces that follow the questions without answers.

Part I: Demographic Background

1. Gender: Male ( ) Female ( )
2. Age Group: Below 20 ( ) 20-29 ( ) 30-39 ( ) 40-49 ( ) 50-59 ( ) 60 & above ( )
3. Educational Status: Vocational ( ) Basic ( ) Secondary ( ) Tertiary ( ) Post graduate ( )
4. How long have you been working in the haulage industry?
   Less than 1 year ( ) 1-10 years ( ) 11-20 years ( ) 21-30 years ( ) 31-40 years ( )
   40 years & above ( )

Part II: Knowledge, Attitude and Practice

5. Give the name of the authority you know that regulates the Freeport of Monrovia
6. How long does it usually take you to receive cargo at the port? Less than 1 day ( ) 1-3 days ( ) 3-5 days ( ) 1-2 weeks ( ) more than 2 weeks ( )

7. How long does it usually take you to deliver cargo at the port? Less than 1 day ( ) 1-3 days ( ) 3-5 days ( ) 1-2 weeks ( ) more than 2 weeks ( )

8. What is the process used for you to enter and exit the port when receiving and delivering cargo?

________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________

9. A. What is the process used for you to receive cargo at the storage terminal?

________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________

B. What is the process used for you to deliver cargo at the delivery yard?

________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________

10. Is haulage managed at the port in a way that improves your efficiency in delivering to the expectation of your customers? Yes ( ) No ( )

10b. Give explanation for your answer to question 10 above.

________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________
11. Do you face any challenge(s) doing business with the Freeport of Monrovia? Yes ( ) No ( )

12. If yes, does/do the challenge(s) fall under any of these groups? (Please tick)

12a. Too much bureaucracy in processing your document(s): Yes ( ) No ( )
   i. If yes, give reason(s) ____________________________________________

12b. Bribes to gate securities/administrators or storage terminal operators: Yes ( ) No ( )
   ii. If yes, give reason(s) ____________________________________________

12c. Limited parking lots for trucks waiting to be processed for entering the port: Yes ( ) No ( )
   iii. If yes, give reason(s) ____________________________________________

12d. Poor road network in the surrounding of the port: Yes ( ) No ( )
   iv. If yes, give reason(s) ____________________________________________

12e. Too much bureaucracy in paying for toll tickets: Yes ( ) No ( )
   v. If yes, give reason(s) ____________________________________________

12f. Accidents in the port premises (trucks crashing and colliding): Yes ( ) No ( )
   vi. If yes, give reason(s) ____________________________________________

12g. Long time waiting to load cargo/containers on trucks at the storage terminal: Yes ( ) No ( )
   vii. If yes, give reason(s) ____________________________________________

12h. Long time waiting to unload cargo/containers at the delivery yard: Yes ( ) No ( )
   viii. If yes, give reason(s) ____________________________________________

12i. Poor communication system (calling truck drivers on time): Yes ( ) No ( )
   ix. If yes, give reason(s) ____________________________________________
13. How do you rate port charges relative to your operations at the Freeport of Monrovia?
   Very low ( ) Moderate ( ) Very high ( )

14. Give one difficulty you face with the processing of your documents at the gates

15. In general, what are your suggestions/recommendations for improving haulage operations at the Freeport of Monrovia?
INTERVIEW GUIDE

Port Haulage Management Staffs

1. What procedures do you have in place for haulage operators to receive and deliver cargo at your port?

2. How are your storage terminal/discharged yard managed with respect to dealing with haulage operators?

3. Are there any problems with the storage terminal/discharged yard management?

4. Are there sufficient parking lots at the port?

5. Are there any problems with toll tickets sales at the port?

6. What are the factors that influence the time trucks spend when receiving/delivering cargo at the port?

7. Do you think that haulage operations at the Freeport of Monrovia are efficient?

8. Are there any challenges in dealing with haulage operators at the port?

9. What is the way forward concerning haulage at the port?