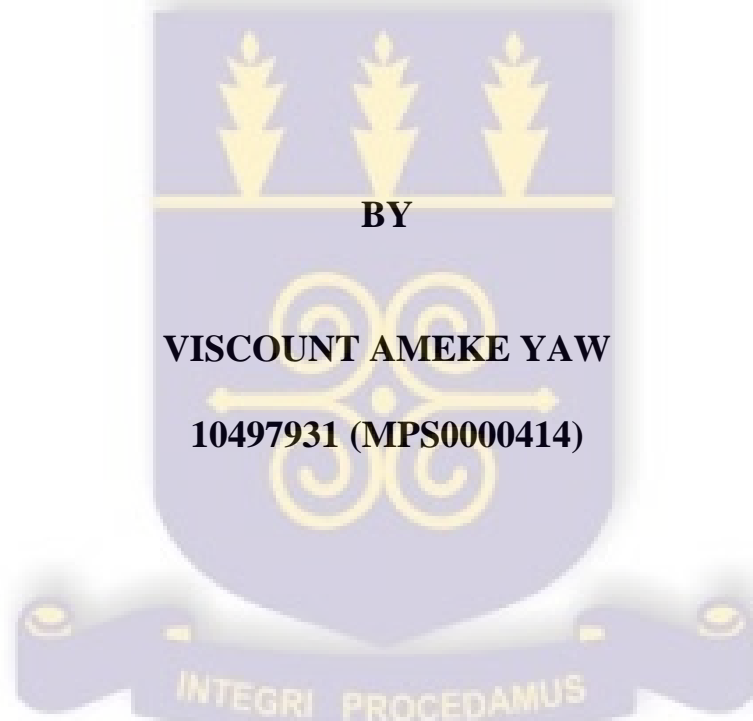


UNIVERSITY OF GHANA

THE EFFECT OF OPERATIONAL EFFICIENCY ON CUSTOMER SATISFACTION: THE CASE OF PORT OF TEMA



THIS DISSERTATION IS SUBMITTED TO THE UNIVERSITY OF GHANA,
LEGON IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD
OF MASTER OF ARTS DEGREE IN PORTS AND SHIPPING ADMINISTRATION

MAY, 2016

DECLARATION

I hereby declare that this submission is my own work towards the MA and that, to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the University, except where due acknowledgment has been made in the text.

VISCOUNT YAW AMEKE

(Student)

.....
Signature

.....
Date

MR. S. O. K YEBOAH

(Supervisor)

.....
Signature

.....
Date



DEDICATION

I dedicate this thesis to my father George Egbenya, My mother Sophia Doe Hoggar, My sisters Rita Esinam and Freda Stisofe, My in-law and his Children Oye and Ayeyi, and my best friend Enam Avorgbedor



ACKNOWLEDGEMENT

My sincerest thanks go to the ever faithful God for his grace and mercy bestowed on me during my study period. My outmost appreciation also goes to my supervisor, Mr. S.O.K Yeboah, for his fatherly love, encouragement and support he exhibited to me in making this research a success and to all of my lectures I say thank you.

My unriveted thanks are directed to all institutions, which provided information to this study.

My Matchless appreciation goes to my colleagues Mr. William Frimpong-Boadu, Akwesi Gorman, Rita Zatte, Bastien Tay and Prosper Numaworse for their support. I say God richly favour you all.



ABSTRACT

Often managers are tempted to believe that the only effect of operational efficiency is cost reduction and improvement in profit. Operational efficiency is not just about cost; other business objectives, including service quality, customer satisfaction, customer retention, sustainability and market expansion still have to be achieved in order to keep existing customers and revenue. Many

This thesis provides a background on ports operational efficiency through automation, and customer satisfaction and discusses a case study used to explore the effect of operational efficiency on customer satisfaction. The case study involves the use of a customer survey based on a scale called SERQUAL which is used as a measure of service quality. The research pointed out that that quality service induced by operational efficiency does have a positive influence on customer satisfaction. Thus, operational efficiency at port has high level influence on customer satisfaction. Therefore, the study recommended that managers should continue to improve upon operational efficiency to enhance higher level of customer satisfaction.



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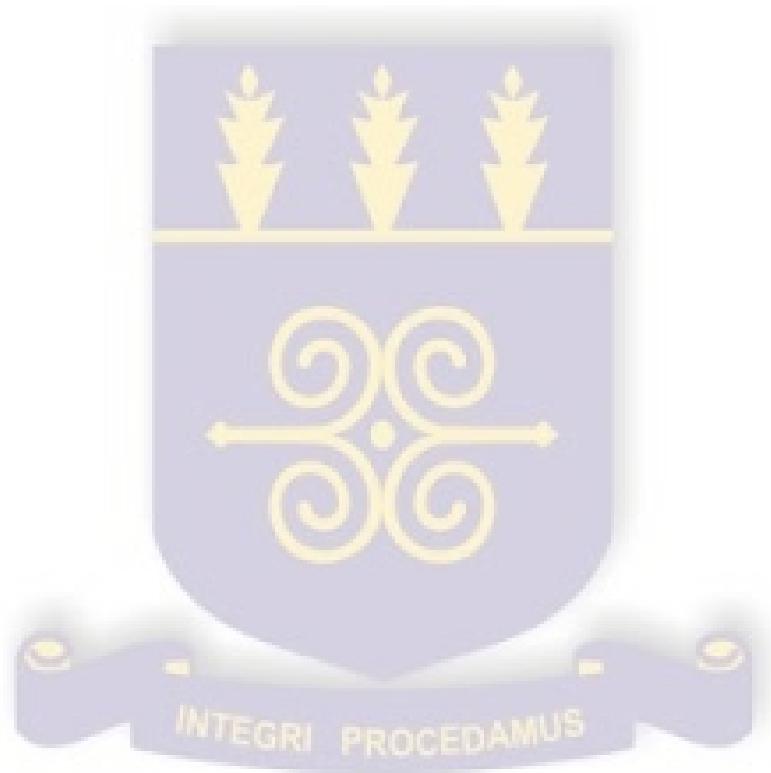
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CHAPTER ONE

INTRODUCTION

1.1 Overview of the study

This Chapter presents an overview of the research, the Background to the study, Problem Statement and Research Questions, Objectives of the Study and Methodology of the study, The Scope of the Study and Significance of the Study, Limitations of the Study and Organization of the Study.

1.2 Background to the study

The Ghana Ports and Harbours Authority (GPHA) is the statutory public organization mandated to build, operate, maintain and regulate Seaports in Ghana. The Authority owns and operates two ports in Tema and Takoradi. Port of Takoradi is currently being re-positioned through an extensive expansion and modernization programme to better serve the needs of the oil and gas, mining and trading sectors (Anamoo, 2013).

The GPHA was incorporated by PNDC Law 160 of 1986 which merged three organizations namely Ghana Ports Authority, Ghana Cargo Handling Company and Takoradi Lighterage Company (GPHA, 2006). The Vision of GPHA is to make the ports of Ghana the regional maritime hub and become the dominant oil and gas services center in the West Africa sub-region. In this regard GPHA will strengthen collaboration with private sector in the ensuing years to improve efficiency and productivity of the entire port service delivery and lower the cost of doing business (Anamoo, 2013). According to Anamoo (2013), GPHA will stimulate private capital investment necessary for expanding the capacity of the port to handle the ever increasing vessel and cargo traffic.

The Authority is a port facility and service provider. GPHA's two ports together handle about 17 million metric tons of cargo with vast opportunities for growth in the coming years. (Anamoo, 2013). The container traffic is projected to grow from the current one million to about two million TEUs in a decade time. GPHA (2013), in response to this anticipated or projection of growth GPHA spent US \$ 100 million to rehabilitate both ports resulting in the upgrading of facilities and equipment for high operational performance and efficiency (GPHA, 2006).

In Ghana, the national policy framework for development (GPRS II) has its overreaching goals as the attainment of a middle-income status (with a per capital income of at least US\$ 1000) by the year 2015 with a decentralized democratic government. A critical strategy under the private sector competitiveness is to improve Ghana's access to the global and regional market by strengthening the capacity and efficiency of institutions responsible for trade and export and also through support service as transportation (NDPC, 2006).

The water transport service is one of these support service. According to Holye and Hilling (1970), a Seaport is a link in the chain of transport through which the external trade of the nation passes, as a gateway. Seaports are the pivot around which maritime transport revolves. The activities of water transport in Ghana are carried out mainly through the Seaports. In Ghana the logistic hub for water transportation is the Port of Tema.

The Port of Tema is the bigger of the seaports in Ghana. It spans a land area of 3.9 million square meters and is flanked by an industrial city. The port receives an average of over 1650 vessels calls per year and these comprise an assortment of container vessels, general cargo vessels, tankers, Ro-Ro and cruise vessels amongst many others (GPHA 2013).

The ports environs serve as a logistic hub for stakeholders within the port community. The shipping routes and ports of call to and from Port of Tema span all continents of the world either through direct or transshipment services. In view of this, 70% of national trade and traffic is done through the Port of Tema with additional volumes of trade and traffic to and from the landlocked countries of Burkina Faso, Mali and Niger.

Notwithstanding the Mission of Port of Tema to provide efficient port facility and quality services to its clients and regulate logistics clusters in the port, Ports operations are encumbered with several challengers which have militated against the smooth functioning of various institutions, concerned with port management (Ollenu, 2002). Delays in the clearance process due to bureaucratic processes have been a major setback to operational efficiency. The bureaucratic process of the port operations resulted in officials extorting money from agents to fast track the clearing process (CEPS, 2004).

Before 2002 the increasing volume of Cargo handling by the port had overwhelmed the main stakeholders including GPHA, CEPS, Freight Forwarders and Clearing Agents as well as government controlled agencies leading to gross operational – inefficiencies (Bainiah, 2008). Port inefficiencies resulted from the fact that port operations were not computerized or automated. There was no common database for sharing port operational information (Bainiah, 2008).

The clearance time at both Port of Tema and Takoradi took at least three days (CEPS, 2004). Corrupt officials exploited the loop holes within the inefficient system. Due to the fact that automated data sharing was not possible, the single administrative document which was in hard copy form was easily forged by customs officials and declarants. The litany of the processes that

had to be followed in order to clear cargo resulted in numerous complaints and frustrations by Importers (Bainiah, 2008).

These several problems that confronted the port compelled the management of the port through its Major Stakeholder and the Government, to embark on a number of strategic reforms and policies. In 1990, the management of the ports, as part of its effort to ensure port operational efficiency, restructured customs operations to conform to international standards by implementing an Automated system for Customs Data (ASYCUDA) (CEPS, 2014).

The management of the ports, between 2001 and 2002, undertook the Gateway project to make Ghana's ports comparable to any. One critical element of the reform programme was the introduction of information and communication technology into Ports and customs management and operations. With the formation of a joint venture company, GCNet to design and operate a single window cargo clearance and documentation system for the Ports, the Electronic Data Interchange (EDI) was introduced.

The GCNet is a platform enabling Ghana Customs Management System (GCMS) to share with all the parties involved in the processing of trade documents and customs clearances.

On the word of Bainiah (2008), the GCNet caters for activities including:

- a. Electronic submission of manifests, entries, payment of duties confirmed electronically by banks;
- b. Sharing of files by Customs officials;
- c. Transferring of electronic messages between Customs and Importers; and
- d. Enhancing and facilitating import procedures.

Consistent with Bainiah (2008), the institution of the GCNet, stemmed in the following observations:

- The reduction in clearance time. For example, at Tema and Takoradi harbour, clearance time, which hitherto was at least three days, has been reduced to at most two days.
- Generation of uncleared cargo list. The GCNet can generate this list at any given time, thus CEPS no longer rely on GPHA to provide this. This procedure was previously been flawed due to the possibility of inaccurate and erratic data being presented. CEPS no longer have to contend with flying entries since all cargoes are processed through Customs.
- The system has also generated real time revenue and trade statistics for decision making purposes. For example, in 2007, Customs was able to provide Customs Administrators of Burkina Faso and La Cote D'Ivoire with comprehensive data on transit cargo destined for their respective countries only a few hours after request.

Notwithstanding these positive observations, Bainiah (2008) still contests that, trials for dispensation shipping document were unwieldy even though clearance time had been reduced. Many studies have proven that operational efficiency can be achieved when skilled personnel are using state-of-the-art automation functions. On this basis GCNet deployed its software GICCS phase two to enhance operational efficiency subsequent to customer satisfaction. The Ghana Integrated Cargo Clearance System (GICCS) platform is Ghana's Single window portal that houses the Manifest, Declaration and logistics module in the goods clearance chain.

The main module in the GICCS include:

- Manifest submission and payment related processing
- Declaration submission, Validations, Notifications, and Payment related processing.
- Logistics modules has Cargo Tracking, Container transfer, delivery order submission and tracking features

The manifest module allows for the lodgment of Cargo manifest for customs purpose and its subsequent approval. Freight Forwarders use this module for the lodgment of consolidated cargo while it also caters for the amendment of cargo manifest by parties and its approval by Customs. The Declaration module allows for online submission of Customs declaration 24/7 by registered declarants to Customs. GICCS improves the visibility of cargo status to commercial users of the system and trading community as it provides cargo tracking capability (including RFID tags on containers) which will enable the users (Importer, Port Authority and Inland container Terminals) to have accurate information of movement of container and delivery order.

The quest by GPHA to expand the ever increasing competitive transit market which is largely controlled by Ivory Coast within the Sub region demands that customer centric approach must be employed. Management must look for ways to understand, attract, retain and build intimate long term relationship with profitable customers (Kotler, 2006; Gronroos, 1994). One critical customer-centric approach which has widely been accepted by philosophers is customer satisfaction. According to research, a very satisfied customer is nearly six times more likely to be loyal and to re-purchase and recommend a product/service to family and friends than a customer who is just satisfied. It is again believed that satisfied customers tell five other people about their good treatment, and that five-percent increase in loyalty can increase profits by 25% - 85%.

Conversely, the average customer with a problem eventually tells eight (8) to ten (10) other people (SPSS White paper, 1996; Limayem, 2007).

Numerous studies have established the fact that customer satisfaction (CS) drives customer retention and loyalty (Heskett et al., 1997; Heskett et al., 1994; Reichheld and Sasser, 1990). It is believed that the average business spends six (6) times more to attract new customers than to retain old customers. Customer retention is, therefore, basically a product of customer loyalty and value which in turn is a function of the level of customer satisfaction or dissatisfaction (CS/D) (Reichheld, 1996). Organisations that have long-term perspective for growth are, therefore, increasingly developing measures to ascertain customer satisfaction/dissatisfaction. While effective customer complaints could be used to ascertain, it has its own shortcomings since the average business firm never hears from 96% of their unhappy customers and 91% will never come back; they get back; only 4% of dissatisfied customers will complain (SPSS White paper, 1996). Consequently modern business organizations adopt rigorous qualitative and quantitative mechanisms to determine customer satisfaction (CS) for effective marketing strategy and decisions. In this regard, measuring customer satisfaction provides feedback on how successful an organization is at providing products and/or services to the satisfaction of customers at the marketplace.

There is also much evidence in the literature to the fact that CS is principally driven by service quality of a firm from the perspective of its customers (Thompson, 2004; Gronroos, et al., 1996; Xu et al, 2002; Dyche, 2001; Ryals & Knox, 2001; Stone, 2000). This has empirically informed practitioners of the necessity of developing, communicating, delivering and improving the quality of the service to customers. This has led to the growing interest in the development of many models of service quality for various industries, as well as development of total quality

improvement strategies for service organizations that have particular significance to port operations.

GPHA, like any other service organizations, has the quest to deliver quality service to satisfy its customers in the midst of fierce competition for market share with its numerous sub regional competitors. It is on this basis the researcher seeks to assess the effect of operational efficiency on customer satisfaction at the Port of Tema.

1.3 Problem Statement

The Ghana Ports and Harbours Authority handles about 70% of the national trade and traffic in addition to volume of trade and traffic to and from the landlocked countries of Burkina Faso, Mali and Niger. One of its critical goals is “to make port operations more efficient and financially viable”, whiles “delivering efficient, friendly and best value services that delight its customers”, is its customer service core value. (*www.ghanaports.gov.gh/*)

In the midst of efforts to achieve these critical goal and customer core service value, latest figures from Ghana Ports and Harbours Authority has indicated that Ghana has lost about 50 percent of cargo trade with Burkina Faso, Mali and Niger, which has dropped from one million tons annually since 2009 to 500 thousand tons in 2014 according to Paul Asare Ansah (2015).

In view of these, there is the need to evaluate the current impact of operational efficiency at the Port of Tema on its customer’s satisfaction.

1.4 Research Questions

With reverence to the problem statement, the study strive for answers to the following questions

1. What is the level of operational efficiency at Port of Tema?
2. What are the determinants of customer satisfaction?
3. What is the level of customer satisfaction at GPHA?
4. How is the relationship between customer satisfaction and behavior intention influenced by customer's background?

1.5 Objectives

Generally, the study seeks to access the effect of operational efficiency on customer satisfaction.

It is against this milieu that the research aims at establishing the following specific objectives:

1. To assess the level of operational efficiency at Port of Tema.
2. To examine the determinant of customer satisfaction.
3. To examine the level of customer satisfaction at GPHA.
4. To make recommendation to improve on customer satisfaction.

1.6 Methodology

To be able to answer the research objectives, the study adopted the quantitative method of research. Due to the quantitative nature of the study, data gathering was done through survey with the aid of structured questionnaire. The survey method employed for the data gathering was to enable the researcher cover a larger sample size in a short time. For the purpose of time and financial constraints and uncertain knowledge about the exact population size of the study area, a convenient sampling was used for selecting respondents.

1.7 Scope of the study

The study focused on assessing the effect of operational efficiency on customer satisfaction at the Port of Tema. Port of Tema renders two main services thus service to Vessels and service to Goods. For the purpose of this research, the scope covered service to goods which is also referred to as shore handling service (Receipt, Storage, and Delivery). Port of Tema has been carefully chosen due to the intense operational activities, coupled with the fact that, Port of Tema serves as the major ingress and egress points for mass cargo. The manifestation of all the major stakeholders within the port community of Tema, makes this area a suitable place for the study.

1.8 Significance of the study

The collapse of many state institutions in Ghana has been attributed to operational inefficiency due to bureaucratic and manual documentation process that is compounded with human errors, fraud and delays. This study consequently aims at accessing the effect of operational efficiency at the Port of Tema on customer satisfaction. Operational efficiency encompasses several strategies and techniques used to accomplish the basic goal of delivering quality service to customers in the most cost-effective and timely manner. Customers are the most important people for any organization. They are resources upon which the success of the business strives. Customer satisfaction is the heart of the selling process. One estimate is that it cost five times as much to attract new customers as it does to keep an existing one. The relationship between the organization and the customer is, therefore, an important one. The findings will sensitize port management and stakeholders within the port community, the relationship between operational efficiency and customer satisfaction which most likely may lead to wealth creation aside sustainability of investment within the maritime industry. This academic research will also add to the existing body of knowledge in the country.

1.9 Limitation

Financial and time constraints are seen as the limitation that may impair the progress of this study. As this is an academic study and it is supposed to be completed within a specified time, the time limit for the study may be inadequate to carry out an extensive study on the topic. As such data collection was limited to only a few samples. Also as result of the busy schedule of the unit of analysis, limitation is seen in the area of getting respondents to adequately respond to the research tools. This can therefore have a negative effect on the results of the study as the required data may not be provided by the respondents.

1.10 Organizations of the study

The research is systematized into five Chapters, chapter one focuses on the background to the study accentuating on the problem statements, research questions, objectives, methodology and the scope of the study. Chapter two is centered on the review of relevant literatures that are materials and works related to the research. The methodology and the approach employed by the researcher for the research are combined in chapter three. This chapter highlights the approach and the methodology used which consist of the research design, the research method, population, sampling techniques, type of data and sources, method of data collection, pre-testing, limitation to data collection, presentations and analysis and ethical issues. The analysis of the primary data gathered from the field survey will be contained in the chapter four with findings, recommendations and conclusion in the chapter five of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter focuses on the history of ports development, ports operations and ports automation in Ghana. The administrative, legal, and management structure of ports operations, operation procedures and ports efficiency indicators are also contained in this chapter. Again, in this chapter are the contributions of the Port of Tema to national development, challenges of ports operations, stakeholder's involvements and government policies regarding ports operations.

2.2 Historical Development of Sea Ports in Ghana.

Between the 16th – 18th centuries, foreign trade in the then Gold Coast was undertaken from about 40 landing points strewn around the coast. By the 1900's these had converged to six main ports of trade. From 1920 to the 1940s the transport witnessed its first revolution in the road and rail network which culminated in the construction of the Port of Takoradi. The need to build a deep seaport at Takoradi, about 4.5km west of Sekondi was discernible. The idea was conceived and born by Governor Sir Gordon Guggisberg (Oduro, 1999).

The Construction of the Port began in December 1919 and was completed in 1927. Through hydrographic survey conducted by the Gold Coast governor, Takoradi was chosen and recommended as a suitable site for deep sea port. Honourable Sir J. H. Thomas, the Secretary of state for the colonies in the United Kingdom, officially opened the port on the 3rd of April, 1928 (GPHA, 2002). Since its establishment in 1928 (GPHA, 2002), the port has seen considerable expansions in the area of infrastructure.

Port of Tema is the bigger of two seaport of Ghana. Further road expansion and shifts in the direction of trade in the post-independence era led to the construction of the Ghana's second Port "Port of Tema". Construction work began in 1954 by Sir William Halcrow and Partners with the first cargo entry in 1958. The Port was opened in January, 1962 to regular traffic with the opening of the ceremonial declaration on the 10th of February, 1962 (GPHA, 1991).

The Port of Tema is 30km east of the national capital, Accra and geographically on the Greenwich Meridian and latitude 5.4 degrees north of the equator. The Port occupies a total land area of 3,904,754m² and the quay length is 2,196m². The Port has a coverage storage area of 53,270m and 97,200m of open storage. Plug-in refrigerated containers are found at the Reefer yard in the main Port. There are bunkering service and dry dock facilities available at the Port (Owusu-Mensah, 2007).

Port of Tema handles about 80% of the imported goods in Ghana. Clinker, oil products, aluminum, vehicles, container cargo, rice, wheat and alumina are the major commodities handled by the Port (Gyebi-Donkor, 2006). The Port environs serve as a logistic point for activities of Inland Clearance Depots (ICD'S), Warehouses, Transport and haulage companies, freight forwarders and related service centres.

2.3 Legal Framework, Administrative and Management Structure for Ports Operations in Ghana.

Ghana Ports and Harbours Authority (GHPA) was established under the Provisional National Defence Council Law (PNDCL 160) of 1986 (GPHA). Prior to the promulgation, three companies were managing cargo handling and shipping in the country. These were Ghana Cargo Handling Company and Takoradi Lighterage Company Limited (TLC), Atlantic Port Services (APS) and Speed Line Stevedoring Company (SSC). The seaports in Ghana are administered by

GPHA. Currently, GPHA is a landlord port authority responsible for providing all needed port infrastructure. It controls the marine approach channel, navigational supports, basins and quays of the Ports (Owusu-Mensah, 2007).

2.3.1 Legal Framework for Ports Operation

The statutory functions of GPHA include planning, management, maintenance, operating and controlling of all Ports in Ghana (GPHA, 2007). Specifically it shall:

1. Provide in a port such port facilities as appear to be necessary for the efficient and proper operation of the port;
2. Maintain port facilities and extend and enlarge any such facilities as it shall deem fit.
3. Maintain and deepen as necessary the approaches to, and the navigable waters within and outside the limits of any port, and also maintain light houses and beacons and other navigational services and aids as appear to be necessary;
4. Regulate the use of any port and of the port facilities;
5. Provide facilities for the transport, storage, warehousing , loading, unloading and sorting of goods passing through any port, and operate road haulage services for hire or reward;
6. Carry on all the business of stevedoring and lighterage services; and
7. Generally discharge any other functions which are necessary or incidental to the foregoing. These include the following:
 - a. Supervise stevedoring lighterage and container services, where these are provided by person other than the Authority;
 - b. Operate tugs, dredgers and other craft for towerage, salvage, fire prevention and protection of life;
 - c. Enter into any agreement with any person:

- For supply, construction, manufacture, maintenance or repair by that person of property which the Authority may require for the efficient discharge of its functions under this law; and
 - For the operation or provision of any port facility which the Authority by this law is empowered to operate or provide.
- d. Appoint, license and regulate stevedores, master porters to operate in the container terminals;
- e. Establish pilotage districts, direct that pilotage shall be compulsory in any such district, determine that pilot (including Authority pilots) to operate in such districts, license pilots for work in such districts and establish pilotage boards and specify their suite include the duty of inquiring into the conduct of pilots; and
- f. Which such limits as may be fixed by the Secretary prescribed rates, charges and dues for services provided by the Authority or specify the persons liable to pay such rates, charges and dues prescribed under section 75 of this law.

2.3.2 Administrative and Management Structure of Port Operations at GPHA

Administratively, there is an explicitly designed structure with instruments that regulate the operational activities of GPHA. A nine member board of directors including the Director General controls the authority. The government is charge with the formation of the board in consonance with a laid down procedure and consideration.

The following are the principal functions performed by the board:

1. Determine policy with regard to all operations of the authority and ensuring its implementation.
2. Submit annual reports on the activities of the authority to the government and

3. Approval of annual budget of revenue and expenditure.

The Board is composed in the following manner:

1. Chairman
2. Director General of the Authority
3. The Directors of the two Ports (Takoradi and Tema),
4. Four representatives of Port users;
5. Representative from the Ministry of Roads and Transport; and
6. Two other members; one of whom must be an employee of the authority.

The Board of GPHA is accountable to the Government of Ghana. The Board is charged with the organizational structure, management team, organizational competency and general management procedures. The Board is also charged with setting target, monitoring the activities of the organization, deliberations, and results on financial, technological and strategic decisions (GPHA, 2007). The level of autonomy of the authority pertaining to administrative, financial, operational and legal issues is clearly defined by the Ministry of Roads and Transport (GPHA, 2007). The management power of the GPHA is subject to regular and hierarchical interruptions usually from the government.

2.3.3 Operational Structure at Port of Tema.

The efficiency and effectiveness of ports to play their roles and execute their duties well depend on the relationship among the various strategic units within the port concerned with operational service delivery. The Port of Tema has copious department which are all engaged in the chain of operations. These departments include the Port personnel and administration, material, engineering, marketing and customer service, stevedoring, port security, marine, plant, and

Finance (Revenue and audit department). The tasks of these departments are coordinated unswervingly under the director of port (GPHA, 2006).

i. Material Department

The department is responsible for the acquisition and purchasing of port machinery and other logistics. The head of this department is the material manager.

ii. Engineering Department

The Role of this department within the operational chain is to ensure the repairs and maintenance of all works of the port machinery or plants. The head of this department is the chief engineer.

iii. Marketing and Customer Services Department

The department is the communication channel linking the ports community and ports management. The department is headed by the marketing and customer service manager. The department is in charge of the promotion of ports business transactions in both the local and international market. It also sets and ensures that customer service standards are maintained. The complaints of customers are addressed through a single system; the customer service Centre.

iv. Administration and Port Personnel Department

The department is responsible for all administrative roles that are necessary to ensure efficient operation and management of the port. The department mandates include personnel recruitment, transfer and employee welfare and others. The personnel manager is the head of this department.

v. Stevedoring Department

The department is in charge of Dockers involved in loading and unloading of cargo from and onto vessels. Stevedoring services are provided by the Port Authority and ten (10) private Stevedoring Companies. GPHA controls 25% while the 75% is performed by the private companies. The department supervises the functions and operations of stevedoring companies both public and private within the ports.

vi. Port Security Department

The department is concerned with responsibility of ensuring the security of goods and vessels. It simply provides security for the ports. The Port of Tema has been ISPS compliant since July, 2004 and is operating at MARSEC level 1. All Port installations are manned by 24-hour CCTV surveillance plus professionally – trained security personnel who monitor all port zones including entrance and exit gates on a 24-hour basis. To enhance their operations they are assisted by the Ghana Police Service, Ghana Immigration Service and CEPS at the exit gates and Ghana Navy at the waterfront.

vii. The Finance Department

The department is responsible for every aspect of accounting and financial administration. Also the department is charged with the supervision and implementation of the ports financial policies, directives and procedures. It is responsible for the initiation and execution of financial plans within the guidelines of the port's policy framework. There are five sub-sections under the department. These are the revenue section, printing section, central accounts, management

accounting system section and the expenditure. The financial manager is the head of the department.

viii. Port Audit Department

The port internal auditor supervises the department. The role of the department is to perform internal examination of official accounts and business transactions of the ports. It ensures that all financial related transactions are performed within the well establish framework and financial statements prepared according to the International Financial Reporting Standards. Also it ensures value for money is attained in all ports dealing including procurement of logistics.

ix. The Marine Operation Department

All vessel handling services are provided by the port authority's marine department. The harbour master has oversight of marine operation within the port. This comprises operational tasks related to the safety and efficiency of vessel management within the boundaries of the port. The harbour master's office allocates berths and coordinates all services necessary to berth and un-berth a vessel. These services include pilotage, towage, mooring and unmooring, and vessel traffic services (VTS).

2.4 Port Operation Procedures

2.4.1 The Import Clearance Processes

- Various service providers work within a set of procedures and accompanying documentation in order for cargo to be cleared through the port:
 - The shipping lines bring in cargo releases accompanying documents to agents notably invoice, parking list and freight receipt.

- The destination inspection companies authenticate the documents and thereafter issue a final classification and valuation report (FCVR) stating the value of the consignment and the duty payable.
- Custom Division of Ghana Revenue Authority (GRA) undertakes valuation of certain category of items and ensures that the correct duty is collected.
- GPHA facilitates the physical clearance process and ensures collection of rent and handling charges.
- After securing the above documents, the Customs Agent (Clearing Agent) will do the following:
 1. Sends the above documents to a destination inspection company (DIC) depending on the country of origin for Final Classification Valuation Report (FCVR) to be issued.
 2. Sends a declaration electronically through the GCNet to the Ghana Customs Management Systems (GCMS).
 3. The Customs Division validates the declaration by stating the duties and taxes to be paid.
 4. Agents print out the declaration and effect payment at Ecobank or Ghana Commercial Bank.
 - a. After payment, agent attaches the receipt, the bill of lading, attested invoice, IDF and FVCR to a designated customs officer for verification.
 - b. The Original Bill of Lading, Bank Receipt, Customs Declaration (Hard Copy), and or Delivery Order (with relevant information typed on it by Clearing Agents) are sent to the Shipping Lines for cargo to be released.
 - c. After paying all administrative charges and demurrage, (where applicable) the Delivery Order or the declaration is duly endorsed by the shipping lines and given back to the agent.

- d. Submits the released D.O. as well as the customs declaration (hard copy) to the Receipt and Shore Handling Service provider and pay handling charges, rent, unstuffing charges (where applicable). Information on the declaration (hard copy) would be compared with the one on the GCNet. If they agree then Cash Delivery Invoice (CDI) would be issued by the service provider.
- e. Proceeds to the delivery bay for cargo to be located and positioned for customs physical inspection or go for scanning.
- f. If the information on the declaration and what has been physically examined agree, the customs officer would release the cargo on the declaration (hard copy) and electronically send via the GCNet to the GCMS that the cargo is released.
- g. After this a Delivery Tally Sheet or waybill would be issued by the service provider to enable the cargo to be loaded onto a truck and exit the port.
- h. Presents all clearing documents to Customs Division of the Ghana Revenue Authority (GRA) at the exit gate to confirm (using the GCNet) whether they have indeed released cargo. Copies of waybill (DTS) would then be given to GPHA Security and Police detailed at the gate to inspect and allow exit as appropriate.

2.4.2 The export process

The consignee provides details of shipment to the forwarder: - Cargo type, volume of cargo, cargo destination, shipping line, port of loading, vessel etc.

- Consignee then submits invoices showing unit price and total cost of the consignment to the forwarder for onward submission to Customs Division of the Ghana Revenue Authority.

- Freight Forwarder submits an application to the Assistant Commissioner of Customs (AC) for approval to load or stuff the container.
- The forwarder inputs all previously submitted information through the GCNet
- The shipper has the discretion to choose a shipping line and base on this preference relevant details on freight cost, transit times, etc., are provided by the shipping line after which a shipping note is issued.
- Forwarder re-enters any additional information through GCNet and prints out the declaration.
- Forwarder then heads to the long-room verification desk where a compliance officer verifies the declaration and appoints an examination officer for the transaction.
- Examination officer conducts an inspection at the loading bay in the presence of Narcotics Board and National Security officials after which the container is sealed.
- A waybill from the loading point and a counter waybill are used for port entry and (GPHA/Customs) at the export shed are notified.
- An invoice is raised for payment of handling charges and rent where applicable. This is paid at the GPHA revenue after which a shipping release is issued.
- The waybills together with a photocopy of the declaration are submitted to shipping line representatives to check whether the seal and container numbers are the same as those on the shipping instructions / note. A shipping release is then issued.
- GPHA releases the CDI (Cash Delivery Invoice). This submitted to Customs by the agent.
- Customs subsequently writes out the shipping release and refers it to the shipping line.
- An invoice is then raised for payment of handling charges and certification to the shipping line.

- The shipping line raises a provisional bill of lading after certification by the forwarder or shipper.
- Seventy two hours after the vessels departure the original bill of lading is raised by the shipping line.
- The forwarder or shipper returns to Customs for post shipment clearance.
- The original bill of lading is finally released to the shipper
- The procedure may have slight variations with different commodities.

The aforementioned procedures for import and export entails going through so many uncoordinated steps, which lead to duplication of roles by variables institutions involved in the operational chain. But it will be seen that with the introduction of the automated (GCNet) system coordination among the various institution involved with the execution of these procedures had improved and the many steps that pertained have been compressed into just eight steps. This greatly reduced the time, cost and paper work involved in port operation.

2.5 The Economic Contribution of Port Of Tema

With ever increasing globalization around the world, world trade is bound to increase. Many countries around the world have benefitted by opening up their economies and integrating with world economies by removing trade barriers. As world trade started growing, it was imperative for all the countries to be competitive and become more cost and quality conscious. Ports are backbone of world trade and play a key role in inward and outward movement of goods, and countries which built good ports with excellent infrastructure became competitive manufacturing centres/hubs. The significant importance of the Port of Tema to the national economy can be identified in the following areas of its contribution as discuss below:

2.5.1 Development of Industries

Port of Tema plays an important role in development of industries in its hinterland. Export and Import based industries like steel plants, refinery and power plants based on imported LNG benefit from development of deep draft mechanized ports such as Port of Tema. Land Transportation cost through rail and road are much higher than sea transportation cost.

It has been observed that development of Port of Tema has influence the development of its industries around the Tema environs that have become industrial communities.

2.5.2 Revenue Generation

Most governments in the world generate revenue from the operations of sea ports. The government of Ghana generates enough revenue through import and export duties paid at the port by Importers and Exporters. The Rotterdam Port which is one of the most efficient and biggest ports in the world contributes about 10% to its country's GDP (Hoyle and Pinder, 2002). Also taxes and dividend paid by GPHA, private entities and individual workers goes a long way to augment the revenue generation of the country and the Tema Municipal Assembly for national development.

2.5.3 Creation of Employment

The sea port of Tema provides employment to several citizens and even foreigners. The successful operations of a port in the world require labour to foster efficient and effective operations of the ports. The intrusion of private sector in maritime or ports operations in Ghana coupled with the expansion works on Port of Tema and Takoradi are indications that lot of people will be employed. In Ghana, the GPHA employs about 20,000 people annually in addition to the indirect services due to existence of the ports (GPHA, 2002)

2.5.4 Corporate Social Responsibility

The port of Tema has been undertaking a lot of corporate social responsibility in and around the Tema Community. Giving scholarship to students, operating medical facilities and sponsoring other national accepted course like that of the Black Stars and Ghana AIDS Commission. Again the Port of Tema financed the major dual carriage road linking the Port to the Tema Motorway which is 6km. (Tema Metropolitan Assembly, 2006). Port of Tema is crucial for the growth of the Ghanaian Economy and it has been driving force for trade and growth of the economy since ancient times. Most of the ancient cities were port based cities and port will remain the focal point of urbanization in modern age as well. Need of the hour is to promote the port of Tema development, automation and facilitate full utilization of its assets, including the human capital.

2.6 Ports Operations Vis–A–Vis Stakeholders Roles

As a transitional area in international trade facilitation, the ports serves as a place where cargo (whether imports or exports) is held until necessary documentation and payments are completed for either clearance or shipment (Anamoo, 2014). The participation of major and minor entities in the operations of seaports is very essential in ensuring efficient and prudent functioning of the port. The realization of the ports objectives greatly depends on the level of coordination and involvement of the various stakeholders within the ports community (CEPS, 2006). Among the principal stakeholders in Ghana are:

2.6.1 Destination Inspection Companies

These are companies appointed or mandated by government to conduct inspection thus classification and valuation of import goods at the ports of clearance. Destination inspection was introduced in Ghana in April 2000 to replace Pre-shipment inspection. Pre–shipment inspection involved inspection of imports before shipment from the country of supply.

Inspection of goods used to be the exclusive preserve and responsibility of the Customs Exercise and Preventive Service until events of modern bulk packaging and transportation known as containerization by which large quantities of goods are packed into huge containers became the order of the day, and CEPS lacked the proper means by way of equipment for identifying and classifying goods packed and delivered in large containers into our ports. Also of importance is the fact that Pre-shipment inspection gave way to destination inspection as a result of new World Trade Organization WTO rules. Gateway Services Limited was the first company that was engaged to undertake destination inspection in the country. By 2003, other companies such as Bivac, Ghana Link and ICS had all been licensed to participate in the destination inspection business in Ghana.

However, as at now there are only two companies appointed by the government to carry out the destination inspection and they are Gateway Services Limited (GSL) and GSBV Company Limited. The GSL is responsible for inspection of imports through the seaports whiles GSBV inspect imports through Kotoka International Airport, Land Frontiers and Free Zone Companies. GSBV is also responsible for physical inspection of goods classified by the Ministry of Trade and Industry as “High Risk”.

2.6.2 The Customs Exercise and Preventive Service

The Customs Exercise and Preventive Service (CEPS) under the Ghana Revenue Authority plays indispensable role in the operations of ports. The service is mandated to collect import and export duty tax, petroleum tax and import excise. It promotes the protection of revenue through the prevention of smuggling of goods across Ghana’s borders.

2.6.3 Stevedoring Companies

Stevedoring companies are responsible for loading and offloading of goods on vessels. In port operations in Ghana, private stevedoring companies forms 75% while GPHA stevedoring forms 25%. Private stevedoring companies in Ghana include Atlantic Port Services Ltd, Advance Stevedoring Company Ltd, Ordert Stevedoring Company Ltd, Golden Gate Stevedoring Company Services Ltd and Safe Bond Company Ltd with GPHA serving as the only government stevedoring entity.

2.6.4 Ghana Port and Harbours Authority

GPHA is practicing the hybrid module of Port operations. Mr. Asare Ansah (2014), Marketing and Public Relations manager of the Port of Tema said the landlord port approach which is being practiced in most of the countries along the sub region is a World Bank agenda, stressing that because that was not good for Ghana, GPHA opted for the hybrid way of operation which is yielding positive dividends. The hybrid module makes it possible for GPHA as a regulator to participate in cargo handling and marine operations as well as licensing private operators also to participate so as to attain sustainability emanating from the competition.

2.6.5 Individual Port Users

These include private individuals, agencies and groups who are involved in the maritime industry either by way of imports or exports.

2.6.6 Ghana Shippers Authority

The Ghana Shippers Authority was established by NRC 254 of 1974 to, among others, effectively manage the demand side of Ghana's shipping industry with a view to protecting the interests of Ghanaian shippers in relation to port, ship, inland transportation and other ancillary problems with a view to ensuring a quick, safe, reliable and cost effective delivery of cargo for the

shipper in Ghana. Since its establishment four decades ago, the Authority has worked closely with other sectors of the industry in protecting and promoting the interests of Ghanaian shippers and ensured the provision of relevant logistics for the growth of shipping and trade in the country. The Authority upholds the need to educate and sensitise shippers, the business community and other relevant stakeholders in order to assist them improve upon their knowledge and skills and also adopt best business practices.

2.7 Government Policies Affecting Ports Operations in Ghana

The management and sustainability of the seaports in Ghana have consistently been the concern of government. A government effort with regards to ports operations is the trade and investment Gateway projects. This project fall under the framework of the national institutional renewal program which is to embark upon public sector efficiency by reforming public institutions. The relevance of the reforms is to hold public agencies and enterprises accountable for the delivery of services (Alabi, 2009).

The Gateway Project is of two components which are essential in increasing inflows of foreign direct investment. The development of a geographically sited Export Processing Zone (EPZ) is the first component of the project. The purpose of this component is to attract private developers who will provide on-site services or infrastructure for investors to operate in such areas. This first component of the Gateway Project is geared towards the removal of all identified constraints in the operations of the ports (World Bank, 1998).

The second component of the project is the improvement of institutional capacities to encourage investments. This components deals with the reforms of the Customs Exercise and Preventive Services and Ghana Ports and Harbours Authority regarding their administrative processes and

operations. The second component is also essential in ensuring Ghana's vision of becoming a trade and investment center.

Under the Gateway Project, GPHA was charged with certain responsibilities including; reducing the turn-around time for vessels, enhancing ports management efficiency, ship handling capacity and clearance cargo time. In light of this, government encouraged private sector participation in port operation in Ghana. To achieve the responsibilities set under the Gateway project for GPHA by 2001 there were critical elements outlined in the port management reforms and these include;

- As part of activities undertaken a new container terminal was concessioned to a joint venture company Meridian Port Service Ltd. Under a public private partnership agreement that saw the injection of about \$150 million into the development of the terminal.
- Nine(9) private stevedoring companies were licensed to operate in both Ports of Tema and Takoradi and 75% of stevedoring services were transferred to these private companies, in addition, license was issued to bulk cargo importers and exporters to stevedore their own cargoes but are not authorized to provide services to the third parties
- Hundred per cent of shore handling of general cargo was transferred to the private sector in both Ports while 75% of container handling was also passed on to the private sector in Port of Tema.
- In a spontaneous private sector response to congestion at the landside of the Port of Tema, six private inland container depots were established in addition to the jubilee terminal operated by the GPHA to undertake container transfer and receipt, storage and delivery operations.

- Information and communication technology was introduced into port and customs management and operation system with the information of a joint venture company, GCNet to design and operate a single window cargo clearance and documentation system for the port and shipping industry. A global positioning system was subsequently introduced to track and trace vehicles and cargo along the transit corridors to improve transit cargo transportation and security.
- Following the licensing of five private destination inspection companies by the custom administration, container scanning equipment were installed to facilitate quick container examination and deliveries.
- Scanning equipment was introduced to facilitate containerized cargo inspection. Close circuit television cameras were mounted at vantage points within the port to boost general port security. This has greatly enhanced the security and safety of personnel and cargo. Indeed ports in Ghana boasts of being the safe haven ports in the West African sub-region.
- Engagement of dock labour was outsourced to the joint venture entity, Ghana Dock Labour Company Limited, leading to a reduction of port staff by 53%. Non-core activities transferred to the private sector included bunkering and waste collection.
- The dry dock and slipway facilities in Takoradi Port were refurbished at the cost of \$15million. A management contract was then signed with a specialized facility management company which provides management services, brings operational skills and know-how and trains the existing port staff to take over within a two years period.

2.7.1 Impact of the Reforms

- The introduction of modern gantry cranes and the adoption of the NAVIS IT application at the MPs container terminal have significantly enhanced the efficiency and productivity in ship and cargo handling.
- Active berth occupants of the container terminal improved from 55% in 2003 to 78% in 2011 whereas berths occupied by not working reduced from 15% to 5% within the same period.
- Container handling improved from about 10 moves per ship hour in 2005 to 22 moves in 2011; the time container vessels spend at birth decreased from 45hrs in 2005 to 33hrs in 2011 and container traffic in Port of Tema into 233,000 TEU's in 2002 to 757,000 TEU's in 2011.
- With the introduction of a single window electronic data interchange system, customs procedures have been simplified. The thirteen manual documentation processes that used to take about two to three days to undertake have been eliminated. The cargo clearance period has been reduced from average of two weeks to two days.
- At the land borders, consignments are processed within a matter of hours and as against whole day (or longer) in the past .The electronic vehicular and cargo tracking systems also guarantees maximum security on the corridors and a quicker transit time for their destinations.
- The electronic data interchange system also increased the annual revenue collected by customs at the ports by 35%
- The competitiveness of the Ghanaian exports increased due to the expeditious electronic processing of consignment.

- The refurbishment of the rail and road transport sectors has also facilitated movement of goods and persons to and from the ports.

2.8 The Way Forward

Despite these achievements, recent developments in Ghana have imposed greater challenges to further improve the performance of port and maritime logistics service delivery in the country.

The fast track production of oil in 2010 and the new wave of industrialization oil the country fueling the high economic growth rate of 13% have brought enormous opportunity for business growth and investment in the maritime logistics supply chain. The discovery of petroleum has resulted in the influx of supply vessels into Takoradi Port and thereby reduces the berthing capacity for traditional operation. Today 66% of the total 1,800 vessels calling at the port are supply vessels.

These have created the need for the expansion of the Port of Takoradi to meet the short-to medium term needs of the oil and gas industry. New facilities to be constructed include:

- Bulk cargo terminal for handling mineral ore, clinker, cocoa beans cereals and other non-containerized cargo;
- Dedicated container terminals
- Port facilities for rail transport of containers and general cargo.
- Port facilities for oil services vessels including repair and fabrication yards

Plans are equally far advanced to literally double the capacity of Port of Tema to meet traffic growth, trans-shipment and transit trade demands. New facilities to be provided include:

- New container terminals
- New passenger terminal
- New food & fruit terminals

- New Ro-Ro terminals
- New trans-shipment terminals
- New transit terminals
- New break, dry and liquid bulk terminals

(www.ghanaports.gov.gh/uploads/document/Main_ACTIVITIES.pdf.(accessed,2015,july 15)

The implementation of the expansion plans of both ports are estimated to cost about \$2.3 billion. A third port for deep sea vessels would be constructed to meet demands of an aluminum, bauxite and gas driven national economy development.

As part of the west Africa transport and transit facilitation project more trunk roads are to be rehabilitated, rest stops are about to be constructed by the Port Authority along the major transit corridors and satellite transit truck villages are to be developed near Port of Tema at the cost of \$80.million. Joint border post are also being established between Ghana and her neighboring countries.

In this regard, the ports authority has teamed up with government to develop the appropriate public private partnership policy that will attract potential private partners to contribute meaningfully to the development of the ports and maritime logistics infrastructure and service

In response to these emerging opportunities over 50 foreign and local companies have been registered over the last five years to participate in the provision of various services in support of the new industry and yet this is just the beginning of the era in maritime logistics service delivery.

Indeed the unprecedented economic growth of Ghana fueled by the discovery of oil in 2007 and the new wave of industrialization have opened up life time opportunities for both local and foreign companies to energize their business and lift their profitability to the next level.

2.9 Operational Efficiency

Operationalization is the process of defining concepts into measurable factors or variables to describe what is to be a part of a concept and what not part of a concept is. For many fields of science, operationalization is important. A typical example is to operationalize hunger in terms of ‘time since last feeding’ as Tolman did according to Feest (2005). Operationalization is closely related to operational definition, which Demining (2000) defines as ‘a procedure agreed upon for translation of concepts into a measurement of some kind’.

According to Hokey Seong (2006), the operational efficiency of a third party logistics providers – defined as equipment utilization or labour productivity – dictates the competitiveness and even survival of the company. Seong and Phillips (2001) defined operational efficiency as ‘equipment utilization’. They also argue that operational efficiency measured by input and output ratios may reflect the true overall productivity better than traditional financial measures.

2.9.1 Efficiency

The field of logistics and management associate efficiency with how well a relevant action is performed. A firm thus becomes efficient if it achieves result with minimal resources. Eliasson and Samuelson (1991) who studied performance measurement in the public sector define efficiency as a relation between output and input that is normally expressed in terms of financial value, although it also can be expressed in non-financial terms. Efficiency is how well the

organization is running its operations and the extent to which the greatest benefit can be obtained from a given amount of resources or doing things right.

According to Ax et al. (2009), a high degree of internal efficiency is often associated with a high degree of productivity and cost effectiveness. Effectiveness is defined as the level of goal completion. Measures of efficiency and effectiveness are often designed as specific ratios, but can be expressed as absolute values. Another definition of efficiency is a company's economizing with limited resources (Ax et al., 2009). They define efficiency as "degree of fulfilling a goal" and the degree is a relationship between what has been accomplished in terms of value to what has been put into process, also in terms of value. They highlight a series of problematic aspect of efficiency.

Efficiency is not an objection terms of how well a company performs its business. The degree of efficiency is decided in relation to a goal; if the level of the goal is decreased, efficiency is increased. It might be difficult to determine if a Company is efficient on its own merits only. An increase in efficiency might be due to an increase in demand or technological change.

The company might have several goals that contradict each other. Profitability and high wages is one example of such a trade-off. Therefore it is important to identify if several goals are present and if these goals are in line with each other.

The time horizon is important. Short term, the company might be able to "squeeze" the maximum amount of efficiency by using all resources. This might jeopardize long term profitability, where development and renewability are important factors. Available resources in the short term are important, even though this means lower efficiency levels.

These difficulties have made some come to the conclusion that it is important to establish a company's efficiency level. The company's ability to survive has been proposed as the ultimate

level of efficiency (Ax et al., 2009). In terms of productivity, Ax et al., (2009) acknowledged the same relationship as efficiency, but what has been achieved (output) and the resources used (input) are discussed in terms of quantities and not in terms of value.

Another way to look at efficiency is through organizational efficiency and effectiveness (Pfeffer and Salancik, 2003). They define the effectiveness of an organization as its ability to create acceptable outcomes and actions. How well an organization meets the demands from actors that are concerned with its activities is an external standard. Organizational efficiency is an internal standard of performance. The question of what is being done is not posed, merely how well it is performing. Efficiency is relatively value free and is measured as the ratio between utilized resources and production output. Borgstrom (2005) refers to Pfeffer and Salancik when she concludes that efficiency has changed from an internal measure used to find waste to a measure of goal fulfilment. She concludes that efficiency is the internalization of effectiveness which is related to Liljegren's notion (1998) that efficiency is an operationalization of effectiveness, which in turn is co-creation of goals.

2.9.2 Operations Management and Logistics Perspective on Efficiency

From the field of operations management, Stevenson (2001) views efficiency as a tool to improve productivity, but efficiency should not be confused with productivity. Efficiency is a more narrow concept that “pertains to getting the most out of a fixed set of resources; productivity is a broader concept that pertains to effective use of overall resources”.

Heizer and Render (1999) define productivity as the ratio of outputs (goods and service) to inputs (resources, such as labour and capital). The Job of the operations manager is to improve this ratio, “improving productivity means improving efficiency” (Ibid, P. 16). Chase et al. (2006)

defines efficiency as doing something at the lowest possible cost”. Later they define it as a ratio of actual output of a process relative to some standard or to measure the cost or gain in a process. Lumsden (2006) defines efficiency as the degree of fulfilment to a certain goal, not far from chase et al. Mentzer and Konrad (1991) define efficiency in a logistics performance context as “a measure of how well the resources expended are utilized” (P 34) and “the ratio of resources utilize against the results derived”(ibid). According to Caplice and Sheffi (1994), there is no need to create new metrics because the critical elements of logistics management remain the same – time, distance and money. Samuelsson and Tilanus (1997) formulate the efficiency dimensions as time, distance, speed and capacity. Caplice and Sheffi (1994) propose a series of ratios as indicators for performance measurement in logistics. These logistics metrics were later reworked by Mckinnon (2004) and proposed as a base for transport efficiency measures.

2.9.2.1 Sea-Port Operational Efficiency

Sea-port operation is defined as cargo handling activity performed by a designed company consisting of labour and machines. It is also defined as the operation of a wharf and other port facilities, operation of port passenger transport service, operation of cargo loading/unloading, haulage and warehousing services within a port area (P.A. Osaretin, 2006)

Presently, there is difficulty in defining port operational efficiency due to non-universal definition of what indicates an efficient port or what port operational efficiency entails (G. De Monie, 2009). An efficient sea-port should be one that is competent in operations leading to customer satisfaction (G. De Monie, 2009). Based on this definition, efficiency of a sea-port operation is determined by duration (time) of ships stay in a port, quality of cargo handling and quality of services to inland transport vehicle during passage through port (B.A. Blonigen and W.W. Wilson, 2006). Quality of cargo handling is in the form of berth throughput and quality of

service to inland vehicle is dependent on port infrastructure and labour. Productivity has been identified as a measure of sea-port operational efficiency (J. Tongzon and W. Heng, 2005).

Many researchers have used various approaches to evaluate sea-port operational efficiency. Annual firm level surveys have been employed as indicators of sea-port operational efficiency, but there was almost no information on how port operational efficiencies evolve over time and its effect on customer satisfaction. According to B.A Blonigen and W.W. Wilson, (2006). A number of studies have used data on inputs, outputs and production function theory, by means of Data Envelopment Analysis (DEA), to estimate the most operational efficient production frontier across a set of sea-ports (J. Tongzon, 2001).

Some research has been done on the contribution of port ownership to efficiency. Transformation from public to private ownership is believed to have improved sea-port operational efficiency even without change in level of competition (S. Estrin and V. Perontin, 1991). Some other researcher contended that principal-agent problems may also arise in the private sector as a result of capital market imperfection (J. Tongzon and W. Heng, 2005). Again, it has been established that size of sea-port has positive effects on its operational efficiency (T. Notleboom, C. Coeck and J. Van Den Broeck, 2000). Also, it has been shown that ports with larger throughput seem to have certain performance advantage over those with smaller throughput (K. Cullinane, D.W. Song and R. Gray, 2002).

2.9.2.2 Operational Efficiency Vis-À-Vis Customer Satisfaction

The modern port is no longer a single entity but a component of the overall supply chain and its operations have implications for all those associated with the transport of cargo and movement of goods (UNCTAD, 2014). Thus, port operations are now an integral part of supply chain management, hence its operational efficiency are criteria to ensuring customer satisfaction

(UNCTAD, 2014). One objective of Port of Tema as a commercial port is to improve on its operational efficiency to ensure that the cost of transiting goods through it is as low as possible (GPHA, 2013).

Until 1970, GPHA performed all the cargo handling in the port of Ghana (GPHA, 2014). Subsequently, the World Bank encouraged the government to privatize part of the stevedoring and other aspect of its operations (UNCTAD, 2014). The objective was to increase competition and enhance operational efficiency that will lead to quality services for customer satisfaction at the port. Currently, 10 licensed stevedores operate in competition with GPHA's stevedoring section at the Port of Tema (GPHA, 2014).

The last two decades have seen a prolific increase in the range and capabilities of mechanical handling equipment aside data processing computer software. It is the believe of Richard Anamoo (2014) that if cargo has to be handled efficiently, critical factors such as the proper allocation, deployment and operation of technological equipment available must be taken into account. Again, in an attempt to ensure operational efficiency at the port, management introduced an Automated System for Custom Data and subsequently GCNet (CEPS, 2013). The effect of all the improvement in operational efficiency at the port of Tema on customers' satisfaction is as follows;

1. According to Bainiah (2008), the transferring of electronic message between customs and importers through the GCNet helps to save time, loss of document and resources with respect to the movement of customers from one office to the other.
2. Again, according to Bainiah (2008), the improvement in operational efficiency due to the introduction of the automated system (GCNet) has resulted in the following as benefit to customers

- a. Reduction in clearance time. Clearance time which used to be at least three days has reduced to at most two days. This helps importers to avoid demurrage and also prevent the lock up of their capitals in cargoes.
- b. Bureaucratic processes due to the use of manual system leading to the extortion of money from customers has stopped to the satisfaction of clients.

2.10 Concepts and Theoretical Framework

2.10.1 Concept of Customer Satisfaction

Customer satisfaction is a word that has received significant consideration and curiosity among scholars and practitioners perhaps because of its importance as a key element of business strategy, and goal for all business activities especially in today's competitive market (Anderson, Fomell, and Lehmann, 1994; Gronroos, 1984; Lovelock & Wirtz, 2007). The concept has been variously well-defined by many authors. "Satisfaction is a person's feeling of pleasure or disappointment resulting from comparing a product's performance (outcome) in relation to his or her expectation" (Kotler & Keller, 2006 p. 144). Satisfaction is a "psychological concept that involves the feeling of well-being and pleasure that results from obtaining what one hopes for and expects from an appealing product and/or service" (WTO, 1985). Customer satisfaction is "as an attitude-like judgment following a purchase act or a series of consumer product interactions" Youjae Yi (1990 cited in Lovelock & Wirtz 2007). Customer satisfaction is "a consumer's post-purchase evaluation and affective response to the overall product or service experience" (Oliver, 1992). "Satisfaction is merely the result of things not going wrong; satisfying the needs and desires of consumers." (Besterfield, 1994); Customer satisfaction is "an experience-based assessment made by the customer of how far his own expectations about the individual characteristics or the overall functionality of the services obtained from the provider

have been fulfilled” (Bruhn, 2003). According to Gyasi and Azumah (2009) satisfaction is “The process of customer overall subjective evaluation of the product/service quality against his/her expectation or desires over a time period.”

Undoubtedly, satisfaction is more multifarious to define to accurately apt every perspective and measure. In the words of Oliver (1997), “everyone knows what satisfaction is until asked to give a definition. Then it seems, nobody knows”. From marketing perspectives, customer satisfaction has multi-dimensionality. The object of customer satisfaction may be varied and can be related to different dimensions of multiple experiences with product/service provider (Surenshchandar et al. 2002 cited in Satari, 2007) while most definitions relate customer satisfaction to quality of a product or service offering (Kotler & Keller, 2006; www.theacsu.org). Satisfaction can as well be related to other non-quality dimensions (Singh 1991; Garland and Westbrook. 1989). It may be related to an on-going business relationship or with price-performance, satisfaction with the time or service delivery or the service experience, service context and satisfaction with entire reputation and outlook of an organization. Even with the product or service quality there can be several dimensions (Gronroos, 2000, 2001; Bo Edvardsson 2005), such as what product offers, product or service reliability, timeliness, friendliness of the service providers, and the like. Consequently depending on the purpose one wants to achieve, one can relate satisfaction to any object of interest. In this study customer satisfaction is defined in relation to only dimensions connected to the service quality of GPHA’s shore handling services.

Satisfaction can be related to attribute-specific and overall performance. It is attributed to specifics where it relates to a specific product or service (Cronin & Taylor, 1992). For example, with Port of Tema, satisfaction can be related to a specific attribute such as: Time taken to have

your documentation complete, the Shore handling charges and the safety of cargo and human inside the port area.

On the other hand, customer satisfaction can be related to the overall performance of a product/service or the overall performance of an organization's products/services (Cronin & Taylor, 1992). The present study relates customer satisfaction induced by internal organizational operational efficiency at Port of Tema in order to generalize the findings for managerial implications. As to whether customer satisfaction is an outcome or a process, many early definitions conceptualized satisfaction as a process which is currently the dominant view held by most scholars (Oliver, 1980; Parasuraman et al., 1988).

The process perspective presupposes that customer satisfaction is a feeling of satisfaction that results from the process of comparing perceived performance and one or more predictive standards, such as expectations or desires (Khalifa & Liu, 2002). This perspective is grounded in the expectancy disconfirmation theory proposed by Richard Oliver (Oliver, 1980). The customer is satisfied if the performance of product/service is equal to his/her expectations (positive disconfirmation) and he/she is dissatisfied if the product/service performance is perceived to be below his/her expectation (negative disconfirmation). If expectation exceeds perceived performance, the customer is highly dissatisfied. By taking satisfaction as a process these definitions do not focus on satisfaction itself but things that cause satisfaction, the antecedents to satisfaction, which occur primarily during the service delivery process (Vavra, 1997). More recent studies view satisfaction as an outcome or end result during the process of the consumption of a service; it is viewed as a post-purchase experience (Vavra, 1997). This view has its roots in motivation theories that postulate that people are driven by the desire to satisfy their needs (Maslow, 1954) or that their behaviour is directed at the achievement of relevant

goals (Vroom, 1964). In this way satisfaction is perceived as a goal to be achieved and can be described as consumer fulfillment response (Rust & Oliver, 1994). In the context of port operation, we believe that customers, through the constant awareness created by GPHA, Tema to render efficient and quality service, have developed certain expectations and set of desired services. These are important in determining their satisfaction of the services received/given. Therefore our conceptual framework treats satisfaction as a process not just an outcome that customers strive to achieve.

Alternative controversial issue in customer satisfaction literature is whether satisfaction is cognitive or affective. Although most scholars, notably proponents of disconfirmation theories, view satisfaction as a process, but the nature of satisfaction process remains unclear. While some authors maintain that satisfaction is a cognitive assessment involving a comparison of product/service offerings from a provider against expectations, other scholars opine that the feeling of satisfaction represent an emotional or affective state of mind that is formed through the process of service delivery where customers encounter service experiences that affect their emotions. More recent research has found that satisfaction is both cognitive and affective (Edvardsson et al., 2005; Gronroos, 2001; Martin, et al., 2008; Oliver, 1993a; Wong, 2004). This view holds that customers do not only consume an offering for which they cognitively evaluate, but their involvement in the service production and delivery process allows them to emotionally evaluate the service quality. They argued that satisfaction is naturally tied to cognitive judgments and to affective reaction elicited in consumption (Mano & Oliver, 1993, p. 451). In this study, customer satisfaction is conceptualized as cognitive and affective.

An equally debatable element in clarifying customer satisfaction concept is whether it is subjective or objective in nature. Pizam A. & Ellis (1999) noted that “a minority of researchers perceive the satisfaction process to be subjective in expectations but objective in the perceptions of the product attributes, or outcome.” In this light, Klaus (1985, p. 21) defines satisfaction as “the customer's subjective evaluation of a consumption experience, based on some relationship between the customer's perceptions and objective attributes of the product”. Expectation and perceived performance are constructs that are in themselves subject to external influences to some extent (Maister, 1985). Others point out that both what is seeming (outcome) and what is expected are subjective and psychological phenomena not reality. The importance of the subjective nature of the process cannot be overlooked. The reason is that both expectations and perceptions are psychological phenomena and are susceptible to external influences and manipulation. To say that customers’ evaluation of a product or service is objective implies that the evaluation is not biased in any way. This is not realistic because it is a common knowledge that customers are different and the way they perceive a service like going through the clearing and export processes coupled with the charges may vary considerably depending on the nature of cargo, the nature of customs examination, type of release (House to House or Unstuffing). However, according to Gyasi & Azumah (2009), each customer can be objective in their own subjective, cognitive and affective states. Therefore in this study, customer satisfaction in itself is defined as a subjective evaluation, but its measurement is approached objectively; thus, customers are supposed to be objective - expressing whatever subjective response they have about a product objectively without bias.

Satisfaction may be viewed as Transactional or Cumulative: On one hand from a transactional-specific perspective, Customer Satisfaction is based on a one time, specific post-purchase evaluative judgment of a service encounter (Hunt, 1977; Oliver, 1977, 1980, 1993 cited in

Yonggui Wang & Hing-Po Lo 2002). On the other hand, the cumulative Customer Satisfaction perspective is conceptualised as an overall customer evaluation of a product or service based on purchase and consumption experiences over a time period (Fomell, 1992; Johnson and Fomell 1991; Anderson et al., 1994a, b; cited in Yonggui Wang & Hing-Po Lo 2002). In terms of the diagnostic and predictive value of customer satisfaction measurement, cumulative satisfaction is more useful and reliable than transaction-specific in that it is based on series of purchase and consumption occasions rather than just one occasion of transaction. Customer satisfaction, in this study, is measured from the last twenty four months. Therefore, the conceptual framework of this study treats Customer Satisfaction as cumulative. Consequently, the operational definition of Customer Satisfaction in this study is the one by Gyasi and Azumah (2009, p.g.36), “The process of customer overall subjective evaluation of the product/service quality against his/her expectation or desires over a time period”.

2.10.2 Consumer Satisfaction Measurement

Consumer satisfaction has been conceptualized in the marketing literature as the difference between perceived performance of a product/service and some cognitive standards such as expectation and desire of consumers (Oliver, 1980; Cronin and Taylor, 1992). In this regard satisfaction is the result of perceived product performance and some expectation or desire of consumers. This results in a confirmation or disconfirmation of customer expectation and desire. Disconfirmation theory of consumer satisfaction suggests that customer satisfaction/dissatisfaction is the disparity that exists between the performance of a product/service and some cognitive or emotional standards of the consumer, such as desire and expectation of customers. If perceived performance exceeds or falls short of expectation or desire, there is positive disconfirmation or negative discontinuation and the customer is satisfied or dissatisfied

respectively. Desire Disconfirmations (DD) and Expectation Disconfirmation (ED) are both empirically validated to significantly explain customer satisfaction (Khalifa and Liu, 2002).

Previous studies by Danaher and Haddrell (1996), have identified three broad categories of measurement scales used in customer satisfaction measurement. They are performance scales, disconfirmation scales and satisfaction scales. Performance scales are those that use scales such as poor, fair, good and excellent; disconfirmation scales are those that use scales such as worse than expected to better than expected; and satisfaction scales are those that use scales such as very dissatisfied to very satisfied. Disconfirmation scales are based on the disconfirmation theory. Oliver (1980) was the first to propose and developed the expectancy disconfirmation theory. It has been verified and recommended that the use of disconfirmation scale is useful for three reasons. “First in one disconfirmation-based single question, it captures succinctly Parasuraman et al.’s (1988) two- stage SERVQUAL measurement, i.e. much worse than expected to much better than expected. Second, it is shown mathematically that comparison with expectations will correlate higher with customer retention than either a quality question or a satisfaction question (Rust et al., 1994, p. 61). Lastly, using disconfirmation scale is better because a customer rating service quality highly, for example as good or excellent, may not perceive it as ‘better than expected’ (Danaher and Haddrell, 1996; Devlin et al., 1993; Rust et al. 1994).

For the above reasons, in this study, our theoretical framework for measuring overall customer satisfaction with service quality uses satisfaction scales and a five-point disconfirmation scale: from much better expected or desired to much worse than expected or desire.

2.10.3 Determinants of Customer Satisfaction in Maritime Industry

Many factors drive customer satisfaction that need to be examined in order to reliably measure it. Customer satisfaction could be influenced by service quality and the customer service experiences (Oliver, 1993a; Parasuraman, et al., 1988, Lovelock, 2000; Lovelock & Wirtz, 2007; Gronroos, 1994, 2000, 2001; Yonggui Wang & Hing-Po Lo 2002; Kotler & Keller, 2006).

“A service experience is defined as the service encounter and/or service process that creates the customer’s cognitive, emotional and behavioural responses which result in a mental mark, a memory” (Gronroos, 2005 in Edvardsson, 2005). It is generally accepted by most scholars that service quality basically relates to what the customer perceives of the product/service performance. Recent empirical studies have shown that customer satisfaction is not only driven by cognitive dimensions of customer perceptions of service quality but also by affective dimensions which have positive impact on post-purchase behaviour like repeated purchase, customers loyalty, switching intention, and likelihood to recommend (Erevelles, 1998; Oliver, 1980; Oliver, 1993a). This is consistent with the work of two perceived service quality guru’s, Gronroos and Edvardsson (Gronroos, 2001; Edvardsson, 2005; Edvardsson, et al., 2005), who postulate that perceived service quality is an important determinant of customer satisfaction that have both cognitive and affective dimensions beyond just cognitive assessment of customers, of the offering of service providers. These SERVQUAL gurus further maintain that perceived quality is formed by customers during their ongoing interactions with product/service providers.

Service quality has been variously defined by different authors from different context. It has been referred to as customer perceived quality (CPQ), which is defined as the confirmation (or disconfirmation) of a consumer’s expectations of service compared with the customer’s perception of the service actually received (Gronroos, 1982). Asubonteng, McCleary, Swan

(1996) defined service quality as the extent to which a service meets customers' needs or expectations. This view of service quality has been supported by Parasuraman, Zeithaml and Berry by defining the concept of service quality as "a form of attitude, related, but not equivalent to satisfaction, that results from a comparison of expectations with perceptions of performance. Expectations are viewed as desires or wants of customers, i.e. what they feel a service provider should offer rather than would offer." (Parasuraman, et al., 1988).

2.10.4 Functional Quality (SERVQUAL)

Many different models have been developed to explain and measure service quality in different settings of business operations (Nitin et al., 2005). Different service quality dimensions have been found in many different studies in different industry and service or product context.

One of the service quality categories that has been found to influence customer satisfaction is functional quality. Functional quality has been initially conceptualised in the GAP model which was proposed by Parasuraman, Zeithaml and Berry (1985). The model conceptualises service quality to be the differences between expectation and performance relating to quality dimensions. These differences are referred to as gaps. The gaps model (**figure 2.1**) conceptualises five gaps which are:

Gap 1: Difference between consumers' expectation and management's perceptions of consumers' expectations (not identifying what consumers expect);

Gap 2: Disparity between management's perceptions of consumer's expectations and service quality specifications (inappropriate service-quality standards);

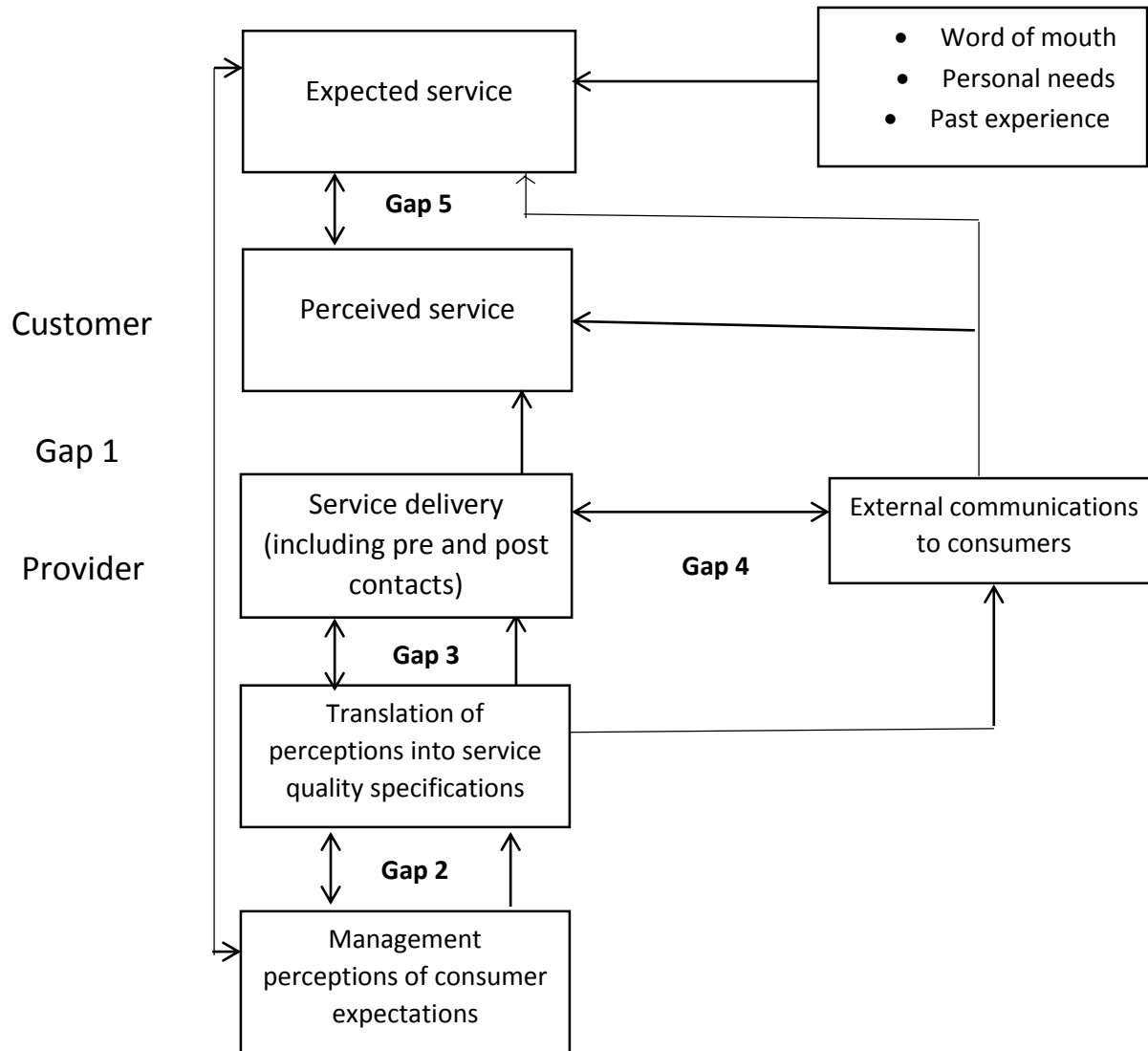
Gap 3: variations between service quality specifications and service actually delivered (poor delivery of service quality);

Gap 4: Difference between service delivery and the communications to consumers about service delivery (promises mismatch delivery);

Gap 5: Difference between consumer's expectation and perceived service; this gap depends on size and direction of the four gaps associated with the delivery of service quality on the marketer's side.

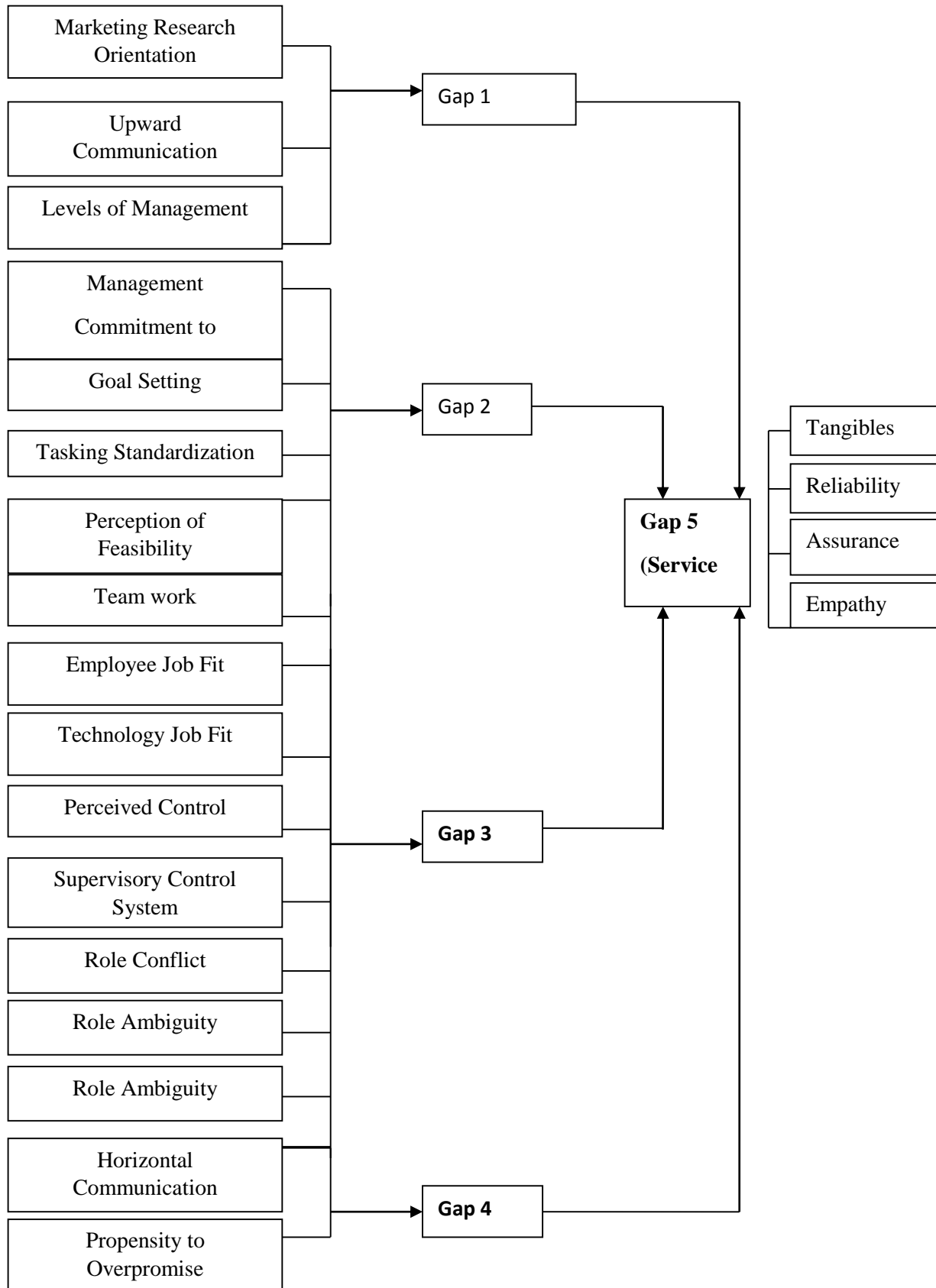
Based on this, the SERVQUAL instrument was developed; it initially consisted of ten dimensions (Parasuraman et al., 1988). The ten were later refined into five dimensions: reliability, responsiveness, tangibles, assurance (communication, competence, credibility, courtesy, and security) and empathy which capture access and understanding or knowing the customers. Later in 1991 SERVQUAL was revised by replacing "should" word by "would" and in 1994 by reducing the total number of items to 21, but five dimensional structure remaining the same. In addition to this empirical research, the authors later came out with the extended service quality model. According to this extended model (**Figure 2.2**) most factors involve communication and control process implemented in organizations to manage employees.

Figure 2.1: The Gap Model of Service Quality



Source: Parasuraman et al. (1985). Adopted from "A conceptual model of service quality and its implications for future research". The journal of Marketing, 1985.

Figure 2.2: The Extended Gap Model of Service Quality



Source: Zeitharai et al. (1988)

Again, many other generalise models of service quality have been developed, each postulating different quality dimensions. For example, according to Gummesson (1992) quality may be categorised into humanistic quality and technical quality approaches to service quality. According to the author, in service there is a humanistic quality approach at one extreme stressing customers, personnel, leadership and culture, whereas at the other end lies a technical approach concerning operations management, statistics and methods of measurement. Gummerson divided quality into services, tangibles and software, but he stresses the importance of a total service offering. According to Lehtinen and Lehtinen (1991) found service quality to be made up of physical quality, interactive quality and corporate quality, as well as process and output quality. They divided quality into input and output, where the output consists of total service offering in terms of quality, and the input includes both tangibles and intangibles elements.

Many later studies have tried to apply the concept of service quality to many specific industry contexts by building on existing models of service quality, notably the SERVQUAL model by Parasuraman et al. (1988) and the Functional and Technical quality model of Gronroos (1984). Ahmad & Sungip (2008) in a study of service quality in Malaysian insurance industry found reliability and responsiveness were the main driving forces of service quality problems since their study showed that the gap between customers' expectation and perception was widest for reliability, followed by responsiveness. Their study shed some light on the service quality dimensions that are critical to the insurance industry in Malaysian insurance industry and provided managerial implications for managing service quality with country-specific strategies.

Graham (2004) also researched into service quality in insurance service context in Greek and Kenya using the SERVQUAL instrument and found that the SERVQUAL metric requires substantial modification (customization) prior to its application.

They reported that only 55% of items within the two scales used had universal application within the two industries is reason enough to be wary when applying SERVQUAL. They further found that, in the insurance industry context of Kenya and Greece, quality gaps that obtained were largely similar, that reliability and empathy were the most deficient. Technical quality is the quality of what consumer actually receives as a result of his/her interaction with the service firm and is important to him/her and to his/her evaluation of the quality of service.

1. Functional quality is how he/she gets the technical outcome. This is important to him or her and to his/her views of service he/she has received.
2. Image, which could be referred to as reputational quality, is very important to service firms and this can be expected to build up mainly by technical and functional quality of service including the other factors (tradition, ideology, word of mouth, pricing and public relations).

Based on the above review of the literature, it is expected that customer satisfaction will be positively influenced by service quality induced by operational efficiency.

2.10.5 Price

Again, customer satisfaction is driven by perceived price or value. Though the concept of value is relative and has several dimensions to it, Zeithaml (1988) considers customer value as the overall assessment of the utility of a product based on perception of what is received and what is

given. Dodds et al (1991), controvert that customer perceptions of value represent a trade-off between the quality or benefit they receive in the product relative to the sacrifice they perceived by paying the price. The perceived value process involves a trade-off between what the customer gives such as price/money, sacrifices, perceived risk, opportunity cost, and learning cost in exchange for what he/she gets such as quality, benefits, utilities (Yonggui Wang & Hing-Po Lo, 2002; Ravald & Gronroos 1996; Zeithaml 1988). One of the most recent research in the work of Hume & Mort (2008), confirms that value or price quality is a positive predictor of satisfaction. This is consistent with the findings of Rust and Oliver (1994) who suggested that value had a direct and encounter-specific input to satisfaction.

The present study will include functional quality, technical quality, image and price as the determinants of customer satisfaction aside the key variable operational efficiency. The implication of the antecedents of customer satisfaction is that managers must take effective strategies to ensure operational efficiency and manage customer perceived quality, customer expectations, and customer perceived value in order to reap the full benefits of customer satisfaction measurement (Gronroos, 1990; Kauppinen-Raisanen et al, 2007).

2.10.6 Customer Satisfaction and Behaviour Intention

Customer satisfaction impacts the behaviour of customers in a number of ways. First customer satisfaction is found to be a key determinant of customer retention (Rust and Zahorik, 1993; Zeithaml et al, 1996). Again, according to Reichheld (1996), customer satisfaction is regarded as a necessary antecedent of customer loyalty, which in turns drives profitability and performance (Heskett et al, 1997; Reichheld, 1993). Also, Increasing customer satisfaction and customer retention leads to improved profits, positive word-of-mouth, and lower marketing expenditures (Reichheld, 1996). In many studies, customer satisfaction is positively correlated with customer

re-purchase, likelihood to recommend, positive word-of-mouth, customer loyal and retention. But, customer satisfaction is negatively correlated, to a large extent, with customer complaints and switching intention (Yonggui Wang & Hing-Po Lo, 2002).

It must be pointed out that customer loyalty and retention are not always attributable to customer satisfaction. It is because a customer may not be satisfied with the services/products but may find it difficult to switch to a competitor simple because of the circumstances he/she is faced with. This is usually common in ports operations where certain Inland Containers depots are designated to handle specific goods. In this circumstance the customers have no other choice.

It becomes deceptive and misleading to assess or use customer loyalty trends to conclude that customers of an organisation are satisfied. Instead it is better a company examines, as part of its customer satisfaction study, the switching intention and likelihood to recommend. These two behaviour intentions are more reliable factors to track customer satisfaction because they are directly and strongly linked to customer satisfaction (Yonggui Wang & Hing-Po Lo (2002). Satisfied customers are more likely to recommend services to family and friends and are less likely to switch. It is a fact that customers who are dissatisfied will bad-mouth a company and spread the news to eight to ten other people (SPSS white paper, 1996). Though switching intention is also influenced by several factors, when known it triggers management action to find out appropriate actions to take to satisfy customers.

In view of the above, the present study examines the relationships that exist between customer satisfaction, and behaviour intentions such as likelihood to recommend, re-purchase intention and switching intention in port operations. I, therefore, propose that overall satisfaction will significantly influence consumers' behaviour intentions.

2.10.7 Influence of Demographic Variables

Many past studies have found that satisfaction of customers may be influenced by demographic variables such as gender, age group, income and educational level. There have been divergent views in the service literature regarding the impact of demographic variables on satisfaction of consumers. While some past studies have suggested that men and women differ in their satisfaction of services in the service encounter (Anderson, Pearo & Widener, 2008; Henderson et al., 2004), others show that no such difference significantly exists (Tucker & Kelly, 2000).

Gender. Previous studies have found that women are more likely to have greater overall satisfaction than men in many different industry contexts (e.g.: Bryant and Cha, 1996; Mittal & Kamakura 2001). One explanation for this finding is that women may be more experienced shoppers with more skills at making attribute comparisons. Experience enables them to identify items that best fit their personal needs and leads to higher overall satisfaction than men (Bryant and Cha 1996). However, these findings may not be the case for the maritime industry context, therefore the present study.

Age: Previous studies have found that elderly people are, on average, slower in encoding new information and in retrieving information stored in memory, thus reducing information processing capability (John and Cole 1986). According to Mittal and Kamakura (2001) older people may have lower “thresholds of acceptable satisfaction” because information search for a new provider is more costly. However, research also suggests that age-related differences in product or service evaluations may be due to different expectations, driven by differences in other service-specific factors such as culture at birth, maturation and the type of service patronised (Bryant and Cha, 1996). In general, past research has found that older people are more satisfied than younger people (Mittal & Kamakura 2001; Bryant & Cha, 1996).

The influence of income and educational levels has been widely studied in many different industry contexts (Mittal and Kamakura, 2001). Such studies have it that the low income earners and low levels of education positively correlate with lower satisfaction levels while higher income groups and higher educational levels are associated with higher satisfaction levels. Though there are some differences in the findings on these demographics in marketing literature, it will be expedient to explore the impact of these variables in the port operational context in developing countries like Ghana to provide both scholars and practitioners with empirical evidence that will serve as basis for marketing strategies and further empirical enquiry.

2.10.8 Main Research Constructs and Dimensions

The main research constructs are effect of operational efficiency on customer satisfaction, determinants of satisfaction such as functional quality, technical quality, price, reputational quality, and behaviour intentions.

2.10.9 Satisfaction construct

Based on the literature review, overall satisfaction will be measured using three question items as indicators of the satisfaction construct. One is based on satisfaction measure and the other two are based on desire and expectation disconfirmation measures; a comparison of perceived performance with expectation of (expectation disconfirmation, Khalifa & Lui, 2002), and comparison of perceived performance with desired services (desire disconfirmation, Khalifa & Lui, 2002).

Thus, in measuring overall satisfaction, respondents will be asked to respond to the following three questions using a five-point Likert scale ranging from one to five (See Appendix B):

- *Overall tell how satisfied or dissatisfied you are with the service quality delivered by*

port of Tema with respect to shore handling service.

- *To what extent have port of Tema in discharging shore handling services met your expectations?*
- *How well did the services you received from Port of Tema compare with the ideal/desired set of services?*

2.10.10 Determinants of Satisfaction: constructs, indicators and measures

The determinants of satisfaction were based on the service quality models and price. In understanding service quality and its dimension the study adapts service quality model developed by Gronroos (1984). It consists of functional quality, technical quality and image quality. The fourth determinant that would be added is price or “Ports charges” which was found through a preliminary in-depth focus group interview in this study to be a very important service quality dimension from the Port of Tema customers’ perspective. This has been supported by findings in the marketing literature that value quality in terms of the consumers’ sacrifices for the product/service could be an important quality dimension that affects satisfaction (Gyasi & Azumah, 2009; Hume & Mort, 2008; Ravald & Gronroos, 1996; Zeithaml, 1988).

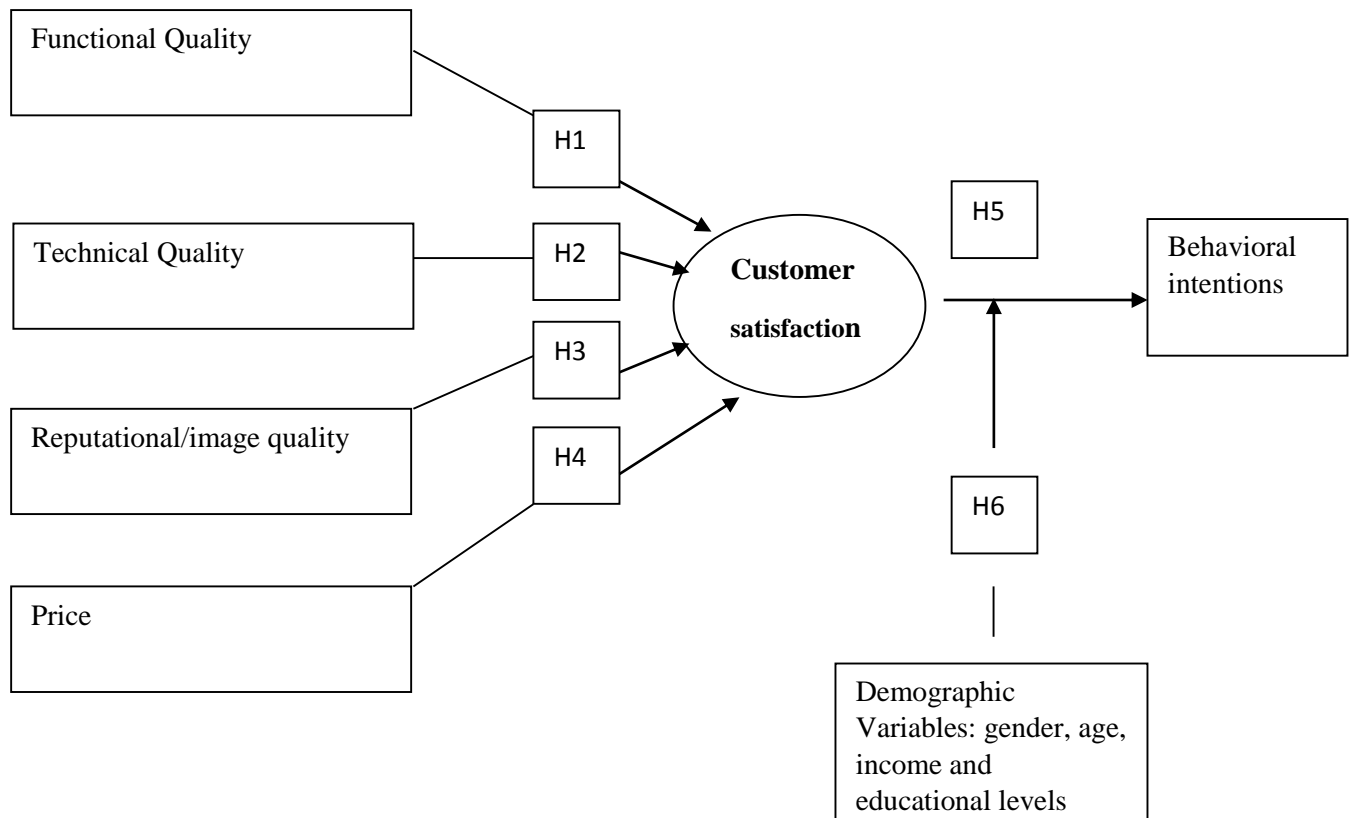
The indicators or items for measuring each dimension are all based on previous studies in the literature (Gi-Du & James, 2004; Gyasi & Azumah, 2009; Parasuraman, et al., 1988; Sattari, 2007; Zeithaml, 1988) and modified to suit the research context. Functional, technical, image and price quality dimensions items will be measured on a five-point Likert scale from much better than expected to much worse than expected (See Appendix B), which are assigned values from one to five respectively.

2.10.11 Satisfaction and behaviour intention relationship

The present study will also examine the relationships that exist between customer satisfaction and behavioural intentions of customers such as likelihood to recommend the use of Port of Tema for International trade. Behaviour intentions items will be measured on a five point Likert scale (see Appendix B). Moreover, the study will focus on examining how the relationship between overall satisfaction and behavioural intentions is influence by demographic variables such as gender, age group, occupation, income, educational level, length of being a customer, and type of port services one enjoys.

From the foregoing, Figure 2.3 depicts the conceptual framework for this study.

Figure 2.3 Conceptual framework



2.11 Summary

In this study, customer satisfaction with service quality is measured and analysed in the context of Port operations. The study conceptualizes customer satisfaction as a process, subjectively, objective, cumulative, multi-dimensional, cognitive and affective. Gronroos' model of SERVQUAL (Gronroos, 2000) is adopted as the main theoretical framework for this study because it is comprehensive and its service quality dimensionality is justifiably suitable in the context of port operations. 'Price' dimension was added through focus group discussion. Important SERVQUAL dimensions need to be explored to trigger managerial action. Finally, the influence of demographic variables on customer satisfaction is discussed.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter presents the approach and methods used in undertaking the research. Explanations of the research design used, the data requirements, the various data sources, the population, survey instruments employed, the sampling techniques, data analysis and data collection limitation as well as ethical issues are contained in this chapter.

3.2 Research Design

The study employed the survey method of data collection. A survey is a type of method in which the opinions of sample or population is sought by the researcher, usually with a more objective research instrument, say structured questionnaire. It is usually associated with a deductive approach and is conducted usually in business and management research to prove or disprove certain assumed propositions and hypothesis. It allows for the collection of large amount of data from a large population economically. It is most frequently conducted to answer research questions relating to ‘who, what, how much and how many’ involved in a problem under study.

3.3 Research Method

The researcher adopted both quantitative as the main method and qualitative approach to access the effect of operational efficiency on customer satisfaction. Quantitative research method is a formal, objective, systematic process in which numerical data are used to obtain information about the world. This research method is used to determine the cause-and-effect interactions between variables (Burns & Grove 2005:23). Qualitative is a generic term for investigative methodologies described as ethnographic, naturalistic, anthropological, field, or participant observer research. It emphasizes the importance of looking at variables in the natural setting in

which they are found. Interaction between variables is important. The interviewer is integral part of the investigation (Jacob, 1988)

3.4 Population

A population is the total of all the individuals who have certain characteristics and are of interest to a researcher. Polity and Hungler (1999:37) refer to the population as an aggregate or totality of all the objects, subjects' members that conform to a set of specifications. In this study the population as clearly specified by the scope of the study is Clearing Agents and Freight Forwarders (shore handling services) at Port of Tema. The target population for the study comprise of all individual clearing agents at Port of Tema. There is no available statistic on the total number of Clearing Agents and Freight Forwarders operating at Port of Tema.

3.5 Sample size

As a result of limited data on the total population, cost and time constraints, a convenient sample size of an equal proportion of 400 was used.

3.6 Sampling Techniques

A convenient sampling technique, which is non-probabilistic sampling technique, was used to select the respondents for three reasons. First the customers are scattered across the country which makes it difficult to contact each of them individually. Again it is difficult getting the total numbers of Agents who are directly involve in the operational work of clearing and forwarding. Thirdly, the researcher is working within the demand of an academic schedule so has very limited time and resources to conduct the study.

3.7 Data for the Study

The data collected for the study consisted of primary and secondary data. The type of data, their sources and the instrument used in gathering them are discussed as follows:

3.8.1 Primary data

Primary data are data which are collected from the field under the control and supervision of an investigator. Both Structured Questionnaires, Observation, focus group discussion were employed in the data collection. The structured questionnaires were used to get the unbiased opinion of respondents; the discussion was done to establish the level and nature of operational efficiency at Port of Tema from staff. Specimen of the questionnaires and the focus group discussion with the staff are attached as Appendix **A and B**. The data collection instruments made it prudent for respondents to offer the information required for the analysis.

3.8.2 Secondary Data.

Secondary data refers to data collected by someone other than the user. Relevant literature which formed the major sources of secondary data was reviewed from sources such as books, corporate journals, electronic library among others to appreciate key concepts, issues and component relating to operational efficiency and customer satisfaction. Gaps identified in the literature review led to the collection of appropriate data through the primary data gathering.

The use of this medium of collecting data was so beneficial because, it helped the researcher to make primary data collected more specific since it served as the basis to establish the gaps and deficiencies and what additional information needed to be collected. Saunders et al (2007) quote Stewart and Kamins (1993) as stating that secondary data are likely to be of higher quality than could be obtained.

3.9 Data Collection

Both secondary and primary data was used to carry out the research. The method for collecting primary data was through focus group discussion and the use of structured questionnaire while the secondary data was collected through company's web sites, internet, and documents, among others

3.10 Pre-testing

A pre-testing activity of the data collection instruments were carried out to ascertain the adequacy of the questionnaire in obtaining the desired response. Issues focused on were the construction of the English Language, validity and reliability of the questions.

There were a couple of ambiguities relating to the construction of the questions which were subsequently modified to remove any ambiguities regarding the intentions of the researcher. The pilot test was very helpful to the researcher because it gave the researcher the confidence that the questions were going to elicit the needed response required for the study. It also gave an indication that there were going to be follow up questions aimed at clarifying some answers. This made the researcher anticipate and prepared very well and this resulted in successful interview.

3.11 Limitation of Data Collection

As this project work is confined to the assessment of the impacts of operational efficiency on customer satisfaction, the review of the literature suggested that there is a wide range of issues that might have some impacts on customer satisfaction. A plethora of macro issues such as social, cultural, political, legal, economic and environmental issues are likely to be exogenous factors. To keep the study within a manageable proportions for rigorous and investigation and maintain parsimony, only a few theoretically driven rational issues have been included in this study with respect to operational efficiency and customer satisfaction. In addition, due to time

and financial resources constraints this study explores only a sizeable proportion of stakeholders within the maritime industry rather than considering all.

Largely, the data collection was very successful. However, it must be noted that some of the respondent had extremely tight work schedules coupled with individual personal commitments and this occasionally gave rise to delayed or rushed responses. Again, on a couple of occasions, agreed interview date and time had to be reschedule to enable a respondent attend to official assignment.

3.12 Data Analysis and Presentation

Data was analyzed using Statistical Package for Social Sciences (SPSS). Specifically descriptive statistic will be done using percentages and then presentation done in simple bar chart, pie chart and histogram aside descriptive narration. The secondary data collected were scrutinized to determine their suitability, reliability and adequacy and accuracy. The statistical tools were used to convey the meaning of the data gathered and as such made the analysis straight forward.

3.13 Ethical Issues

Almost all the stakeholders have strict policy on confidentiality. Divulging of information to a third party can expose their institution to public criticism and therefore being mindful of this ethical issue, the respondents were sometimes apprehensive in the disclosure of information. This genuine apprehension was however addressed by constantly assuring them that the data was purposely for academic exercise and their confidentiality will be highly assured. In furtherance to that names and other information that could easily reveal the identity of respondent was not disclosed in the data collected.

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSION

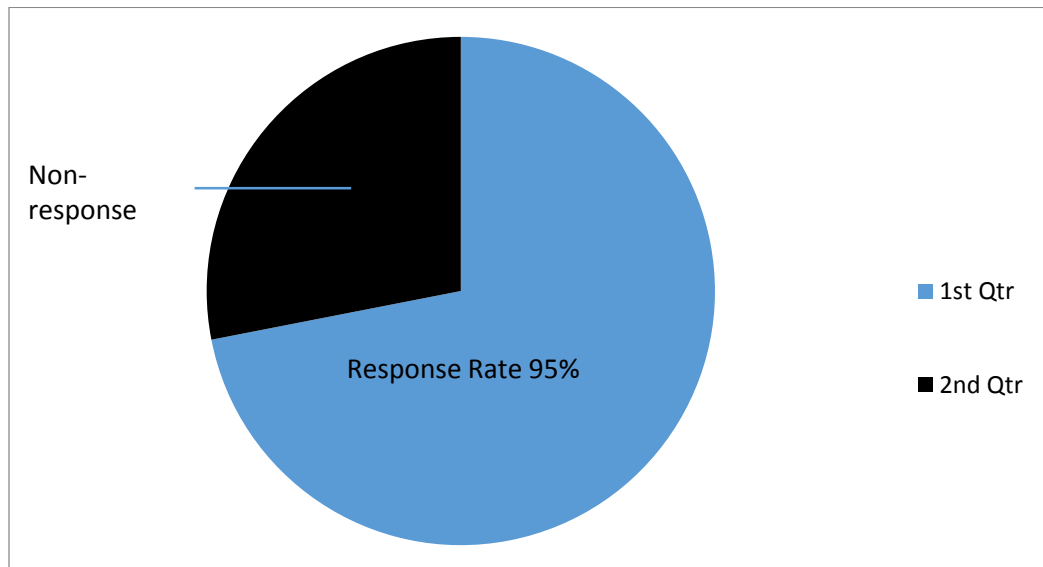
4.1 Introduction

In this chapter data gathered is presented and analysis done to address the research questions and objectives. The chapter plays a very cogent role in the entire research work since it relates empirical data to secondary data reviewed in the previous chapters. The following are the main headings;

4.2 Response Rate.

Out of the 400 questionnaires sent out 380 questionnaires were retrieved for analysis representing 95% response rate. The response rate is very high and as such enough data is gathered for the analysis of the phenomenon under study. The high response rate also gives validity to the findings from the data. Figure 4.1 below presents the response rate.

Figure 4.1: Response Rate



Source: Authors Field Survey, 2014.

4.3 Respondents Demographics

Table 4.1: Demographic Profile of Respondents

Variable	Category	No	%
Gender	Male	221	58.2
	Female	159	41.8
Age	Below 20	6	1.6
	20-29	150	39.5
	30-39	190	50.0
	40-49	20	5.3
	50 and Above	14	3.7
Relationship time	Below 4yrs	98	25.8
	5-10yrs	150	39.5
	11-20yrs	70	18.4
	21-40yrs	35	9.2
	41 and Above	27	7.1
Educational Qualification	SHS	72	18.9
	Post SHS	203	53.4
	Tertiary (HND, BSC, MSC, PHD)	105	27.6
Employment Status	Permanent	98	25.8
	Contract	127	33.4
	Casual	102	26.8
	Attachment	53	13.9
	Importer	102	26.8
	Exporter	11	2.9
	Freight forwarder	267	70.3
Nature of Clearance	Free zone	7	1.8
	Transit	73	19.2
	Import	293	
	Warehousing	7	1.8
Income level	Below GH¢ 100	9	2.4
	100-500	73	19.2
	501-1000	254	66.8
	1001 and Above	37	9.7

Source: Authors field survey, 2014

The Characteristics of respondents representing the customers of Port of Tema who undertake shore handling services (clearing) on behalf of their clients are presented in Table 4.1. The gender of respondents was split as 58.2% males and 41.8% females. In terms of age distributions, 1.6% of the respondents' fell below 20 years, while 150 respondents representing 39.5% were between 20 to 29 years. 190 representing 50.0% were between 30 to 39 years, 5.3% were within 40-49 and 14 representing 3.7% ages above 50 years. These implies majority of the agents are aged between 20-39 years representing 89.5%.

Earnings in-terms of remuneration or salary (income) monthly distributions are as follows; 2.5% earned below GH¢100. 73 of the respondents representing 19.2% earns between 100 to 500 Cedis, while majority of respondents with a population of 254 representing 66.8% earns between 501 to 1000 Cedis and 97% earns above GH¢ 1001.

The research revealed that majority of respondents engaged in the day to day operations are non-permanent staff. 98 representing 25.8% are permanently engaged by their various clearing houses. 23.4% representing 127 respondents are on contract while casuals being the second highest category of engagement represent 26.8% and the least being 53 respondents representing 13.9% in-terms of percentage are on attachment.

Enquiring the relationship period with the Port, 25.8% of the respondent representing 98 have been doing business with the port for less than 5 years. 150 respondents have been working in the port for a period of 5-10 years representing 39.5%, 70 respondents representing 18.4% have also worked in the port as agents for a period of 11-20 years. Out of the 380 respondents, 9.2% have also been working in the port for almost 40 years while 7.1% had worked for more than 41 years. This is an indication that more than 74.2% of respondent have had long spell with the port and as such will have rich experience and information that will go a long to help the study.

On educational qualification, 18.9% of respondents hold SHS certificate. The majority of the respondents that is about 53.4% of the population are post-secondary certificate holders. However, 27.61% had tertiary qualification specifically in diploma/HND, 1st Degree and postgraduate certificate.

The type of clearance service respondents engage in also revealed that majority (77.1%) do import while 1.8%, 19.2% do Free zone and Transit respectively. The remaining 1.8% are engaged in warehousing clearance services.

During an interview with a sampled group of staff of GPHA, Tema the following questions were posed as the respective response was given.

1. What is the level of operational efficiency at GPHA, Tema?

With the combination of well professional human resource and information communication technology systems, we are able to discharge our ports operational services to the satisfaction of our customers under corporate cost control measures. The level of operational efficiency is absolutely high and we keep on improving on it so as to attain the status of trade and logistic hub of West Africa.

2. How does your operational efficiency affect your customers' satisfaction?

2a. Pricing of services

The GPHA adopts two strategies in determining or setting its tariffs. The first strategy is based on cost. Under this structure tariffs are determined to generate enough revenue to cover cost, investments, operations, fixed cost, variable, etc. the correlation between operational efficiency at Port of Tema and customer satisfaction under this strategy is that the higher the level of operational efficiency the lower the cost of production due to efficiency and effectiveness of

factors engaged in service rendering. The current competitive tariff for which our customers are satisfied with is due to our current level of operational efficiency and we are determined to improve upon it. The second strategy is based on performance where tariff is regulated according to the use of and efficiency of the ports facilities and equipments. In all, the level of customer satisfaction with respect to the tariff or price is influenced by the level of operational efficiency during the cause of rendering service.

2b. Decrease in customers cost of doing business

Due to the high level of operational efficiency at Port of Tema customers are able to clear their cargoes within the shortest possible period thereby avoiding or reducing demurrage charges and rent. The effect is that customers are able to cut down cost of doing business and this makes them very satisfied.

3. The safety and quality conditions of goods within the port.

The twenty four hour security surveillance within the port ensures that goods belonging to our customers are well secured. Also the efficient power management system at the reefer terminal ensures that all refrigerated cargoes stay good until they are cleared. Customers are no longer worried of losing their assets at the Port of Tema any longer through theft or any other means.

4. Avoidance of congestions

Also the fast condition under which we serve our customers helps in reduction of congestion in the cargo terminals. More space are always available making it necessary for vessels to discharge and also load quickly. The positive effect of these operational efficiency are that vessels do not wait for long at anchorage due to non-availability of berthing space or due to the fact that the

container stacks are exhausted hence vessels cannot discharge laden containers. Again trucks are able to load quickly to exit the port and to return on time to continue business.

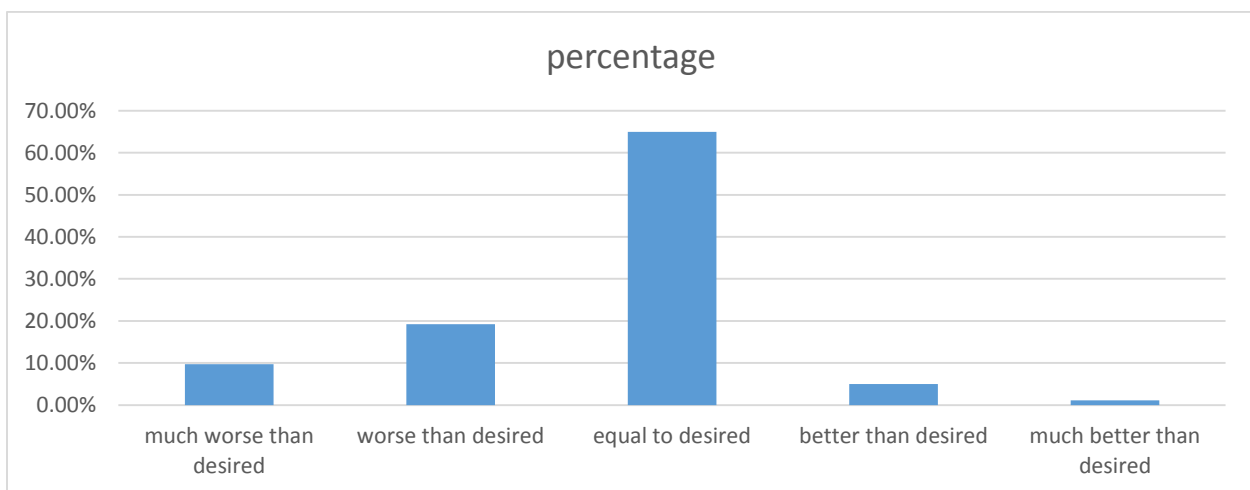
4.4 Overall Satisfaction with Service Delivery

This section presents analysis of customer satisfaction with service delivery at the Port of Tema. The analysis touched on the customer satisfaction with regards to the quality of service, flow of information, standard of service, and general appearance of employees and environment

4.4.1 Quality of service received from Port of Tema relative to ideal desired service

The researcher sought to establish from respondents their general assessment of the quality of service offered by Port of Tema. The survey reveals that, 9.7% of respondent feels that service received from the port is much worse than desired. Again 19.2% contends that service received is worse than desired. However a majority percentage of 65% feels that the nature of service provided them is equal to what they desire. 5% and 1.1% respondents in contrast feels that service rendered by Port of Tema, is better and much better than desired respectively.

Figure 4.2 Quality of service received from Port of Tema relative to ideal desired service

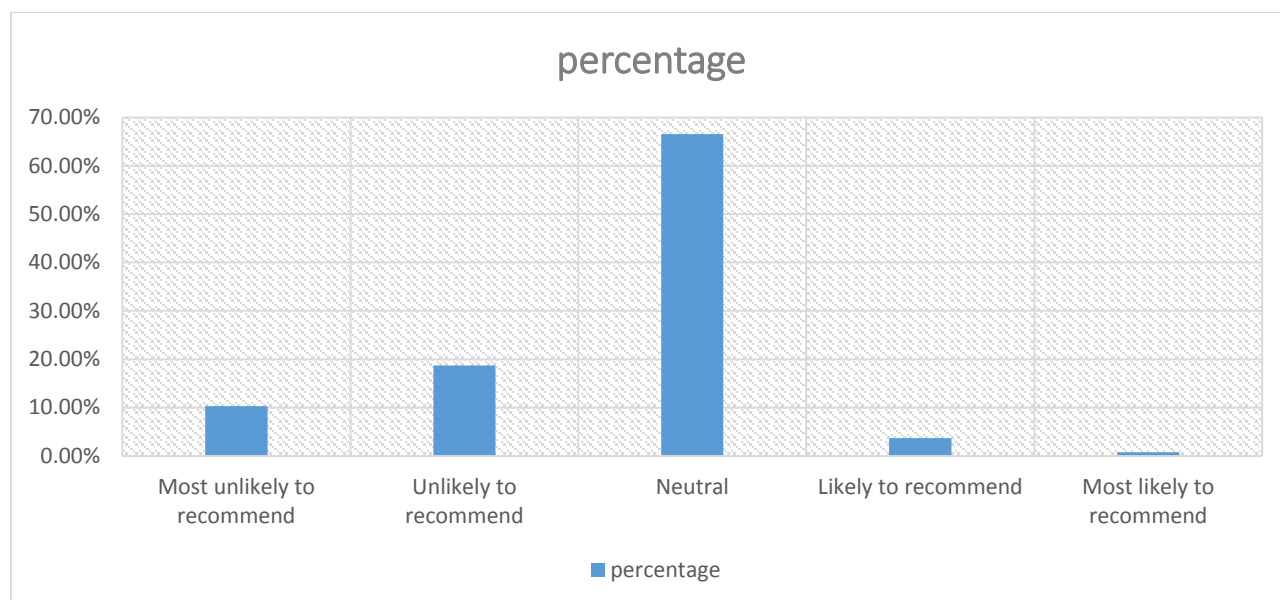


Source: Authors Field Survey, 2014

4.4.2 Willingness to recommend Port of Tema to importers and exporters

The researcher sought to know from respondents if they will be willing to recommend the services of Port of Tema to prospective or business partners (importers and exporters). A population of 39 representing 10.3% feels that they are very likely to recommend the services of the port to others. Again 18.7% feels they are unlikely to recommend. However a majority 66.6% are neutral or indifferent, while 3.7% and 0.8% are of the opinion that they are likely and very most likely, recommend respectively the use of the Port to others.

Figure 4.3 Willingness to recommend your port to importers and exporters



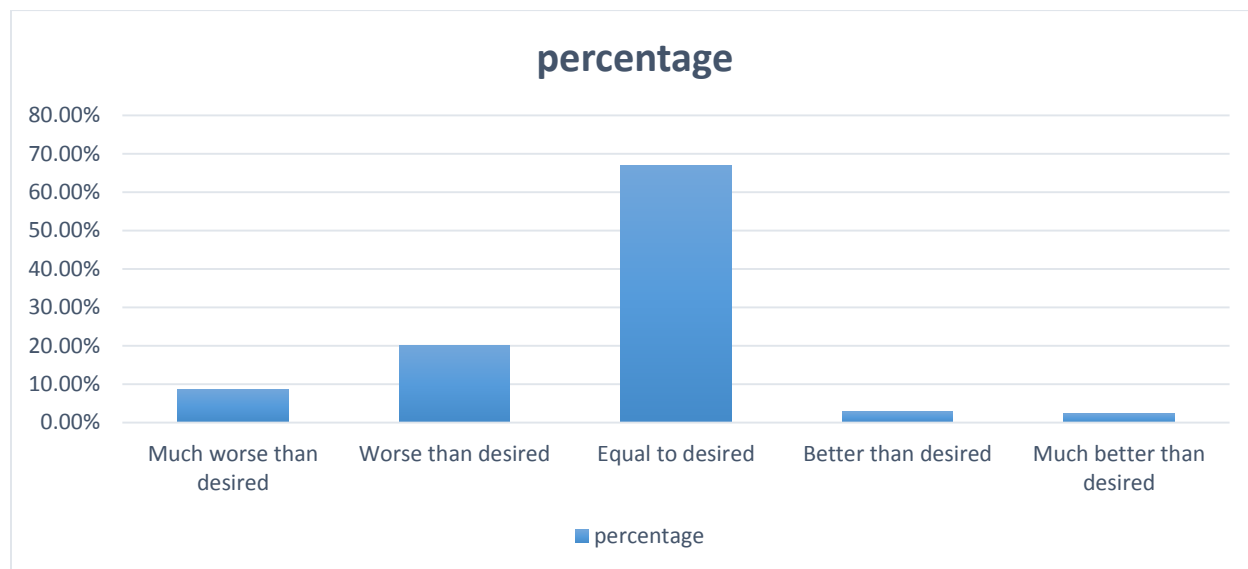
Source: Authors Field Survey, 2014

4.4.3 The extent of Respondents expectations to standard of service

Figure 4.4, reveals that the nature of service GPHA, Tema is rendering to its customers match up to their expectation. A majority population of customers with a percentage of 67.1% feels that GPHA, Tema is able to render service to meet their expectation. However a less significant population of 8.7% and 20% differ and suggest that the service by the port is much worse and

worse than they expected correspondingly. Nevertheless 2.9% and 2.4% believe that their expectations are better and much better met than anticipated respectively.

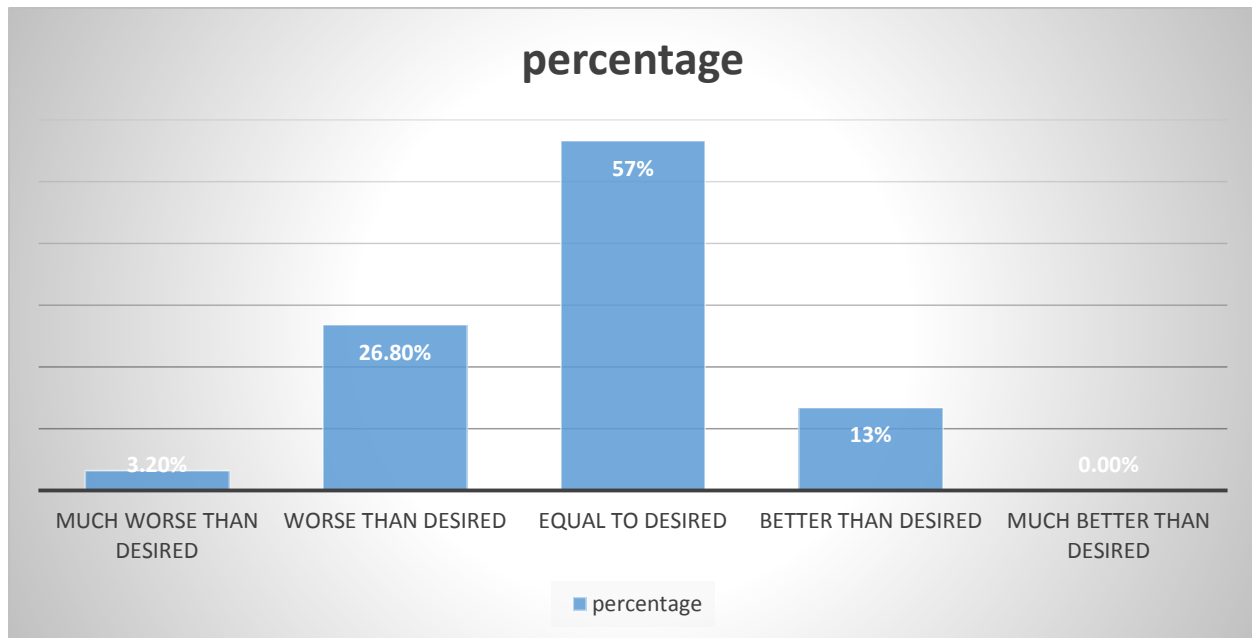
Figure 4.4 The extent of Respondents expectations to standard of service



Source: Authors Field Survey, 2014

4.4.4 Satisfaction with quality of service at the Port of Tema

In general terms majority of customers of GPHA, Tema considers that the service quality offered them are above standard and are very satisfied with it. From total respondents of 226, 59.5% attests to the fact that service quality offered at the port is above standard. 3.9% are of the strong opinion that they are very dissatisfied. A population of 102 representing 26.8% however are dissatisfied while 4.7% are very satisfied with the overall service quality they do receive from the port.

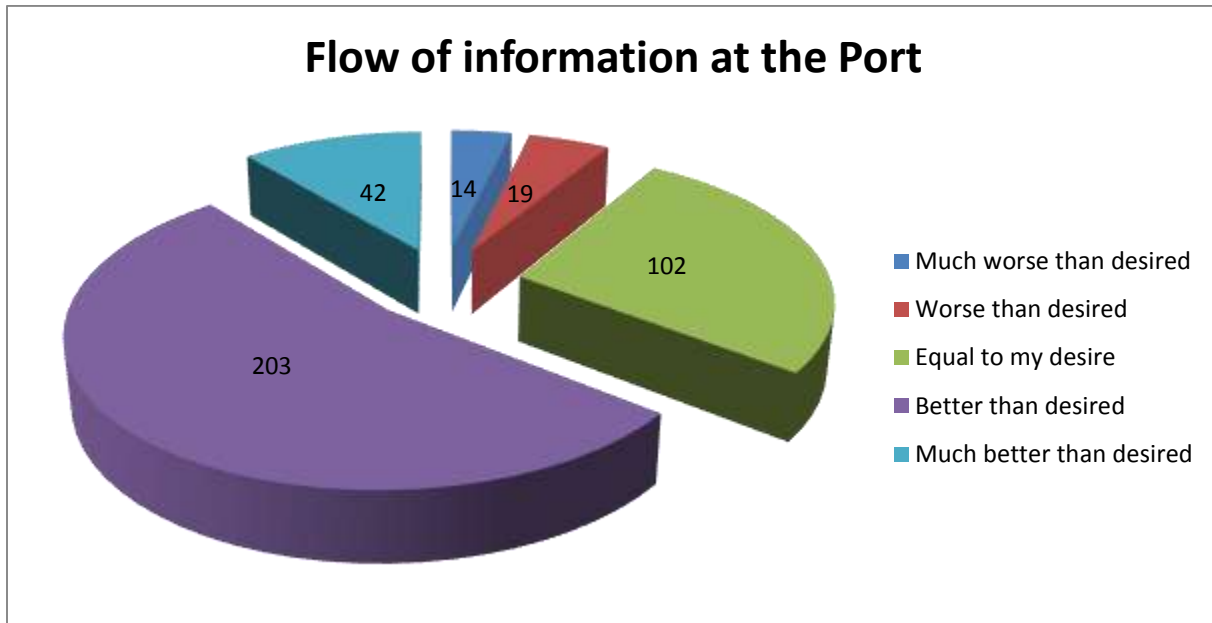
Figure 4.5 Satisfaction with quality of service at the Port of Tema

Source: Authors Field Survey, 2014

4.4.5 The flow of information at the Port of Tema

Figure 4.6 reveals that the marketing and public relations department of the port provides customers with relevant information required to enable them conduct their business with respect to port activities well. Majority populations of 203 respondents representing 53.4% attest to that fact and feels that the flow of information from the port authority to customers can be describe as better than expected. Again 42 respondents forming 11.1% as depicted in the diagram feels strongly that the level of communication is much better than expected. Conversely 3.7%, 5% and 26.8% are of the opinion that, the level of communication is much worse, worse and equal to their expectation respectively.

Figure 4.6 The flow of information at the Port of Tema

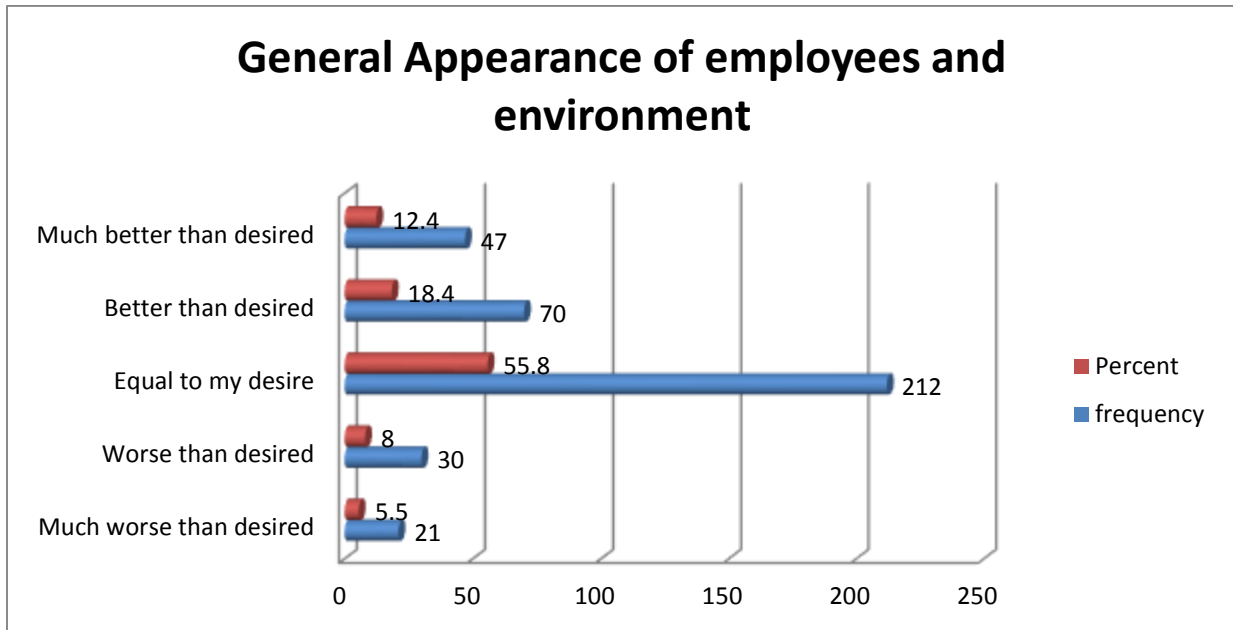


Source: Author’s Field Survey, 2014

4.4.6 General appearance of employees and environment

Figure 4.6, reveals that the appearance of staff and the general working environment is neither not worse than expected nor better than expected. A population of 5.5% and 8% are of the opinion that both the appearance of staff and working environment of the port is much worse than expected and worse than expected respectively. The figure further reveals that 55% believes that their expectation with regards to staff appearance and working environment has not been exceeded. However 18.4% and 12.4% respondent holds the judgment that their expectations have been exceeded in better and much better manner respectively.

Figure 4.7 General appearance of employees and environment

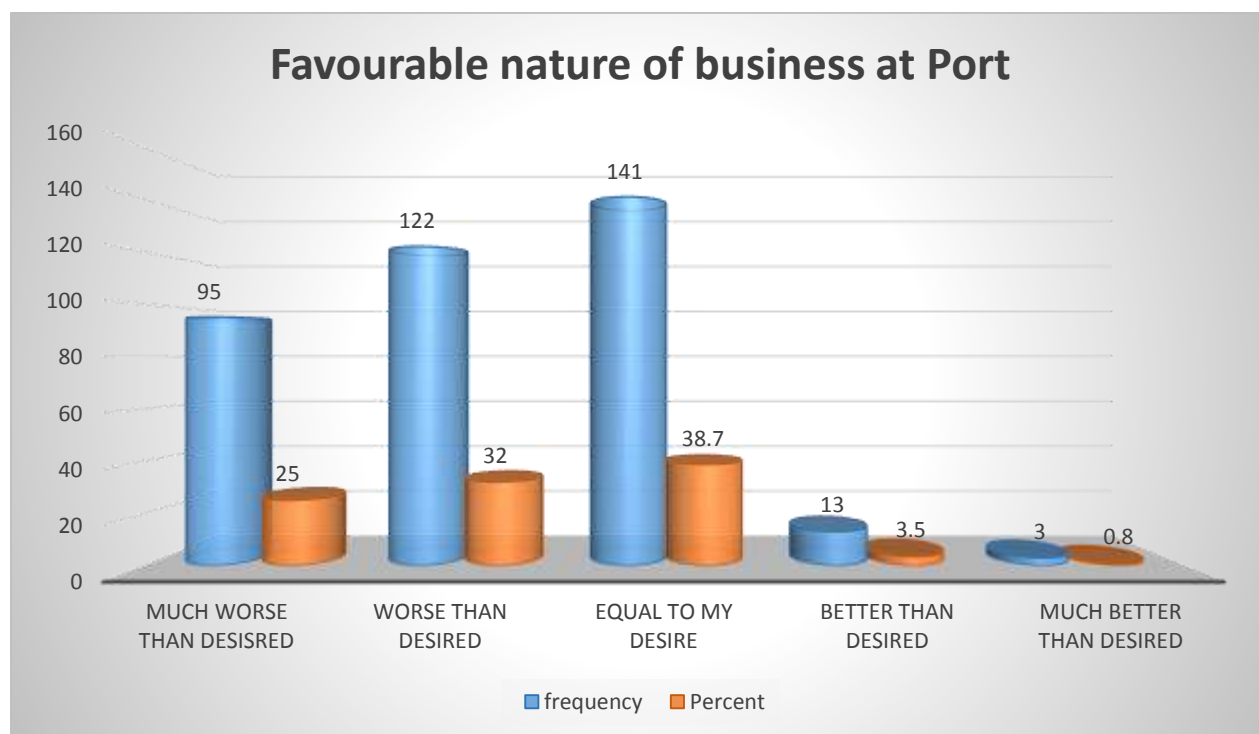


Source: Authors Field Survey, 2014

4.4.7 Favourable nature of business terms and conditions at Port of Tema

The researcher sought to find out from respondents their view on business terms and conditions at the Port of Tema. A proportion of 38.7% of the respondent believes that their expectation has equally been met whiles 25% and 32.6% clearly describe it as much worse than expected and worse than expected respectively. However 2.4% and 0.8% proclaim that their expectations have been exceeded in a better and much better way than projected.

Figure 4.8 Favourable nature of business terms and conditions at Port of Tema

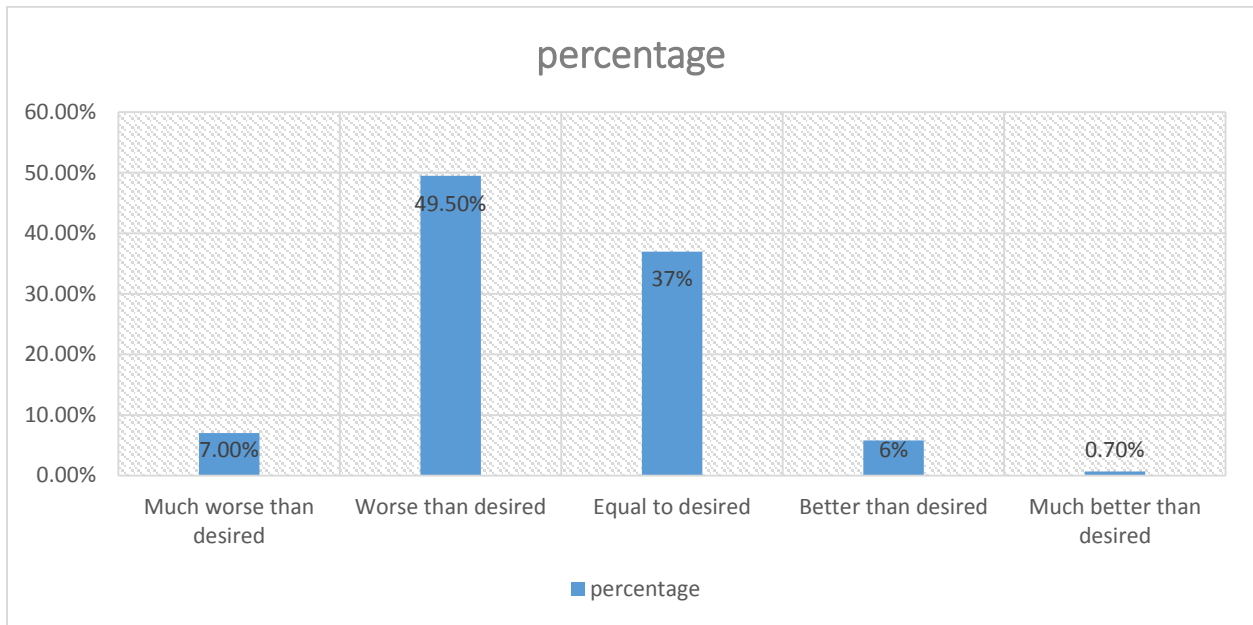


Source: Authors Field Survey, 2014

4.4.8 Port consultation with customers.

The researcher sought to find out from respondents the extent to which the Port consult them and their assessment of how customers' interests are taken into consideration when policies or decisions that directly affect them are being taken. 37% believes the extent of the authority and customers' consultation necessary for customers interest to be catered for, is equal to their desire. Again 5.8% and 0.7% trust it is better and much better than what they desired respectively. However 49.5% and 7% assessed it as worse and much worse than desired respectively.

Figure 4.9 Port consultation with customers.

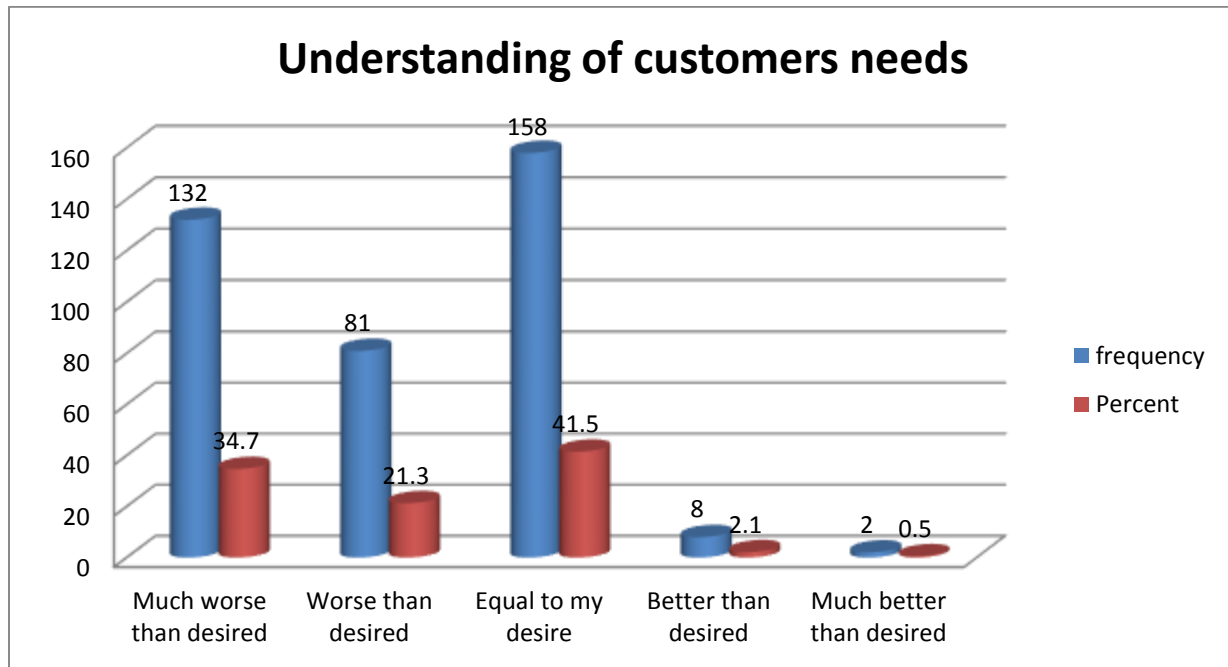


Source: Authors Field Survey, 2014.

4.4.9 The Ports understanding of its Customers' needs

The researcher sought to establish from the respondents, their assessment of the extents to which their needs are understood by the Port Authority which may reflect in coming up with tailored services that delight customers. In response 21.3% and 34.7% believe their expectations are much worse and worse than expected correspondingly. Again 41.5% feels their expectations are equally met while 2.1% and 0.5% are satisfied with the belief that their expectations are better and much better met than anticipated respectively.

Figure 4.10 The Ports understanding of its Customers’ needs

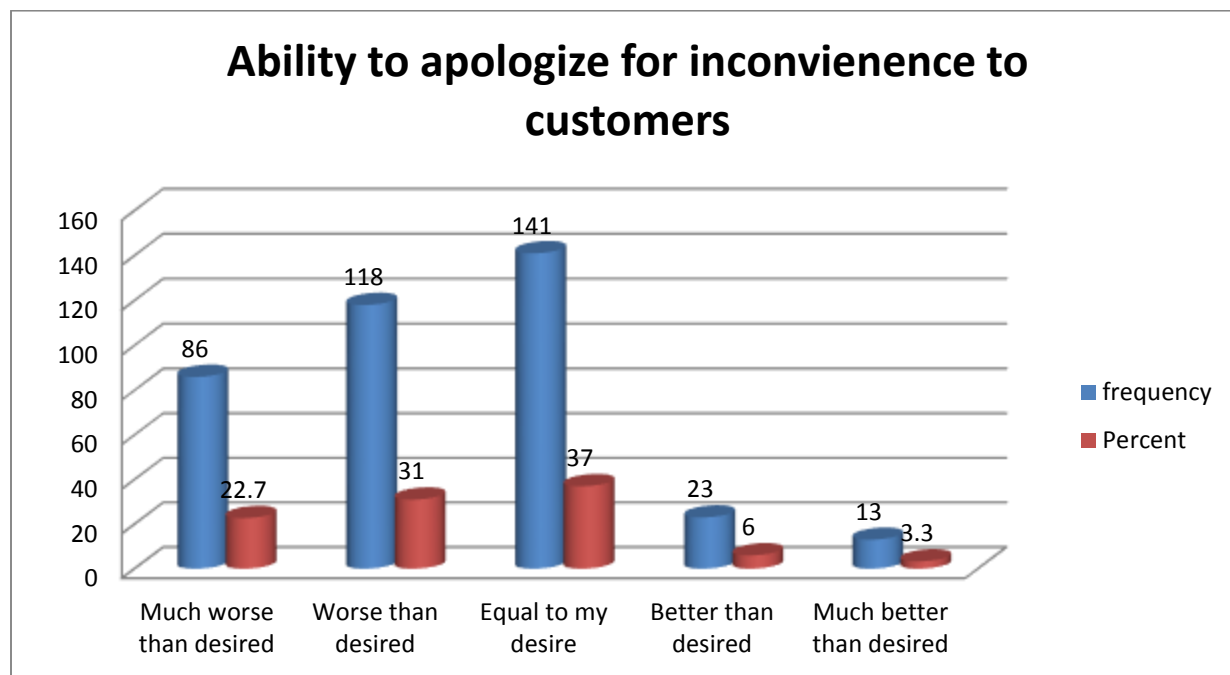


Source: Authors Field Survey, 2014.

4.4.10 Ability of Port Authority to apologize for inconvenience to customers

The researcher sought to know from the respondent the ability of the Port Authority to apologise for inconveniences and quickly serve customers. A 41.6% respondents believes their expectations are equally met. However a majority 22.7% and 31.9% are of the opinion that their expectation are much worse off and worse off than expected respectively. A minority 3.4% and 0.4% feels strongly that their expectation are better met and much better exceeded than anticipated respectively.

Figure 4.11 Ability of Port Authority to apologize for inconvenience to customers

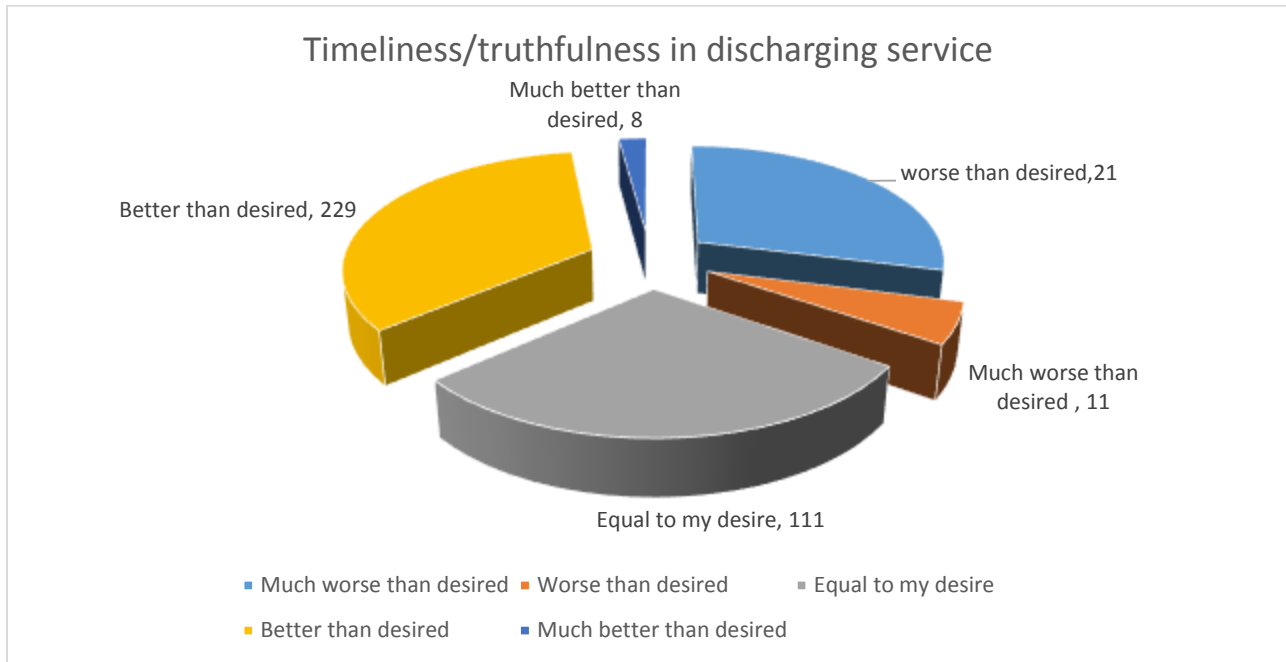


Source: Authors Field Survey, 2014.

4.4.11 Timeliness and truthfulness of the Port in discharging its services

The researcher sought to find out from respondents their assessment of Port of Tema staff attitude towards time and how truthful they are in discharging their duty. A majority percentage of 29.2%, 60.3% and 2.1% assessed staff attitude toward time and being truthful to customers as being equal to their desire, better than desired and much better than desired respectively. However a section of the respondents forming a percentage of 2.9% and 5.5% disagree and assessed attitude of staff towards time and being truthful to customers as, much worse and worse than desired respectively.

Figure 4.12 Timeliness and truthfulness of the Port in discharging its services

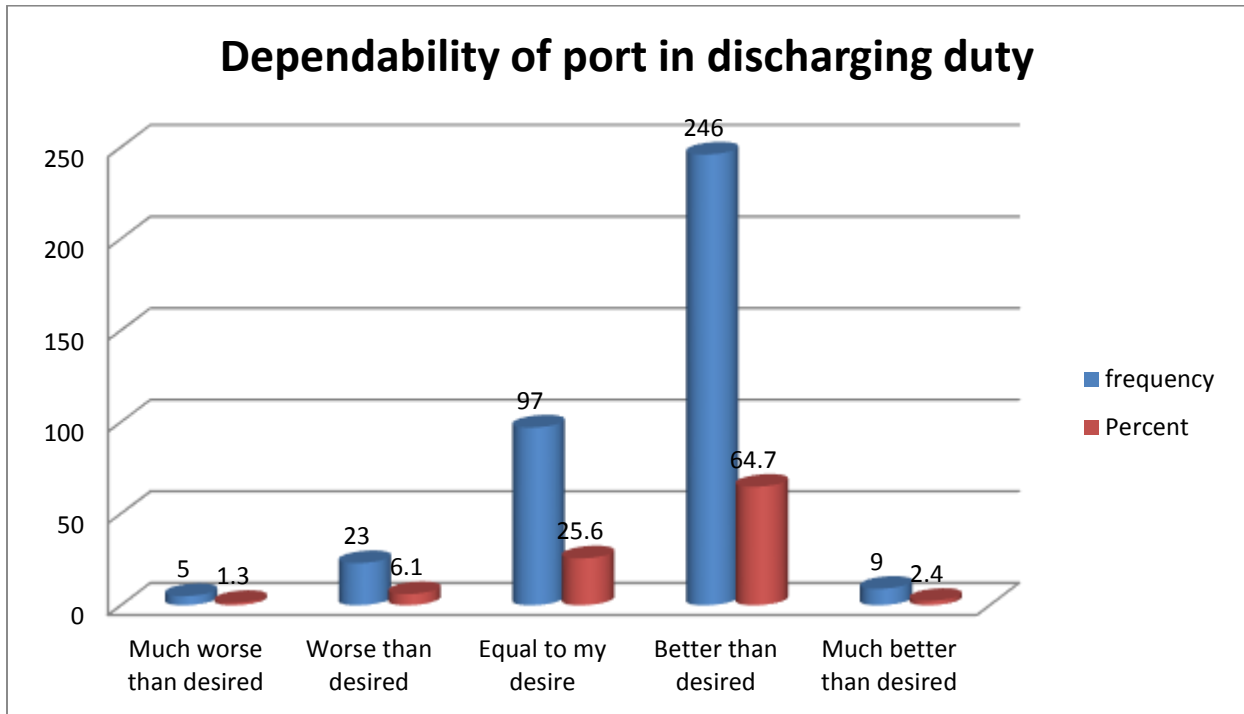


Source: Authors Field Survey, 2014.

4.4.12 Dependability of the Port in discharging its duty as well as solving customers’ complaints.

The researcher sought to find out from respondents their evaluation of Port staff dependability in its line of service delivery to customers. 64.7% and 2.4% of respondent feels the authority has exceeded their expectation in a better and much better perspective than anticipated respectively. However 25.6% assessed staff dependability in resolving customers serving customers as equal to their desire. Notwithstanding that, 1.3% and 6.1% strongly feels that, attitude of staff in resolving customer’s complaints or challenges are much worse and worse than desired.

Figure 4.13 Dependability of the Port in discharging its duty as well as solving customers' complaints

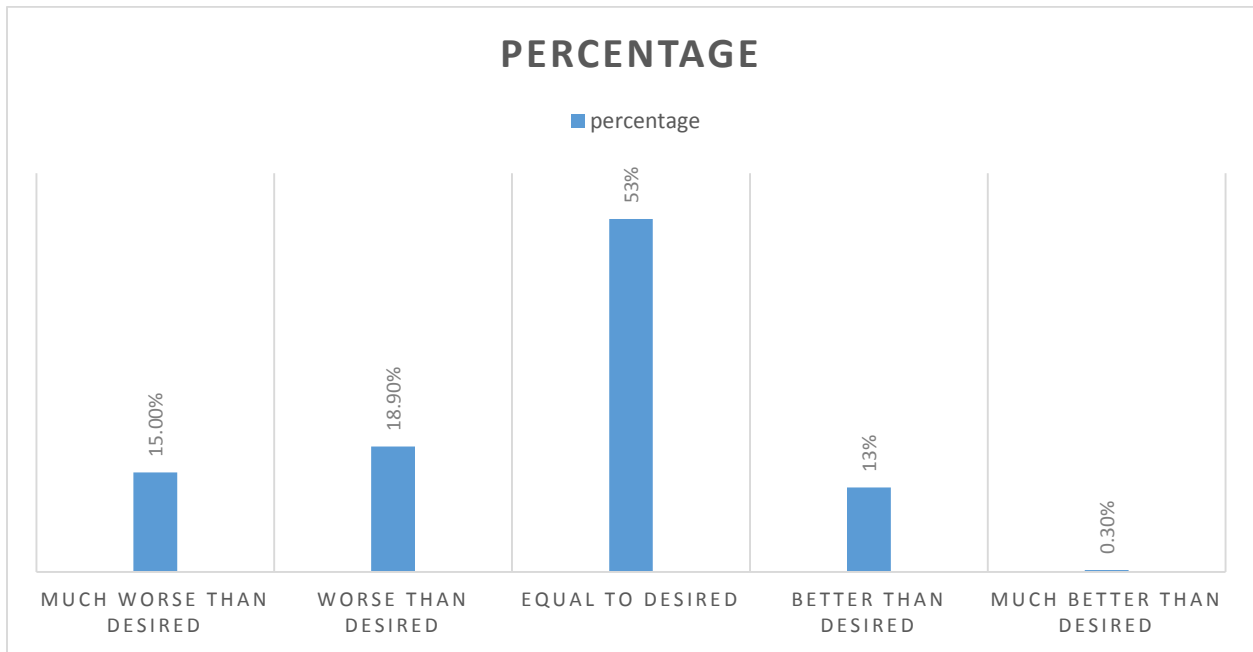


Source: Authors Field Survey, 2014.

4.4.13 Willingness of Port staff to attending to customers

The researcher sought to establish from respondents their assessment of staff willingness in attending to customers at the Port. It is evident that 53.1% assessed willingness of staff in attending to customers as equal to what they desired. Again 12.7% and 0.3% believe the level of willingness of staff attending to customers are better and much better than desired respectively. However 18.9% and 15% evaluated Port staff willingness to attending to customers as worse and much worse than desired respectively.

Figure 4.14 Willingness of Port staff to attending to customers

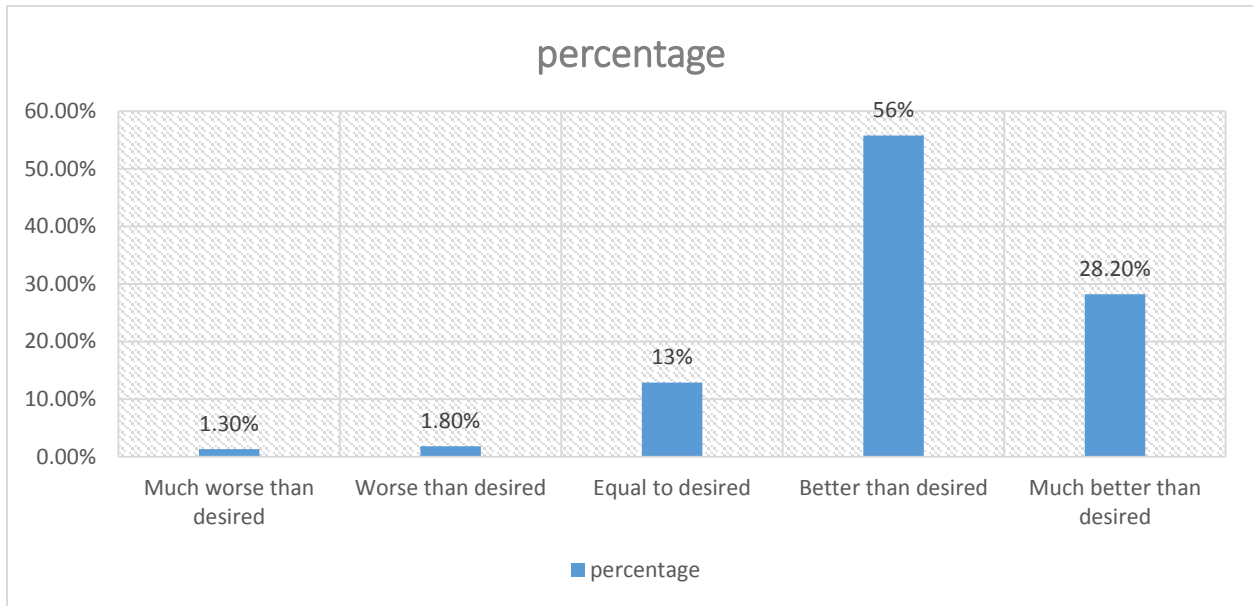


Source: Authors Field Survey, 2014

4.4.14 The approachable nature and ease of contacting Port staff

The chart survey reveals that majority of customers of GPHA, Tema are enthused and happy with the level of reception given them in terms of staff positioning themselves and maintaining the demeanor so as to make themselves easily approachable. A population of 55.8% and 28.2% believes that their expectation have been exceeded in a much better and better way than they anticipated respectively. However 12.9 %, 1.8% and 1.30% respondents feels that their expectation are equally met, worse and much worse than expected respectively.

Figure 4.15 The approachable nature and ease of contacting employees

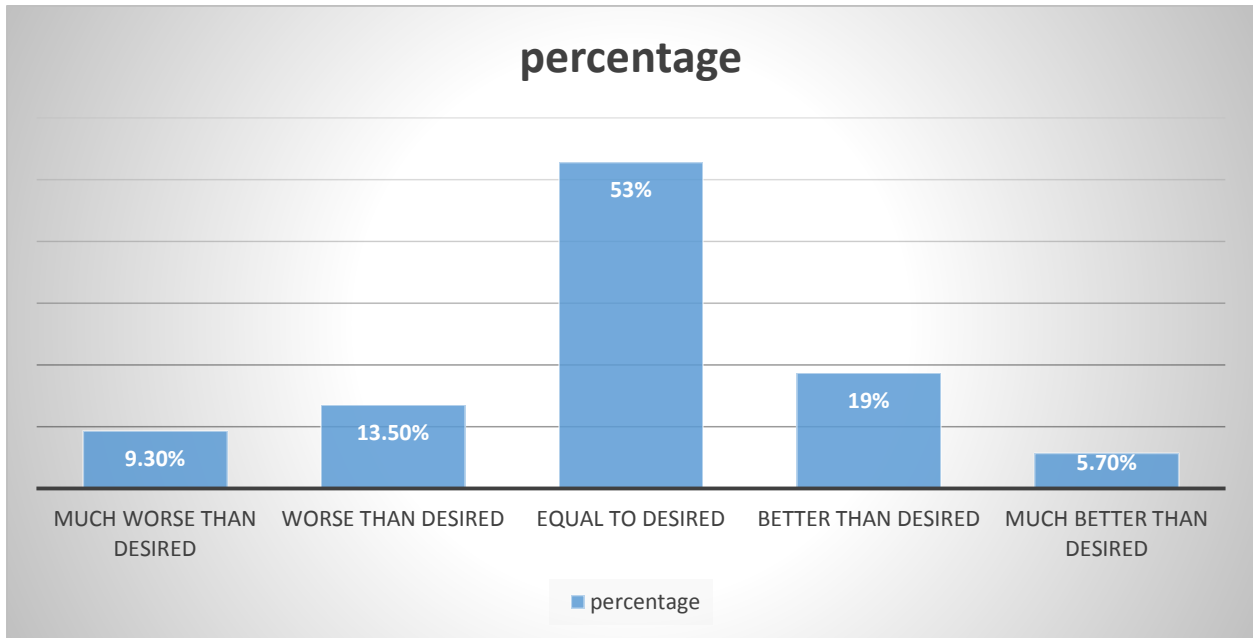


Source: Authors Field Survey, 2014.

4.4.15 Sincerity and patience in resolving customers' complaints/problems

With respect to the bar chart it is clear that majority of customers expectation have not been exceeded with respect to strategies adopted by staff in resolving their complaints. From the figure 4.15, a majority of 52.8% respondents believes their expectation have equally been met whiles 9.3% and 13.5% feels their expectation are much worse and worse than expected. 18.7% and 5.7% respondent believes their expectation have been exceeded in a better and much better way than they anticipated correspondingly.

Figure 4.16 Sincerity and patience in resolving customers’ complaints/problems

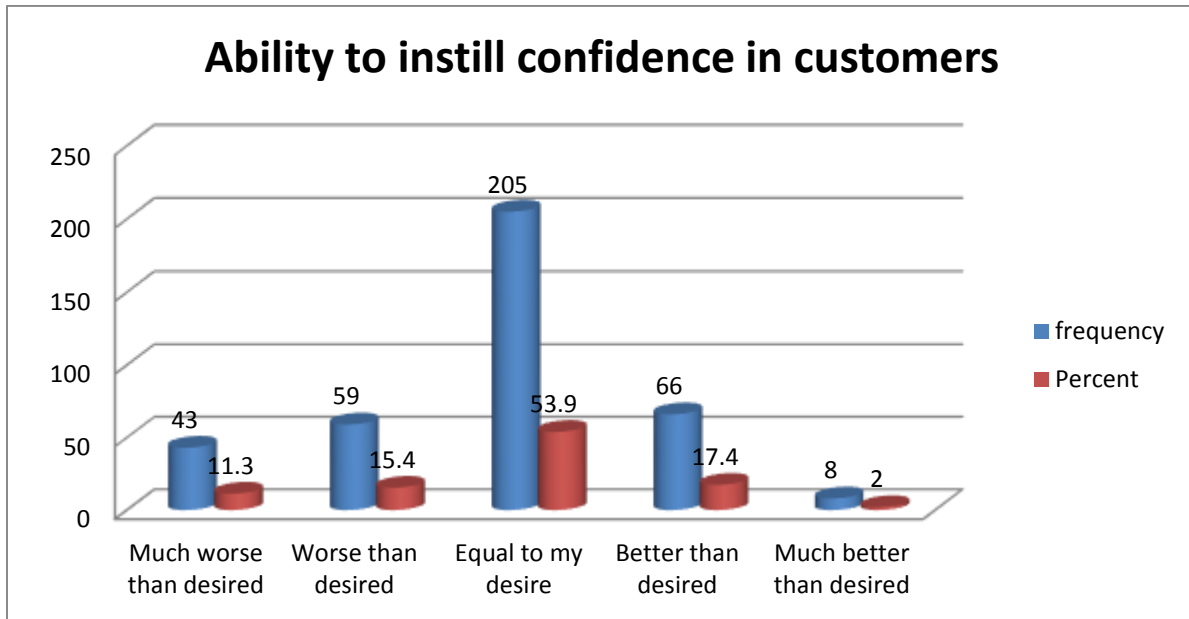


Source: Authors’ Field Survey, 2014

4.4.16 Ability of Port staff instilling confidence in customers

The researcher sought to find out from respondents their assessment of staff ability to instill confidence in customers. The survey revealed 53.9% believes that their expectations are equally met while 11.3% and 15.4% believe their expectations are much worse and worse than expected respectively. However 17.4% and 2.0% feel averted that their expectations are exceeded in terms of employee’s ability to instill confidence in them in a better and much better way than desired respectively.

Figure 4.17 The ability of Port staff instilling confidence in customers

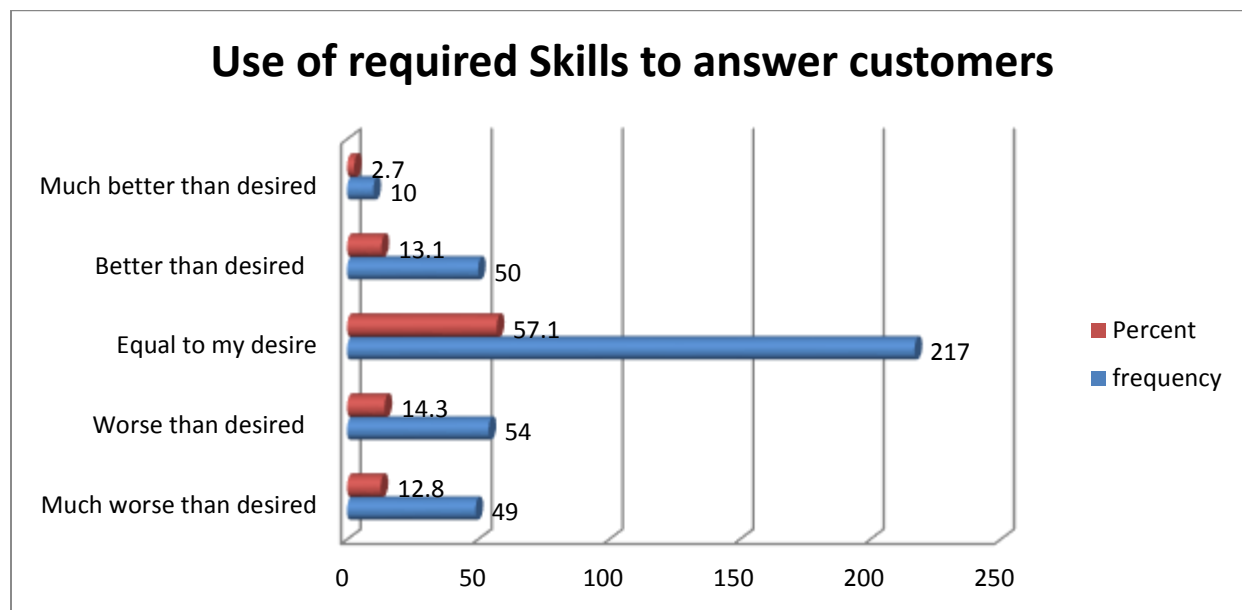


Source: Authors Field Survey, 2014.

4.4.17 Employees’ use of required skills and knowledge to answer customers’ questions.

The researcher sought to enquire from respondents their assessment of the level of skills and technical knowledge about the services, exhibited by staff in service delivery chain. Majority population of 57.1% believes their expectation are equally met whiles 12.8% and 14.3% feels their expectation are much worse and worse than projected respectively. Only 13.1% and 2.7% trusts that their expectations are exceeded in a better and much better perspective than desired respectively.

Figure 4.18 Employees’ use of required skills and knowledge to answer customers’ questions.

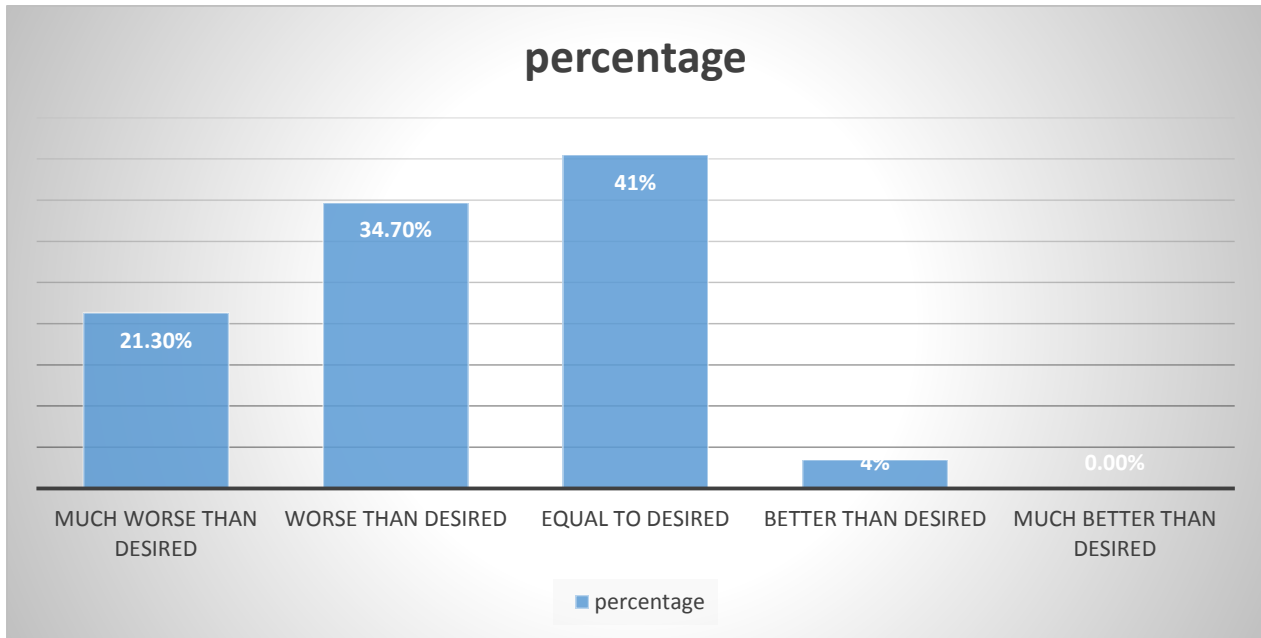


Source: Authors Field Survey, 2014.

4.4.18 Affordability of Services at the Port of Tema (Tariff Mechanism)

The researcher sought to find out from respondents their assessment of how affordable Port of Tema services are. 40.5% respondents assessed the level of affordability as equal to what they desired, while 3.5% feels their expectation are exceeded in a better manner than desired. However 21.3% and 34.7% trust their expectation are much worse and worse than anticipated respectively. And 3.5% considers strongly that their expectations are better met than desired, with none of the respondent assessing it as much better than desired.

Figure 4.19 Affordability of Services at the Port of Tema (Tariff Mechanism)

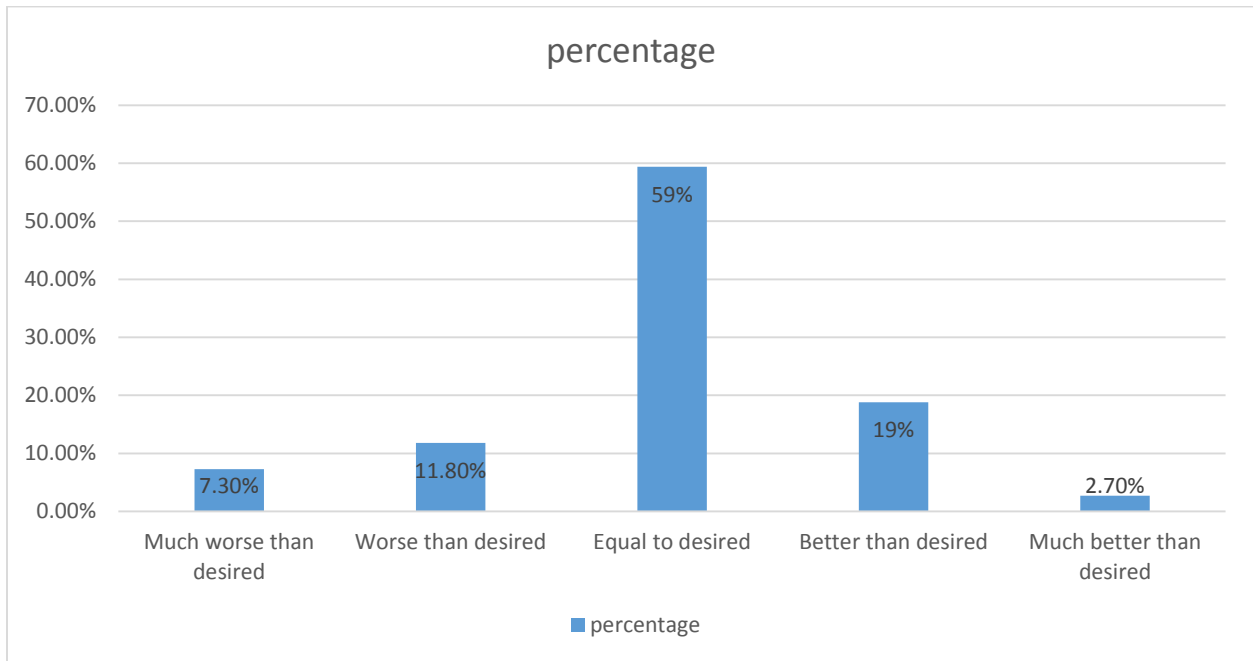


Source: Authors Field Survey, 2014.

4.4.19 Technological knowledge and skills of staff about automated and computerised systems

The researcher sought to find out from respondents their assessment of Port staff knowledge and skill of the automated and computerized systems employed by the Port to deliver quality service to customers. The survey revealed that 59.4% feels their expectation are equally been met while 18.8% and 2.7% respondents expectations are exceeded in a better and much better way than anticipated respectively. However 7.3% and 11.8% respondents are of the opinion that their expectations are much worse and worse than desired correspondingly.

Figure 4.20 Technological knowledge and skills of staff about automated and computerised systems.

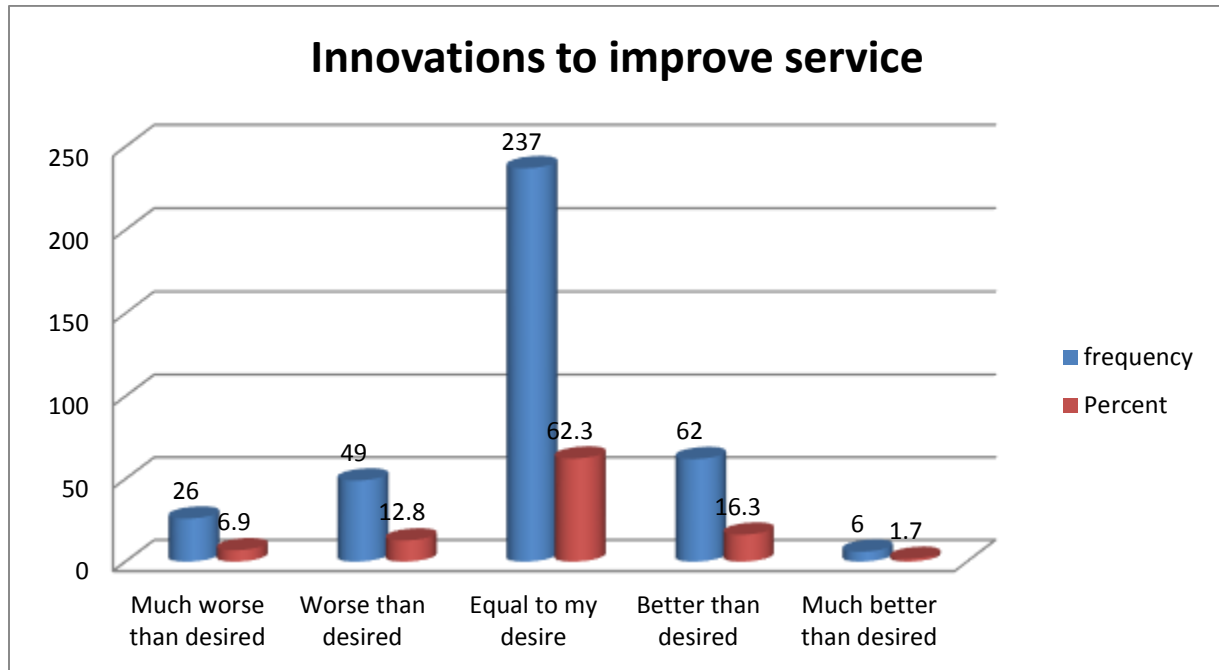


Source: Authors Field Survey, 2014

4.4.20 Innovativeness at the Port of Tema to improve service.

The researcher sought to establish from respondents their assessment of technological innovations by the Port Authority to enhance quality service delivery. In response, 62.3% of the respondents feels their level of expectation are equally met whiles 6.9% and 12.8% believes strongly that the level of technological improvement in service delivery is much worse and worse than anticipated. However 16.3% and 1.7% respondent disagree and assessed the level of technological advancement in service delivery as encouraging and that their expectation are better and much better met than anticipated.

Figure 4.21 Innovations at the Port of Tema to improve service.

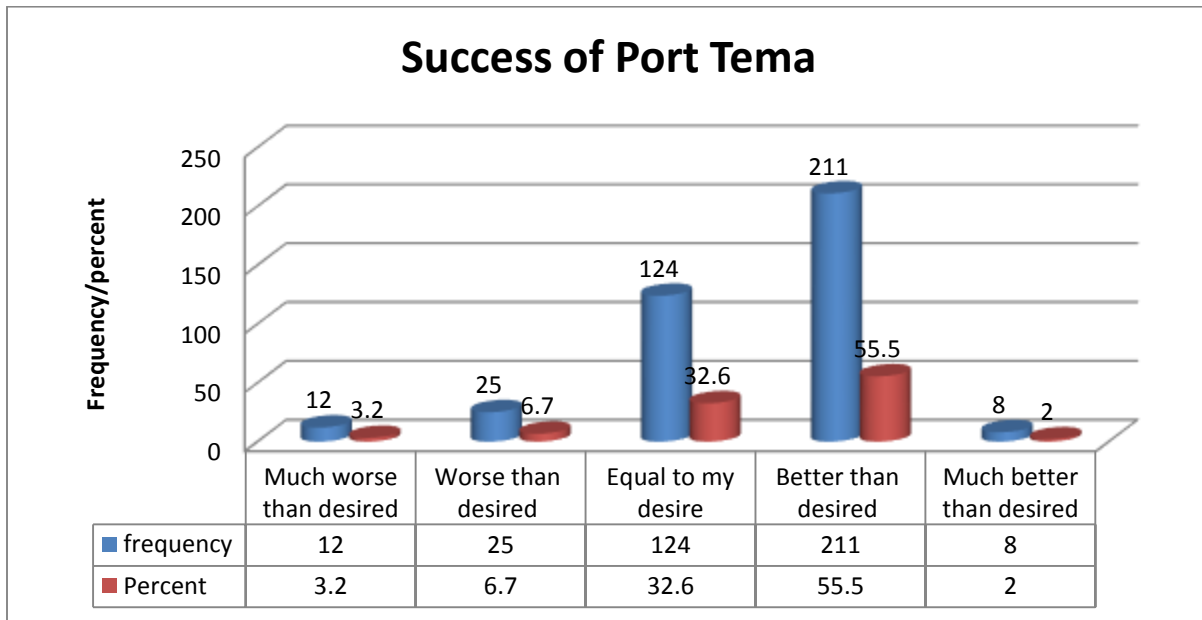


Source: Authors Field Survey, 2014.

4.4.21 How successful is Port of Tema?

The researcher sought to find out from respondents their assessment of how successful Port of Tema is within the maritime and logistic industry. In response 32.6% believes that the level of Port of Tema success is equal to what they expected. Again 55.5% and 2% assessed it as better and much better than what they desired respectively. However 6.7% and 3.2% believe the level of success at the Port is worse and much worse than what was desired respectively.

Figure 4.22 How successful is Port of Tema?

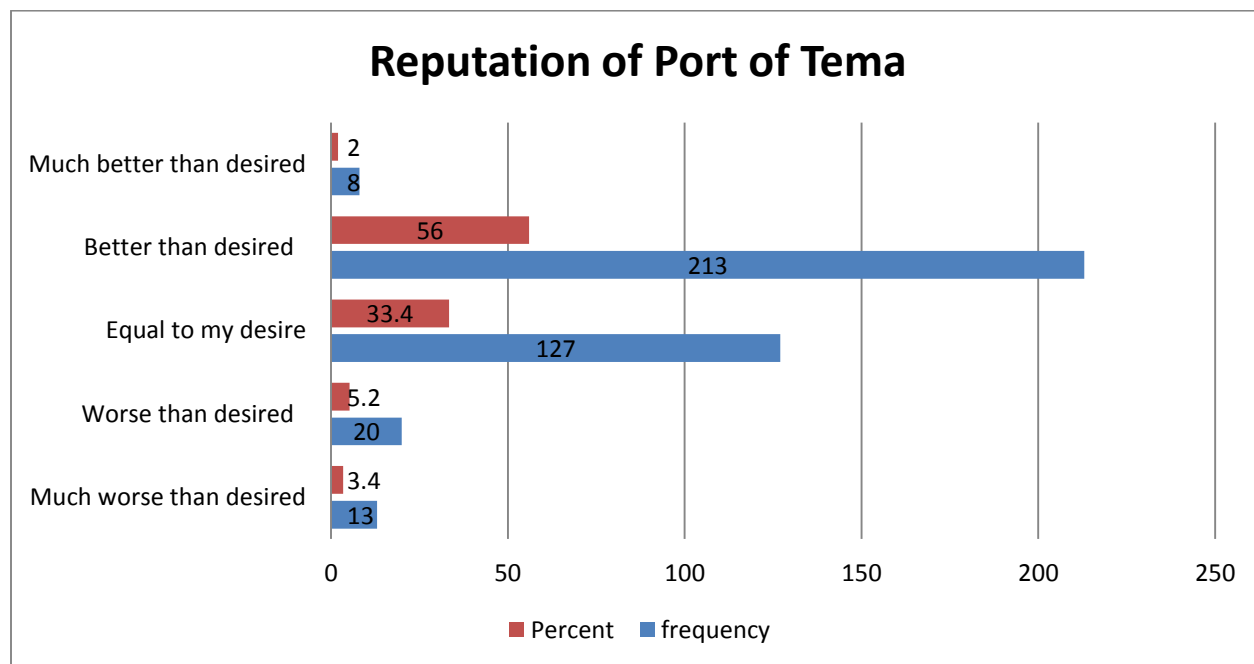


Source: Authors field survey, 2014

4.4.22 The reputation of Port of Tema

The researcher sought to know from respondents how reputable the Port of Tema is as a result of its service delivery to the public. A 33.4% respondents feels that the level of reputation and brand image of Port of Tema is equal to their expectation. 56% majority strongly feels that their expectations have been exceeded in a better way while 2.0% suggest that their expectations are met in a much better perspective. However 3.4% and 5.2% considers that their expectation are much worse and worse than they anticipated it to be respectively.

Figure 4.23 The reputation of Port of Tema

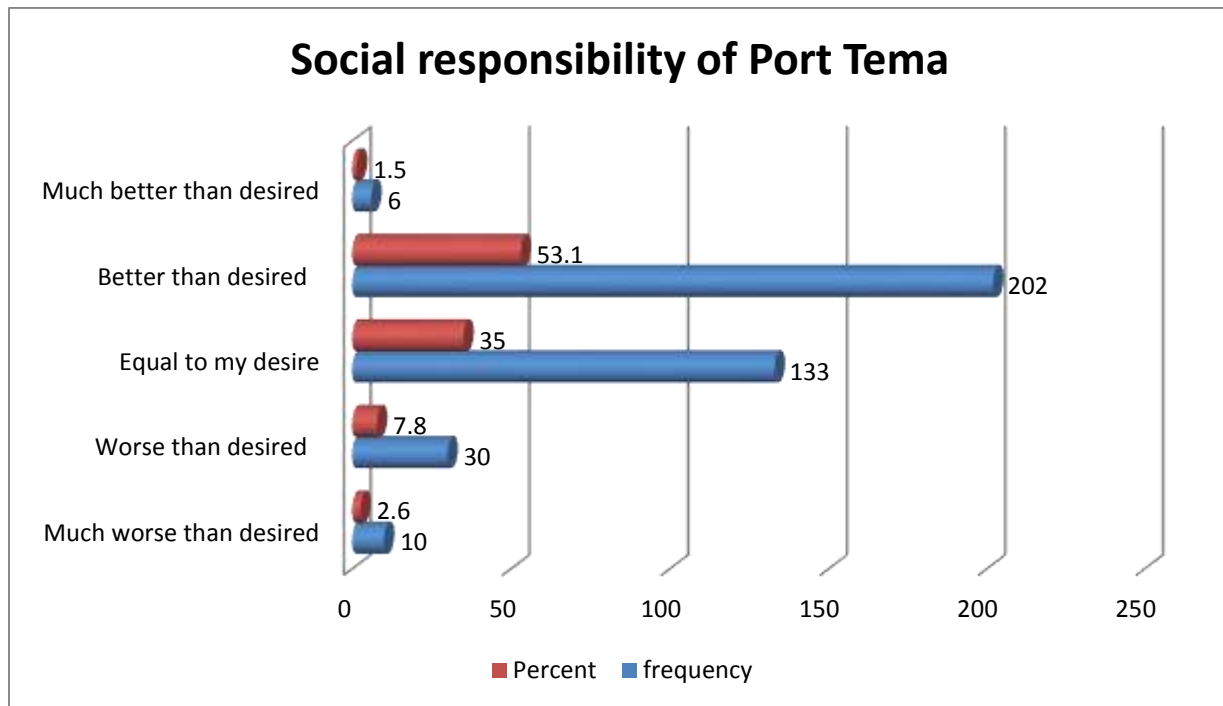


Source: Authors field survey, 2014

4.4.23 How socially responsible is Port of Tema

The researcher sought to establish from respondents how socially responsible Port of Tema is in terms of adherence to social, ethical and international standards. Majority of respondents representing 53.1% and 1.5% believes that their expectations with respect to corporate social responsibility of Port of Tema are better and much better met than anticipated respectively. 35.0% respondent believes that their expectations are equally met. However 2.6% and 7.8% suggest that their expectations are much worse and worse than expected respectively.

Figure 4.24 How socially responsible is Port of Tema



Source: Authors Field Survey, 2014

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This concluding chapter summarizes the purpose and objectives of the study, the major findings and conclusions and makes recommendation for further research.

5.2 Summary of Findings

The study area was the Port of Tema with the unit of analysis being Clearing Agents and Freight Forwarders (shore handling services) at Port of Tema. The Port of Tema renders two main services, thus service to Vessels and service to Goods. This was limited to service to goods which is also referred to as shore handling service. Thus, the study assessed the effect of operational efficiency on customer satisfaction at the Port with regards to the service to goods operations of the port. Specifically the study was focused to achieve the following objectives: To assess the level of operational efficiency at Port of Tema, to examine the determinant of customer satisfaction, and to examine the level of customer satisfaction at GPHA.

Review of existing data indicated that the Port of Tema is the bigger of the two Ports in Ghana. It was opened to traffic in 1962. The operation of the port is guided by a legal framework, PNDC Law 160 which established Ghana Ports and Harbours Authority (GHPA) with specific statutory functions which include; planning, management, maintenance, Operating and Control of ports in Ghana. In terms of the operations of the Port of Tema, operations are organized into nine departments namely; Material, Engineering, Marketing and Customer service, Administration and Port personnel, Stevedoring, Port Security, Finance, Port Audit, and Marine operations.

The study conceptualizes customer satisfaction as a process, subjectively, objective, cumulative, multi-dimensional, cognitive and affective. Gro'nroos' model of SERVQUAL (Gro'nroos, 2000) was adopted as the main theoretical framework for the study. Gro'nroos' model of SERVQUAL is comprehensive and its service quality dimensionality is justifiably suitable in the context of port operations. 'Price' dimension was added through focus group discussion.

From the data that was gathered through the survey and interview, there three specific objectives that was set for the study were achieved. The first objective was to assess the level of operational efficiency at Port of Tema. It was established from the findings of the study that Port operational efficiency is quite high due to continues implementation of efficient automated systems and the engagement of competent human resource at Port of Tema. The combination of automated systems and skilled labour resulted in improvement in speed of task, removal of human errors and manual activity and improved quality of service as well as reduced cost.

The second objective was to examine the determinant of customer satisfaction. The findings pointed out that Reliability, Responsiveness, Price (Tariffs) and Technical quality are functional quality dimensions or attributes of operational efficiency that were found to have some influence on customer satisfaction at Port of Tema. Generally, these findings provides evidence in support of previous studies (e.g. Kotler & Keller, 2006; Lovelock & Wirtz, 2007; Mehdi, 2007; Parasuraman et al, 1985) that service quality induced by operational efficiency have some level of influence on customer satisfaction and behavior intentions. Specifically, these findings are consistent with Gyasi & Azumah (2007), Heskett, et al (1985) and Sattar (2007) that also established reliability and responsiveness of service providers to be very important predictors of customer satisfaction in the context of service delivery. Image quality was found to be a factor that does not have much influence on customer satisfaction at Port of Tema, though there is

theoretical evidence from previous studies that suggest image quality effects customer satisfaction (James, 2004), this findings appears to controvert it.

Again, the third objectives was to examine the level of customer satisfaction at GPHA. The findings established that customer satisfaction with respect to provision of shore handling service (Receipt of goods, Storage of goods and Delivery of goods) at port of Tema is quite above average.

Finally, the study revealed that there exist a strong positive correlation between operational efficiency at the port of Tema and customer satisfaction. The research findings strongly suggest that continuous improvement in operational efficiency over the years has led to delivery of quality services, dependability of services, increase in operational speed – in terms of average lead time offered to customers and cost reduction which is as a result of elimination of wastage in the operational system that use to add up to port charges paid by customers. According to the findings, these factors has triggered customer satisfaction resulting in customer loyalty, retention and word of mouth recommendation to other prospective customers of the port.

5.3 Conclusion

The importance of operational efficiency within the maritime industry has continued to grow with continuous liberalization in international trade and removal of inter-border trade barriers most especially within the ECOWAS block. As a result, Ports authorities must maintain efficient operations in other to achieve sustainability through positive customer satisfaction, customer retention and growth of market share.

The study adopted mainly quantitative method in examining the effect of operational efficiency on customer satisfaction. From the summary of the findings of the study as provided above it can be concluded that Operational Efficiency at Port of Tema induced by the combination of automated systems and competent human resource helped in delivering quality service at a competitive price resulting in the current level of customer satisfaction.

5.4 Recommendations

Based on the findings of the study, the following recommendations are made;

1. It is recommended that the Management of the Ports should ensure that full automation of service delivery system is used in shore handling activities. This is to ensure that human errors are reduced or eliminated and the delivery of service is at faster rate. This recommendation is based on the finding that the few automation systems in place have been efficient in the delivery of service to the satisfaction of customers. As such a full implementation of automation systems in the Port will increase operational efficiency at the port.
2. Secondly, it is recommended that Staff should be giving regular training to keep them abreast with the dynamic determinants of customer satisfaction and their importance to quality of service delivery. This is based on the finding of this study and other studies that functional quality dimensions or attributes of operational efficiency such as Reliability, Responsiveness, Price (Tariffs) and Technical quality have influence on customer satisfaction. Thus, increased knowledge in these functional quality attributes will greatly go to improve customer satisfaction in the port.

3. From the perspective of the customers of the port, they are not satisfied with the business terms and conditions of the port. As such it is recommended that port authorities mitigate this problem by making business within the port conducive for customers. This can be done through; a. understanding clients' needs at the port, b. inculcating the interest of clients into decisions at the port, and c. making available information on business terms and conditions to clients ahead of time when changes occur.
4. It is further recommended that future research be undertaken using qualitative approach to provide in-depth understanding of relationship between operational efficiency and customer satisfaction. Thus, this study used the descriptive quantitative research method and as such may be lacking extent of the information.
5. In as much as the Port Authority is strongly determined to fully automate the Port operational process to render economically efficient and effective quality service to customers, it must be done to ensure that job cuts or unemployment due to the automation does not increase too much. During the focus group discussion it was evident from stakeholders that GPHA is the main employer and enabler in the maritime industry and the port community hence must continue to play its social responsibility and also employ from the community so that the youth in particular will in turn support them the stakeholders operating their businesses to operate peacefully. According to stakeholders crime rate within the port community can be reduced if stakeholders engage the youth in economic ventures within the logistic and supply chain.
6. It is again recommended that a railway be constructed to link Port of Tema to the Paga Boarder to reduce the high cost of transiting goods along the roads of Ghana to Mali,

Burkina Faso and Niger. This can result in operational efficiency thereby making Port of Tema, the preferred choice to importers from the sub-Saharan countries.

7. Finally in the midst of efforts to make Ghana the trade hub for the trans-West Africa, latest figures from the Ghana Ports and Harbours Authority has indicated that Ghana has lost about 50percent of cargo trade with Burkina Faso, Mali and Niger, which has dropped from one million tons annually since 2009 to 500 thousand tons in 2014. In as much as I strongly feels that this unfortunate decline could be as a result of the introduction and implementation of the axle load regulation, I recommend an academic research to scientifically ascertain the cause of the decline and also if there is any relationship between the decline and the axle load policy.

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APPENDIX A

FOCUS GROUP DISCUSSION GUIDE

Introduction

Moderator introduces himself and state the purpose of the discussion.

Number of participant – 15

Activity	Time (90 minutes)
1. Ask about their knowledge of shore handling services at the Port of Tema.	30
2. What is the level of Operational efficiency at Port of Tema?	30
3. What is the effect of the port operational efficiency on customer satisfaction?	30

APPENDIX B

QUESTIONNAIRE FOR CUSTOMERS OF PORT OF TEMA

Dear customer, this questionnaire about how you feel about the service quality and how satisfied you are with shore handling services at the port of Tema.

Please tick () the appropriate box for your answers.

RESPONDENT'S IDENTITY

1. Please what is your gender? Male Female

2. Age group
 30 – 39yrs 40 – 49yrs 50yrs and above.
3. What is your monthly income?
 Below ₵100 ₵100 - ₵500 ₵501 - ₵1000 ₵1001 and above
4. What is your employment status?
 Permanent Contract Attachment)
5. What kind of service do you engage in (Nature of clearance)
 Free zone Transit Import Warehousing
6. Relationship with port of Tema.
 Below 4yrs 5 – 10yrs 41 and above
7. What is your level of education?
 SHS Post SHS Tertiary

OVERALL SATISFACTION WITH SERVICE DELIVERY

8. How well did the service you received from Port of Tema compared with the ideal desired set of service.
 a) Much worse than desired **b)** Worse than desired **c)** Better than desired
 d) Equal to my desire **e)** Much better than desired

9. How likely are you to recommend your Port to Importers and Exporters?

- a)**Much worse than desired **b)**Worse than desired **c)**Better than desired
d)Equal to my desire **e)**Much better than desired

10. To what extent has the standard of service met your expectation.

- a)**Much worse than desired **b)**Worse than desired **c)**Better than desired
d)Equal to my desire **e)**Much better than desired

11. Overall how satisfied are you with the service quality at the port of Tema?

- a)**Much worse than desired **b)**Worse than desired **c)**Better than desired
d)Equal to my desire **e)**Much better than desired

CUSTOMER SATISFACTION WITH SERVICE QUALITY DIMENSIONS

12. What is Port of Tema's ability to give customers relevant and current information?

- a)** Much worse than desired **b)**Worse than desired **c)**Better than desired
d)Equal to my desire **e)**Much better than desired

13. What is the general appearance of staff and working environment?

- a)** Much worse than desired **b)**Worse than desired **c)**Better than desired
d)Equal to my desire **e)**Much better than desired

14. Are the business terms and conditions at the Port favorable?

- a)** Much worse than desired **b)** Worse than desired **c)** Better than desired
d)Equal to my desire **e)**Much better than desired

15. Does the Port have customers interest at heart?

- a)** Much worse than desired **b)**Worse than desired **c)**Better than desired
d)Equal to my desire **e)**Much better than desired

16. What level of efforts does the Port make to understand customers' needs?

- a)**Much worse than desired **b)**Worse than desired **c)**Better than desired
d)Equal to my desire **e)**Much better than desired

17. Does the Port apologize for inconvenience to customers?

- a)** Much worse than desired **b)**Worse than desired **c)** Better than desired
d) Equal to my desire **e)** Much better than desired

18. How timely and truthful is the authority in discharging their duty?

- a)** Much worse than desired **b)**Worse than desired **c)**Better than desired
b) d)Equal to my desire **e)**Much better than desired

19. How dependable is the authority in discharging their duty as well as solving customer's complaints?

- a)**Much worse than desired **b)**Worse than desired **c)**Better than desired
d)Equal to my desire **e)**Much better than desired

20. How willing are employees in attending to customers?

- a)**Much worse than desired **b)**Worse than desired **c)**Better than desired
d)Equal to my desire **e)**Much better than desired

21. How are employees approachable and easy to contact?

- a)** Much worse than desired **b)** Worse than desired **c)** Better than desired
d) Equal to my desire **e)** Much better than desired

22. How sincere and patient are employees in solving customer's challenges.

- a)**Much worse than desired **b)**Worse than desired **c)**Better than desired
d)Equal to my desire **e)**Much better than desired

23. How capable are staff to instill confidence in customers.

- a)** Much worse than desired **b)** worse than desired **c)** Better than desired
d) Equal to my desire **e)** Much better than desired

24. How competent are staff in using required skill and knowledge to answering customer's enquiries?

- a)** Much worse than desired **b)** Worse than desired **c)** Better than desired
d) Equal to my desire **e)** Much better than desired

25. How affordable are the prices (tariffs) at the port of Tema?

- a)** Much worse than desired **b)** Worse than desired **c)** Better than desired
d) Equal to my desire **e)** Much better than desired

26. Does employees exhibit technological knowledge and skill in resolving customer's problems?

- a)** Much worse than desired **b)** Worse than desired **c)** Better than desired
d) Equal to my desire **e)** Much better than desired

27. How innovative is Port of Tema with respect to automation to improve service?

- a)** Much worse than desired **b)** Worse than desired **c)** Better than desired
d) Equal to my desire **e)** Much better than desired

28. How successful is the port?

- a)** Much worse than desired **b)** Worse than desired **c)** Better than desired
d) Equal to my desire **e)** Much better than desired

29. What is the reputation of the port?

- a)** Much worse than desired **b)** Worse than desired **c)** Better than desired
d) Equal to my desire **e)** Much better than desired

30. How socially responsible is the Port?

- a)** Much worse than desired **b)** Worse than desired **c)** Better than desired
d) Equal to my desire **e)** Much better than desired