Dry Ports Service Quality in Ethiopia: The Case of Modjo and Kaliti Dry Ports and Terminals A- Comparative Study

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Chairman of Committee	Signature	Date Graduated

Declaration

I, Yodit Regasa Gudisa, announce that research paper entitled “Service Quality of Modjo and Kaliti dry ports and terminals- A comparative study:” is my own and I would like to say that this research paper is original work. To this end, I acknowledged all sources of information that I used to produce the study appropriately.

Yodit Regasa	_____	_____
Student Researcher	Signature	Date

Letter of Certification

This to certify that Yodit Regasa has carried out her thesis work on the topic entitled " Service Quality of Modjo and Kaliti dry ports and terminals- A comparative study " under my guidance and supervision. Accordingly, I hereby assure that her work is appropriate and standard enough to be submitted for the award of Master of Arts degree in Logistics and Supply Chain Management.

Matiwos Ensermu (PhD) _____ _____

Research Advisor Signature Date

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ESLSE	Ethiopian Shipping and Logistic Service Enterprise
UNECA	United Nations Economic Commission for Africa
CEO	Chief Executive Officers
SERVQUAL	Service Quality
UNCTAD	United Nations Conference on Trade and Development
SERVPERF	Service Performance

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ABSTRACT

This is a research on comparative study of service quality of Modjo and Kaliti dry ports and terminals. Given the increased importance of dry port and terminal services and the associated inefficiencies and drawbacks in service quality, this study is expected to contribute to the improvement of the dry ports service. This research is conducted with the general objective of comparative analysis of Modjo and Kaliti dry ports and terminals in terms of service quality in the perception of customers through SERVQUAL model.To address the stated research questions, the researcher employed non-experimental, survey type, descriptive and comparative research design. Data was collected from both primary and secondary source; primary data were collected through questionnaires and for secondary data document analysis were made. The study employed probability sampling techniques to select the participant of the study and accordingly, an aggregate of 289 respondents were selected and participated in this study and out of these, data were obtained from 270 respondents. The researcher used SERVQUAL model as research instrument. The data were analyzed using descriptive and inferential approach. Descriptive analysis uses measurement of central tendency and measure of dispersion. Inferential analysis uses correlation so as to assess the relationship between the service quality dimensions and comparing the two dry ports service quality in terms of these dimensions. Data analysis revealed that there is low level of expectation among customers and a corresponding low level of perceived service quality in both dry ports and terminals. Also these SERVQUAL gap score is naught. Moreover, the study has found that Kaliti dry port and terminal performed worse than Modjo. Following these results, recommendations are given to improve the service quality of the two dry ports.

CHAPTER ONE

INTRODUCTION

1.1. Background of the study

Ports are well known as playing an important role in multimodal transport systems and international supply chains, apart from their traditional role as clusters of economic activities. Ports engage in various activities: loading/discharging cargo onto/from vessels; providing value-added services such as labeling, packaging, cross-docking, and others; and acting as warehouse and distribution centers (World Bank, 2007). Ports add more value to shipments that are in the port area by further integrating themselves into value chains. Many ports are increasingly being perceived as integrated and inseparable nodes in their customers' supply chains. Ports play a critical role in the effective and efficient management of this industry.

According to Asubonteng et al., (1996), due to intense competition and the hostility of environmental factors, service quality has become a cornerstone marketing strategy for companies. This highlights how important improving service quality is to organizations for their survival and growth since it could help them tackle these challenges they face in the competitive markets. This means that service-based companies are compelled to provide excellent services to their customers in order to have a sustainable competitive advantage. There is however, a need for these organizations to understand what service quality is in order to attain their objectives.

Handling large volumes at a minimum unit cost and shortest time is paramount in positively impacting on the supply chain network. (Notteboom & Rodriguez , 2009) observed that the evolution of dry ports was looked at as the cycle in the continuous development of containerization and intermodal transport. Establishment and explosion in global supply chains in the 1990s, coupled with export oriented growth strategies adopted by developing countries resulted into a paradigm shift in freight distribution systems. Multi modal transport and dry ports turned out to be the focal point in the new supply chain and logistics strategy formulation, first with the implementation in USA and developed Europe, followed by East Asian countries and

then more recently Africa. This was mainly due to insatiable focus on trade which resulted into diminishing returns, congestion, and a significant fall in efficiency.

Ethiopia, as a landlocked country, has established its trade route along the Ethio-Djibouti corridor. The Ethio-Djibouti corridor is a main outlet to the sea and 925 Kilometers from Addis Ababa. It is the main route for Ethiopia's import and export trade which is dominated by freight transport. Due to economic deregulation that has been enacted in many sectors including freight transit and a program of privatization, state assets in combination with a rapidly growing economy powered by the Ethio-Djibouti corridor resulted in the growth of the transport industry. According to ESLSE, in response to the steadily growing volume of cross boundary trade, as a result, Ethiopia has moved to establish various inland dry ports.

1.2. Background of the organization

In the move to cater for an ever increasing volume of import-export volume in a coordinated way, the government of Ethiopia has taken a strategic measure by merging the former three public enterprises that have until recently been operating separately in a rather similar and interdependent maritime sub-sector; namely, Ethiopian Shipping Lines S.C, Maritime and Transit Services Enterprise and Dry Port Enterprise to form The Ethiopian Shipping and Logistics Services Enterprise. .ESLSE has a multitude of vessels, heavy duty trucks, sea and dry port facilities, and chicaneries that enable it render efficient sea and land transport services as well as sea and dry port services. ESLSE has its headquarters located in the heart of Addis Ababa, Ethiopia, with main branches at Djibouti, Modjo, and Kality (the former Comet) and other branches in Mekelle, DireDawa, Kombolcha, Semera and Gelan towns and customer's bonded warehouse for both passenger cars as well as containers were instituted as part of the logistics service chain .ESLSE also offered carriage possibilities to inland dry ports.

According to the ESLSE (2014), currently ESLSE is administering seven dry ports including Modjo dry port and it was found out that main Services given at the Dry port are: handling the import-export good, loading and unloading import-export goods, containerizing goods and unpacking containerized goods, serving as a temporary storage place, giving weigh bridge service, container wash and maintenance service, custom clearance service, banking and insurance service

Modjo dry port was the first dry port in Ethiopia started operations in the first half of 2009. It is located at Modjo, nearly 75 km East of Addis Ababa. The other one is the current Kaliti branch of ESLSE Was previously organized as Comet Transport Share Company. It is located in Addis Ababa at Kaliti sub city Kebele 11 and advantageously situated next to Addis Djibouti road close to the southern ring road. Originally, it provided the following types of Services: freight transport, Maintenance, Warehousing & Cargo Handling, Dry Port facility, and others. Among these services the proposed study is concerned with the company's Dry Port Service. The - company has developed a dry port service to facilitate Import & Export in the country by providing an integrated logistics service.

1.3. Statement of the Problem

Many landlocked developing countries continuously face the challenge of physical isolation, supply chain related barriers from the sea and the high costs of trading with the rest of the world (United Nations Economic Commission for Africa, 2011). In order to counter these challenges associated with land lockedness, the dry port concept evolved. Dry ports also evolved out of the challenges that faced existing sea ports i.e., due to the increase in size and capacity of container vessels, sea ports increasingly faced the challenge of inability to handle import and export cargo in a regular manner. This resulted into congestion at different sea ports due to long waiting time of trucks and haulage vehicles (Woxenius , Roso, & Lumsden, 2004). (Notteboom & Rodriguez J. P., 2009), observed that the evolution of dry ports was looked at as the cycle in the continuous development of containerization and intermodal transport.

The major driving force for the establishment of multi-modal transportation system in Ethiopia are the problems of freight transit coast, freight delays and safety of freights leaving portlessness of the country aside. Ethiopia, as a landlocked country, has established its trade route along the Ethio-Djibouti corridor. The Ethio-Djibouti corridor is a main outlet to the sea. It is the main route for Ethiopia's import and export trade which is dominated by freight transport. Ethiopia has moved to establish various inland dry ports. This move will help the country save foreign currency by mitigating demurrage charge that are paid at Djibouti port. ESLSE also offers on carriage possibilities to inland dry ports such as Modjo/Adama, Semera, Kombolcha, Dire Dawa, Mekele, gelan and Comet (Addis Ababa) and customer's bonded warehouse for both passenger cars as well as containers. Modjo Port and Terminal Director Taye Chala said that, 80 per cent of

the national import accommodated at this port. The holding capacity of the Modjo Port has also improved from 950 to 14,900 containers. The port is under massive expansion work on additional 88 hectares of land to meet international standard. Currently, the port covers 62 hectares of land.

The Director also noted that the port was established to reduce transit cost and time significantly enabling the nation to save some 700 million USD annually. The average staying time of containers at the Djibouti port has also been brought down from 45 to 10 days. However, the port's operation is not yet fully supported by modern information technology. According to the current dry ports branch coordinators manager, there is a congestion in the dry port and the major factor for these congestion the importers are not timely collect their container. According to CEO of ESLSE One of the solutions to solve the congestion in the dry port is addressing clients including informing them about the arrival of their containers and communicating with them. On the other hand we are also undertaking the expansion and construction of other dry ports and new terminals.

"Customers complained of poor services and inefficiency," They stated that officials sometimes favored certain customers for undue benefits, while others have to endure very sluggish services to unload containers and get clearance, according to Desalegn Tefera, deputy CEO of port & operation services at the ESLSE and a Modjo Dry port employee that Fortune talked to.

From the qualitative data that the Customers respond, there is improvement of the service that they receive from the Ethiopian shipping and logistic service enterprise and the dry ports. with respect to this improvement, the customer have a lot of compliant in service quality of the two dry ports modjo and kaliti such as absence of networks, sluggish service speed, not timely inform the customers when their containers arrived at ports, lack of modern facilities specially in kaliti dry port (this includes roads, checking place, and warehouse are unclean and not suitable for work), lack of educated human power specially in information technology, and unfair service. All these are some of the major problems that customers have faced in the dry port. In order to implement effective and efficient dry port and terminal service it is necessary to assess the existing challenges and improvements.

1.4. Research Questions

The research explored the following questions, to assess and farther make a comparison of the service quality of Modjo and Kaliti ports and terminals in terms of SERVQUAL model.

A description of the two dry port and terminals separately and a comparison of these in response to the following questions based on SERVQUAL five dimension.

Q#1. How much quality service does Modjo and Kaliti ports and terminals deliver to customers in terms of tangibility?

Q#2. To what extent does the service quality of Modjo and Kaliti ports and terminals reliable to customers?

Q#3. How much responsive service do Modjo and Kaliti ports and terminals deliver to customers?

Q#4. At what level of empathy do Modjo and Kaliti ports and terminals deliver services to customers?

Q#5. To what extent Modjo and Kaliti ports and terminals deliver a quality service to customers in terms of assurance?

Through these questions, the research were tried to address the objectives given in the following section.

1.5. Research objectives

General objectives:

The general objective of this research were a comparative analysis service quality of Modjo and Kaliti dry ports and terminals.

Specific objectives:

The specific objective of this study is,

- ✓ To determine the service quality of Modjo and Kaliti dry ports and terminals in terms of tangibility.

- ✓ To show the service quality of Modjo and Kaliti dry ports and terminals in terms of reliability.
- ✓ To indicate the service quality of Modjo and Kaliti dry ports and terminals in cognizant to responsiveness.
- ✓ To assess the service quality of Modjo and Kaliti dry ports and terminals in terms of assurance.
- ✓ To indicate the service quality of Modjo and Kaliti dry ports and terminals in relation with empathy.
- ✓ To determine the relationship between the five service quality dimensions?
- ✓ Compare the service quality of Modjo and Kaliti dry ports and terminals in terms of the above dimensions.

1.6. Significance of the study

The study is highly useful tools to indicate significant factors leading to increased service performance in dry ports and terminals services delivery. It also enables the enterprises concerned to be aware of the dry ports and terminals service quality as perceived by its customers. Also it provides new insights to the researcher in this area.

1.7. Scope of the study

This study is delimited to assess the comparative analysis service quality of Modjo and Kaliti ports and terminals and its customer`s perception on the current service quality. The study area, focuses on the two dry ports and terminals service quality because these two ports are relatively older than the other dry ports facilities and have more experience than the others. Another point of interest for the focus on these two facilities relates to customer's preference to obtain services from a ports and terminals that is closest to the capital as most of the country's importers and exporters are concentrated in Addis Ababa. The marked size difference between Kaliti and Modjo dry ports, the latter being bigger in size, is the other motivation why these two were selected for this study.

The study used descriptive and comparative research design to describe and made a comparison of service quality of the two ports and this study is delimited to the two dry ports because the

sample is drawn from those who are served in this ports. From another model of service quality the researcher select SERVQUAL model to measure the service quality of the two dry ports.

1.8. Limitation of the Study

There are some limitations associated with this study that need to be discussed. The study was having the population group of modjo and kaliti ports and terminals customers (importers/exporters, transistors, drivers,) due to budget and time constraint data was not collected from the entire population.

The study assessed the service quality of the Modjo and kaliti dry ports and terminals from the customer's perspective. This can be deemed as a limitation as it could be more complete if the perspective of the service providers would also be incorporated. Beside the SERVQUAL model focuses on the process of service delivery, this study not address the outcomes of the service encounter.

CHAPTER TWO

LITERATURE REVIEW

A review of existing literature revealed that articles on dry port service delivery are scant. However, service quality concepts are well developed and are amply available in the body of literature reviewed. In this review, the researcher were tried to give a summary of theoretical, review of works related to dry ports and service quality in particular that the researcher has explored.

2.1. Service Concept

A study carried out by Johns, (1998) points out that the word 'service' has many meanings which lead to some confusion in the way the concept is defined in management literature, service could mean an industry, a performance, an output or offering or a process. He further argues that services are mostly described as 'intangible' and their output viewed as an activity rather than a tangible object which is not clear because some service outputs have some substantial tangible components like physical facilities, equipment and personnel.

This is because, according to Gummesson, (1994), a service design which details a service, service system and the service delivery process must consider customers, staff, technology, the physical environment, and the consumption goods. In summary, it is eminent for service firms to consider the physical aspects of quality in order to offer high service quality.

In a study carried out by Gummesson, (1994), he identified three management paradigms; manufacturing paradigm which focuses on goods and mainly concerned with productivity technical standards, the bureaucratic-legal paradigm used mainly in the public sector is more concerned with regulations and rituals before end results. Thirdly, the service paradigm mainly focuses on service management particularly in the marketing area and stresses the importance of customer interaction with service provider in delivering service and creating value.

In his study, he lays emphasis on the service paradigm pointing out that, there has been a shift from the goods-focused to service-focused management due to automation of manufacturing and the introduction of electronics and technology. He sees service marketing moving from a normal marketing mix (focused on solely on price, product, promo and place) to relationship marketing where people, process and physical evidence adding to the 4 'P' (product, price, promotion and place) play a role in increasing an interactive relationship between service provider and consumer and long term profitability and customer satisfaction. The researcher support this argument because, the customer is considered very important and it is very primordial for companies to improve their relationship with customers by knowing their needs and creating more value by trying innovative processes that will lead to customer satisfaction and retention.

This is why it is necessary for firms to measure service quality because it enables them know more about consumers' expectations and perceptions. Edvardsson, (1998) thinks that the concept of service should be approached from the customer's perspective because it is the customer's total perception of the outcome which is the 'service' and customer outcome is created in a process meaning service is generated through that process. He points out the participation of the customer in the service process since he/she is a co-producer of service and the customer's outcome evaluated in terms of value added and quality meaning the customer will prefer service offered to be of high value and quality. Service process is that which consists of either, delivery of service, interpersonal interaction, performance or customer's experience of service.

According to a study carried out by Johns, (1998), service is viewed differently by both the provider and the consumer; for the provider, service is seen as a process which contains elements of core delivery, service operation, personal attentiveness and interpersonal performance which are managed differently in various industries. While customer views it as a phenomenon meaning he/she sees it as part of an experience of life which consists of elements of core need, choice, and emotional content which are present in different service outputs and encounters and affect each individual's experience differently. However, factors that are common for both parties include; value (benefit at the expense of cost), service quality and interaction. From his study, he used supermarkets as an example of service industry and found out that supermarkets have high tangibility or visibility of output, the provider carries out a performance, level of

interpersonal attentiveness is low, service staff are not core providers, customer undertakes a transaction, level of choice is high and service environment is a key component.

The current study investigates at intangible services in dry port and terminals from the customer's perspective. From the customer's perspective that service can be considered as an experience whereby the customer is expected to make choice to satisfy needs in an emotional way through the interaction with service provider.

Service experience is defined by John, (1998) as the balance between choice and perceived control which depends upon the relative competences of customer and service provider (that is to make the choice or to exert control). Aspects of service experience include core benefit, performance, approaching the service, departing from it, interacting with other customers and the environment in which the service transaction takes place (services cape),

Service interaction involves interpersonal attentiveness from the service personnel who are to provide core services and this contributes to customer satisfaction with the service offered, John, (1998).

2.2. Quality Concept

According to Hardie & Walsh, (1993); Sower and Fair, (2005); Wicks & Roethlein, (2009), quality has many different definitions and there is no universally acceptable definition of quality. They claim it is because of the elusive nature of the concept from different perspectives and orientations and the measures applied in a particular context by the person defining it. In current study, quality defined in the context of dry port and terminals and focus on various dimensions of service. This therefore means the definition of quality varies between manufacturing and services industries and between academicians and practitioners. These variations are caused by the intangible nature of its components since it makes it very difficult to evaluate quality which cannot be assessed physical implying other ways must be outlined in order to measure this quality.

Quality has been considered as being an attribute of an entity (as in property and character), a peculiar and essential character of a product or a person (as in nature and capacity), a degree of excellence (as in grade) and as a social status (as in rank and aristocracy) and in order to control and improve its dimensions it must first be defined and measured (Ghylin et al., 2008).

Some definitions of quality pointed out by Hardie & Walsh (1994) include;"Quality is product performance which results in customer satisfaction freedom from product deficiencies, which avoids customer dissatisfaction" – (Juran, 1985) "Quality is the extent to which the customers or users believe the product or service surpasses their needs and expectations" – (Gitlow et al. 1989) "Quality: the totality of features and characteristics of a product that bear on its ability to satisfy stated or implied needs"– International Standards Organization (ISO). "Quality is the total composite product and service characteristics of marketing, engineering, manufacture and maintenance through which the product in use will meet the expectations of the customer" – (Feigenbaum, 1986) "Quality is anything which can be improved" – (Imai, 1986) "Quality is the loss a product causes to society after being shipped" – (Taguchi, 1986) "We must define quality as "conformance to requirement" – (Crosby, 1979). "Quality is the degree or grade of excellence etc. possessed by a thing" – (Oxford English Dictionary). "Quality is defined as the summation of the affective evaluations by each customer of each attitude object that creates customer satisfaction"- (Wicks & Roethlein, 2009). "Quality is the totality of features and characteristics in a product or service that bear upon its ability to satisfy needs" (Haider, 2001). The above definitions of quality shed light in understand quality concept and point out that quality has many views. In concerning the current study, quality is seen in terms of service quality because the researcher dealing with dry port and terminal service quality and how customers will like to become satisfied when quality is high.

2.3. Service quality Concept

Service quality is considered an important tool for a firm's struggle to differentiate itself from its competitors (Ladhari, 2008). The relevance of service quality to companies is emphasized here especially the fact that it offers a competitive advantage to companies that strive to improve it and hence bring customer satisfaction.

Service quality has received a great deal of attention from both academicians and practitioners (Negi, 2009) and services marketing literature service quality is defined as the overall assessment of a service by the customer (Eshghi et al., 2008). Ghylin et al., (2008) points out that, by defining service quality, companies will be able to deliver services with higher quality level presumably resulting in increased customer satisfaction. Understanding service quality must involve acknowledging the characteristics of service which are intangibility, heterogeneity and

inseparability, (Parasuraman et al., 1985); (Ladhari, 2008). In that way, service quality would be easily measured. In this study, service quality can be defined as the difference between customer's expectation for service performance prior to the service encounter and their perception of the service received. Customer's expectation serves as a foundation for evaluating service quality because, quality is high when performance exceeds expectation and quality is low when performance does not meet their expectation (Asubonteng et al., (1996). Expectation is viewed in service quality literature as desires or wants of consumer i.e., what they feel a service provider should offer rather than would offer (Parasuraman et al., 1988). Perceived service is the outcome of the consumer's view of the service dimensions, which are both technical and functional in nature (Gronroos, 1984). The customer's total perception of a service is based on his/her perception of the outcome and the process; the outcome is either value added or quality and the process is the role undertaken by the customer (Edvardsson, 1998).Parasuraman et al, (1988) define perceived quality as a form of attitude, related but not equal to satisfaction, and results from a consumption of expectations with perceptions of performance. Therefore, having a better understanding of customer attitudes will help know how they perceive service quality in dry port and terminal. Negi (2009) suggests that customer-perceived service quality has been given increased attention in recent years, due to its specific contribution to business competitiveness and developing satisfied customers. This makes service quality a very important construct to understand by firms by knowing how to measure it and making necessary improvements in its dimensions where appropriate especially in areas where gaps between expectations and perceptions are wide. In the context of dry port and terminal, the researcher interested in learning more about the factors associated to service quality perceived by customers and how service quality is measured. Douglas & Connor (2003), emphasis that the customer who has developed heightened perception of quality has become more demanding and less tolerant of assumed shortfalls in service quality and identify the intangible elements (inseparability, heterogeneity and perishability) of a service as the critical determinants of service quality perceived by a customer. It is very vital to note here that, service quality is not only assessed as the end results but also on how it is delivered during service process and its ultimate effect on consumer's perceptions (Douglas & Connor, 2003).In dry port and terminal, the concept of service quality is an important thing because any failure or unreliability of ports' service can greatly influence the smooth movement of the flows in the next stage of the supply

chain and make port customers unhappy. Ports are increasingly perceived as integrated and inseparable nodes in the supply chains of their customers.

2.4. Benefits of measuring service quality

According to Parasuraman et al. (1997) and Ham et al. (2003), information on service quality gaps can help managers to diagnose where performance improvement can best be targeted. Identifying the largest negative gaps, combined with assessment of where expectations are highest, facilitates prioritization of performance improvement. Equally, positive gap scores will imply expectations are not just being met but exceeded. This information will allow managers to review whether they may be "over-supplying" this particular feature of the service and whether there is potential for re-deployment of resources into features which are underperforming (Shahin, 2008).

2.5. Customers' Expectations compared to Perceptions

Gronroos, (1982); Parasuraman et al., (1985) have proposed that customer's perception of service quality is based on the comparison of their expectations (what they feel service providers should offer) with their perceptions of the performance of the service provider. Parasuraman et al., (1988) point out that expectation is viewed differently in both satisfaction literature and service quality literature. In satisfaction literature, expectations are considered as 'predictions' by customers about what is likely to happen during a particular transaction while in service quality literature, they are viewed as desires or wants of customers, that is, what they feels a service provider 'should' offer rather than 'would' offer. For , the current study the researcher will define expectations as desires or wants of customers because this allows us to know exactly what service providers show offer and this is based on based past experience and information received (Douglas & Connor, 2003). It is important to understand and measure customer's expectations in order to identify any gaps in delivering services with quality that could ensure satisfaction, Negi, (2009). Perceptions of customers are based solely on what they receive from the service encounter (Douglas & Connor, 2003). The current study is mainly based on this discrepancy of expected service and perceived service from the customer's perspective. This is in order to obtain a better knowledge of how customers perceive service quality in dry port and terminal. the current study not focusing on the 1st four gaps because they are mainly focused on the

company's perspective even though they have an impact on the way customers perceive service quality in dry port and terminal and thus help in closing the gap which arises from the difference between customer's expectation and perception of service quality dimensions. Parasuraman et al., (1985) identified 10 determinants used in evaluating service quality; reliability, responsiveness, competence, access, courtesy, communication, credibility, security, understanding the customer, and tangibles. Most of these determinants of service quality require the customers to have had some experience in order to evaluate their level of service quality ranging from ideal quality to completely unacceptable quality. They further linked service quality to satisfaction by pointing out that when expected service is greater than perceive service, perceived quality is less than satisfactory and will tend towards totally unacceptable quality; when expected service equals perceived service, perceived quality is satisfactory; when expected service is less than perceived service, perceived quality is more than satisfactory and will tend towards ideal quality (Parasuraman et al., 1985).

2.6. Service Quality Models

As stated earlier service quality has been defined differently by different people and there is no consensus as to what the actual definition is. We have adopted the definition by Parasuraman et al., (1988), which defines service quality as the discrepancy between a customers' expectation of a service and the customers' perception of the service offering. Measuring service quality has been one of the most recurrent topics in management literature, Parasuraman et al., (1988), Gronroos, (1984), Cronin et al., (1992). This is because of the need to develop valid instruments for the systematic evaluation of firms' performance from the customer point of view; and the association between perceived service quality and other key organizational outcomes, Cronin et al., (2010), which has led to the development of models for measuring service quality. Gilbert et al., (2004) reviewed the various ways service quality can be measured. They include; 1) the expectancy-disconfirmation approach which is associated with the identifying of customer expectation versus what they actually experienced. It focuses on the comparison of the service performance with the customer's expectations. The customer's expectations could be assessed after the service encounter by asking him/her to recall them. 2) Performance-only approach merely assesses service quality by merely asking customers about their level of satisfaction with various service features following a service encounter. 3) Technical and functional dichotomy

approaches identify two service components that lead to customer satisfaction namely, the technical quality of the product which is based on product characteristics such as durability, security, physical features while functional quality is concerned with the relationships between service provider and customer such as courtesy, speed of delivery, helpfulness. 4) Service quality versus service satisfaction approach which mainly focuses on two service components that are interrelated; the transition-specific assessment which evaluates specific features of quality and the overall assessment which evaluates overall quality. This approach links perceived quality at the time of the service encounter or immediately after it and overall satisfaction with the service.

Perceived quality is based on attributes of the service over which the company has control and it is a measure of the customer's assessments of the service's value without comparison to consumer's expectation. 5) Attribute importance approach focuses on the relative weight on the importance the customer places on attributes found to be linked with service satisfaction.

Parasuraman et al.(1985) developed a conceptual model of service quality where they identified five gaps that could impact the customer's evaluation of service quality in four different industries (retail banking, credit card, securities brokerage and product repair and maintenance). These gaps were;

Gap 1: Consumer expectation - management perception gap Service firms may not always understand what features a service must have in order to meet consumer needs and what levels of performance on those features are needed to bring deliver high quality service. This results to affecting the way consumers evaluate service quality.

Gap 2: Management perception - service quality specification gap This gap arises when the company identifies want the consumers want but the means to deliver to expectation does not exist. Some factors that affect this gap could be resource constraints, market conditions and management indifference. These could affect service quality perception of the consumer.

Gap 3: Service quality specifications – service delivery gap companies could have guidelines for performing service well and treating consumers correctly but these do not mean high service quality performance is assured. Employees play an important role in assuring good service quality perception and their performance cannot be standardized. This affects the delivery of service which has an impact on the way consumers perceive service quality.

Gap 4: Service delivery – external communications gap External communications can affect not only consumer expectations of service but also consumer perceptions of the delivered service. Companies can neglect to inform consumers of special efforts to assure quality that are not visible to them and this could influence service quality perceptions by consumers.

Gap 5: Expected Service – perceived service gap From their study, it showed that the key to ensuring good service quality is meeting or exceeding what consumers expect from the service and that judgments of high and low service quality depend on how consumers perceive the actual performance in the context of what they expected.

Parasuraman et al., (1988), later developed the SERVQUAL model which is a multi- item scale developed to assess customer perceptions of service quality in service and retail businesses. The scale decomposes the notion of service quality into five constructs as follows: Tangibles, Reliability, Responsiveness, Assurance and empathy. It bases on capturing the gap between customers' expectations and experience which could be negative or positive if the expectation is higher than experience or expectation is less than or equal to experience respectively.

The SERVPERF model developed by Cronin & Taylor, (1992), was derived from the SERVQUAL model by dropping the expectations and measuring service quality perceptions just by evaluating the customer's the overall feeling towards the service. In their study, they identified four important equations:

SERVQUAL =Performance – Expectations Weighted

SERVQUAL = importance x (performance – expectations)

SERVPERF = performance Weighted

SERFPERF = importance x (performance)

Implicitly the SERVPERF model assesses customers experience based on the same attributes as the SERVQUAL and conforms more closely on the implications of satisfaction and attitude literature, Cronin et al., (1992). Later, Teas, (1993) developed the evaluated performance model (EP) in order to overcome some of the problems associated with the gap in conceptualization of service quality (Grönroos, 1984; Parasuraman et al.,1985, 1988).This model measures the gap between perceived performance and the ideal amount of a feature not customers expectation. He argues that an examination indicates that the P-E (perception – expectation) framework is of

questionable validity because of conceptual and definitional problems involving the conceptual definition of expectations, theoretical justification of the expectations component of the P-E framework, and measurement validity of the expectation. He then revised expectation measures specified in the published service quality literature to ideal amounts of the service attributes (Teas, 1993) Brady & Cronin, (2001), proposed a multidimensional and hierarchical construct, in which service quality is explained by three primary dimensions; interaction quality, physical environment quality and outcome quality. Each of these dimensions consists of three corresponding sub-dimensions. Interaction quality made up of attitude, behavior and expertise; physical environment quality consisting of ambient conditions, design and social factors while the outcome quality consists of waiting time, tangibles and valence. According to these authors, hierarchical and multidimensional model improves the understanding of three basic issues about service quality: (1) what defines service quality perceptions; (2) how service quality perceptions are formed; and (3) how important it is where the service experience takes place and this framework can help managers as they try to improve customers' service experiences Brady & Cronin, (2001). Saravanan & Rao, (2007), outlined six critical factors that customer-perceived service quality is measured from after extensively reviewing literature and they include; (1) Human aspects of service delivery (reliability, responsiveness, assurance, empathy) (2) Core service (content, features) (3) Social responsibility (improving corporate image) (4) Systematization of service delivery (processes, procedures, systems and technology) (5) Tangibles of service (equipment's, machinery, signage, employee appearance) (6) Service marketing From their study, they found out that these factors all lead to improved perceived service quality, customer satisfaction and loyalty from the customer's perspective. According to Brady & Cronin, (2001), based on various studies, service quality is defined by either or all of a customer's perception regarding 1) an organizations' technical and functional quality; 2) the service product, service delivery and service environment; or 3) the reliability, responsiveness, empathy, assurances, and tangibles associated with a service experience. Mittal and Lassar's SERVQUAL-P model reduces the original five dimensions down to four; Reliability, Responsiveness, Personalization and Tangibles. Importantly, SERVQUAL-P includes the Personalization dimension, which refers to the social content of interaction between service employees and their customers (Bougoure & Lee, 2009)

2.7. Functioning of the SERVQUAL

SERVQUAL represents service quality as the discrepancy between a customer's expectations for a service offering and the customer's perceptions of the service received, requiring respondents to answer questions about both their expectations and their perceptions Parasuraman et al., (1988). The use of perceived as opposed to actual service received makes the SERVQUAL measure an attitude measure that is related to, but not the same as, satisfaction (Parasuraman et. al., 1988).The difference between expectations and perceptions is called the gap which is the determinant of customers' perception of service quality as shown on figure 1 below

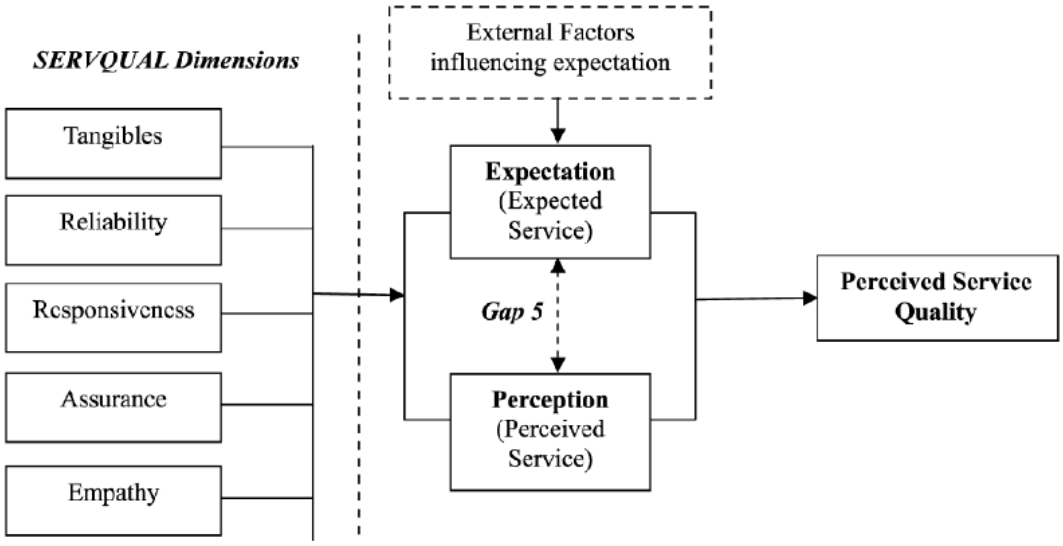


Figure2.1. Measuring service quality using SERVQUAL model (Kumar et al, 2009)

The expectations of customers are subject to external factors which are under the control of the service provider as shown on the diagram. The gap 5 on the diagram represents the difference between customers' expectations and customers' perceptions which is referred to as the perceived service quality (kumar et al., 2009). This study focuses on this gap, the difference between dry port and terminal customers' expectations and perceptions of service.

2.8. Criticisms of SERVQUAL Model

(Buttle, 1996) notwithstanding its growing popularity and widespread application, SERVQUAL has been subjected to a number of theoretical and operational criticisms which are detailed below:

Theoretical criticisms

Paradigmatic objections: SERVQUAL is based on a disconfirmation paradigm rather than an attitudinal paradigm; and SERVQUAL fails to draw on established economic, statistical and psychological theory.

Gaps model: there is little evidence that customers assess service quality in terms of P – E gaps.
Process orientation: SERVQUAL focuses on the process of service delivery, not the outcomes of the service encounter.

Dimensionality: SERVQUAL's five dimensions are not universal; the number of dimensions comprising service quality is contextualized; items do not always load on to the factors which one would a priori expect; and there is a high degree of inter- correlation between the five dimensions (Reliability, assurance, tangible, empathy and responsiveness).

Operational criticisms

Expectations: the term expectation is polysemic meaning it has different definitions; consumers use standards other than expectations to evaluate service quality; and SERVQUAL fails to measure absolute service quality expectations.

Item composition: four or five items cannot capture the variability within each service quality dimension.

Moments of truth (MOT): customers' assessments of service quality may vary from MOT to MOT.

Polarity: the reversed polarity of items in the scale causes respondent error.

Scale points: the seven-point Likert scale is flawed.

Two administrations: two administrations of the instrument (expectations and perceptions) cause boredom and confusion.

Variance extracted: the over SERVQUAL score accounts for a disappointing proportion of item variances.

2.9. Application of the SERVQUAL Model in Different Contexts

Kumar et al,(2009) used the SERVQUAL model in a research to determine the relative importance of critical factors in delivering service quality of banks in Malaysia (Kumar et al., 2009). In this article they modified the SERVQUAL model and considered six dimensions; tangibility, reliability, responsiveness, assurance empathy and convenience and these consist of 26 statements. They considered convenience because it is an important determinant of satisfaction for banking customers in Malaysia and contributes very highly in the customers' appreciation of the quality of services offered by the bank (Kumar et al, 2009). The respondents are asked questions based on the 26 statements and they seek to know about their expectations and experience. They carried this study on banking customers regardless neither of which bank you use nor how you do your transactions, could be domestically, internationally among others (Kumar et al, 2009).After they carried out their study they realized that there are four critical factors; tangibility, reliability, convenience and competence. These variables had significant differences between expectations and perceptions with tangibility having the smallest gap and convenience has the largest gap. They end up with the recommendation that banks need to be more competent in delivering their services and fulfilling the assurance of customers and providing the banking services more conveniently (Kumar et al, 2009). Curry et al., (2002) in an attempt to assess the quality of physiotherapy services used the SERVQUAL model and three physiotherapy services in Dundee, Scotland. They considered the ten original criteria for evaluation and combined them into five; tangibles, reliability, responsiveness, assurance (including competence, courtesy, credibility, and security) and empathy (including access, communication, and understanding). The quality gap is measured with these five dimensions with the application of an adaptable 22 item survey instruments. The survey involves questions relating to customers' expectations and perceptions. They sought to measure five gaps developed by Parasuraman et al., (1985). They found out that the services were highly appreciated by customers even though they realized that the perception gaps were slightly negative and the services could be improved. Their studies proved that assurance and empathy were very important in their research. In spite of the criticisms of the SERVQUAL model they confirm its potential applicability in measuring service quality in the public sector to determine consumer priorities and measure performance. Badri et al., (2003) made an assessment and application of the SERVQUAL model in measuring service quality in information technology center. For their

research gap they used a larger sample which also differs from other studies that addressed the dimensionality problem of the IT center-adapted SERVQUAL instruments. The second gap was to identify the gaps in service quality in the IT centers in the three institutions of higher education in the United Arab Emirates. Their findings showed that there was an inadequacy of dimensions for a perfect fit. On the other hand, based on their feedback, respondents felt that SERVQUAL is a useful indicator for IT center service quality in institutions of higher education. SERVQUAL identified gaps in service quality for the three institutions. Empirical results of SERVQUAL scores for the IT centers in the three institutions are also presented. Negi, (2009) used the model to determine customer satisfaction through perceived quality in the Telecommunication industry and found out that reliability, empathy and network quality proved to significantly effective in contributing to overall service quality and overall customer satisfaction with mobile services. Akan, (1995) used the SERVQUAL model in the four stars hotels and found out that competence and courtesy combined with assurance where most important attributes influencing the perception of quality. In a nutshell, the researcher try to apply this instrument in the context of dry port and terminals and find if its dimensions do measure service quality hence are adequate for a perfect measure of the constructs. This will also enable the researcher to identify gaps in service quality.

In the current study, In spite of the criticisms in the applicability of the SERVQUAL model by some researchers (Buttle, 1994; Cronin & Taylor, 1992) the researcher think it is good for dry port and terminal even though it has its weaknesses due to the abstract and elusive nature of service quality concept which is resultant from the fact that services are intangible, heterogeneous and inseparable from production and consumption (Parasuraman et al., 1988). Buttle, (1994) and Cronin & Taylor, (1992) however support the fact that this model is good for port and terminal the service expectations and perceptions of customers and make improvements because of its good reliability and validity.

The quality of dry port service can be assessed by measuring the customer's expectation and perception. However there is no quantitative yardstick available for gauging these perception precisely.it goes without saying without a clear and unambiguous definition of service quality the dry port operator would issue vague instruction for improving service quality which would further complicate matters (Lehtinen & Lehtinen 1982) in such circumstance the focus shift the

service to process from service outcome (Asubonteng et al, 1996). In other words process quality assumes greater importance rather than final outcomes. This is particularly applicable in case of dry port as the customers compare their expectation against their experience than eventual outcomes and develop impression of service level.

2.10. Dry port Concept:

The word dry port has been defined by many scholars and the definitions reflect the broad view of the concept from different perspectives. Important to note is that the definitions emanate from the perspective of the physical facility, function and purpose. The definitions were also born of the fact that the periodical steep rise in container flows resulted in crowded terminals, congestion and prolonged dwell time for containers. As a solution to these problems at the main sea ports, the trans-ocean vessels started to call at single hub port while feeder vessels, haulages, trucks and trains connected to many smaller inland or dry ports, (Baird A.J, 2002). Leveque and Roso (2002) defined a dry port as "an inland intermodal terminal directly linked to seaport(s) with high capacity transport means, where customers can leave or pick up their standardized unit asif directly as a seaport. This definition takes into account the fact that a dry port does not only do the traditional role of transshipment as inland terminals but in addition to this role, it provides other services like; consolidation, storage(both cargo and empty containers), maintenance and repair of containers, and customs clearance. Dry port functions include distribution, consolidation, storage, customs services, and possibly equipment maintenance (Wang and Wei 2008). According to the United Nations Conference on Trade and development(UNCTAD,1991), a dry port is "a common user facility with public authority status, equipped with fixed installations and offering services for handling and temporary storage of any kind of goods(including containers) carried under customs transit by any applicable mode of transport ,placed under customs control and with customs and other agencies competent to clear goods for home use, warehousing, temporary admissions, re-export, temporary storage for onward transit and outright export." This definition though broad is not far from Weigmansetall (1999) that takes into account, the value adding role of dry ports like freight consolidation and distribution of cargo. According To Jarzemskisetall (2007), a dry port means a common user facility with public authority status equipped with fixed installations and provides temporary storage of goods and containers including customs clearance. Allen (2008) further qualified dry ports Developing

Country Studies as being positioned away from typical borders, but with access to major metropolitan areas, highways, and labor bases. The following key terminologies are defining and deriving a proper meaning from the word 'dry port". The three terms give the understanding from the perspective of form and function of dry port and they include; Containerization: This relates to the fact that dry ports are linked with container handling, both maritime and domestic, as well other intermodal activities like swap bodies, consolidation, trans loading, deconsolidation and small scale manufacturing. Dedicated Link: A dry port must be linked with a high capacity corridor. Normally; rail and barge are the recommended links although haulages or trucks may also be used.

Massification: A dry port must generate economies of scale inform of reduced costs and time within the distribution process. Handling large volumes at a minimum unit cost and shortest time is paramount in positively impacting on the supply chain network. It's however important to note the difference between a dry port and an inland container depot (ICD).Where as an Inland container depot handles only containerized cargo, a dry port handles various types of cargo in addition to other services earlier mentioned. Girish Gujar (2010), presented three types of dry ports and they include; Gateway (Sea) Terminals, Rail Terminals and Distribution centers. First, a sea terminal creates the interface between inland and sea activities of freight distribution. Second, the rail terminal serves as a link to gateway terminals while, the third category(distribution center) as its popularly known in Europe performs many value adding activities like sorting ,debulking, labeling, grading and inventory control in addition to transportation and warehousing.

2.11. Dry Ports in East Africa

Mombasa and Dares Salaam Sea ports found in Kenya and Tanzania respectively are the current gateways to East Africa from the Indian Ocean, although a third Sea port in Lamu(Kenya) is under construction by China Communications construction Company in a deal worth $478.9 million to directly link the coast, Kenya, Ethiopia and Southern Sudan. Traditionally, dry ports development and expansion was linked to economic growth and increase in volume of trade. The growth in the volume of trade turned such regions or places into the centers of attraction (Grishi, 2010).Key South East Asian ports like Singapore, Hong Kong, Mumbai and Shanghai are a classic example. Continuous rise in trade resulted in a rapid rise in demand for port services, of

which failure to meet capacity needs created inefficiency and operational bottlenecks. Challenges to expansion in original sea ports included limited land or high cost of land, together with the high cost of relocating people and compensations for the destroyed property to pave way for port expansion. Many nations beginning with the most developed and industrialized established dry ports as a solution. Although East Africa lags behind Europe and Asia, in terms of volume of trade and port development, it has not been an exception to the above assertion. For example, According to the China State Council's Information office white paper (2013), between 2000 and 2013, trade volume between China's and Africa increased rapidly from about $10.5 Bn to$200 Bn.This increase in trade together with impressive economic growth figures averaging 5% per annum in the region impacted on the operations of ports because of a sharp rise in cargo (containers) and rise in demand for port related services. Andrew Roberts (2013), reported that as the trade and economic growth figures in East Africa increased, Sea port activities, traffic jam and congestion increased at Mombasa Sea port too. For example, from 2005 to 2008, imports at Mombasa port grew at an annual rate of 9.7 %(liquid bulk), 11.5% containerized cargo and at 23 %(dry bulk).This implies that as trade and economic growth increased, the need for port services also increased and due to limitations in expansion of existing sea ports, investment in dry ports was required and this trend has led to recent investment in dry ports in East Africa. According to the Shippers Council of East Africa, (2013), Mombasa, the busiest container terminal in East Africa saw container volume increase by 25% in the first half of 2012 alone, and handled an estimated 840,000 TEU in 2013 from about 700,000 TEUs the previous year.

2.12. Dry port in Ethiopia

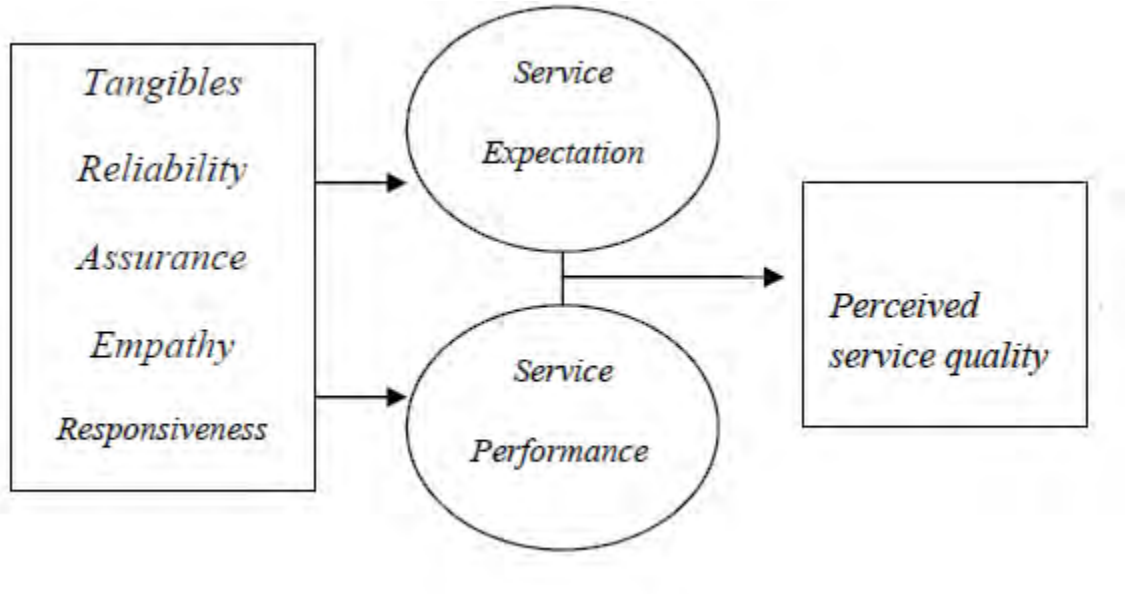
As one of the landlocked developing countries Ethiopia continuously face the challenge of physical isolation, supply chain related barriers from the sea and the high costs of trading with the rest of the world (United Nations Economic Commission for Africa, 2011). In order to counter these challenges associated with landlocked-ness, Ethiopia established several dry port to take the advantage of dry port.

The Economic Commission for Africa has undertaken a feasibility study that could see the construction of more dry ports in Ethiopia. Ethiopia started developing dry ports following a 2007 study by the Ministry of Transport & Communication, which suggested that the country could save foreign currency from seaport expenses at Djibouti, by building an inland port within

the country. Such ports handle the customs inspections, documentation of cargo and packaging for import and export. The saving, according to the study, could be seven to eight dollars for every container that's transported through Djibouti. Consequently the Modjo Dry Port, 73Km east of the capital, was built at a cost of 20 million birr on a 63 hectar plot and started operations back in 2009. An additional 617 million birr was spent to expand its capacity. Another dry port, in Semera, 580Km north of Addis Ababa, also started operations at the same time, although it is not used quite as regularly. Use of the Modjo Dry Port increased in February 2012, when the multi-modal transport system, whereby the ESLSE handles the transport of goods from port of origin to an inland destination port, was launched. The port has 40ft containers, too, but they are statistically recorded as two 20ft containers. The ESLSE set up satellites at Comet (Addis Ababa); Gelan, in Oromia Special Zone, 25Km east of the capital; Dire Dawa, 317Km east of Addis; Mekelle, 780Km north of Addis and Kombolcha, 380Km north of Addis, to ease the congestion at Modjo. Out of these, Addis Ababa, Dire Dawa and Kombolcha are now being recommended by the Maritime Affairs Authority to become full-scale dry ports. The Maritime Affairs Authority has also recommended Mekelle, according to research & planning expert at the Authority, but the Ministry of Transport already approved a dry port for the town in December 2012. Four of the 12 suggested sites are located in Amhara region, followed by two in Oromia. A single site was identified in Somalia, Gambella and Southern regions, each. (Source: fortune February 2012). Ostensibly, the ports are to create logistic chains to ports in Somaliland, Djibouti, Kenya, Sudan and South Sudan. This strategic drive also aims to take advantage of the growing international and regional trade including the country's burgeoning economic relation with its trading partners in the region.

2.13. Conceptual Framework

The conceptual framework (Figure 2) explains the underlying process, which is applied to guide this study. As discussed above, the SERVQUAL model is suitable for measuring service quality in dry ports and terminals services using the service quality dimensions. This is line with Gronroos, (1982), technical quality dimension which is used to measure service quality.



Sources: Changing Nde Daniel Lukong Paul Berinyuy(2010)
Figure2.2. Conceptual frame work

Based on the revision made by Parasuraman, (2004) on the SERVQUAL model, the researcher have adopted the 22-items to the current study to measure the gap between expected /perceived service quality in modjo and kaliti dry ports and terminals and compare the service quality of the two dry ports.

CHAPTER THREE

METHODOLOGY AND DATA COLLECTION INSTRUMENT

3.1. Research design

The Research design can be thought of as the logic or master plan of a research that throws light on how the study is to be conducted. It shows how all of the major parts of the research are done. The current study Design is non-experimental, survey type, descriptive and comparative research. The study was utilized quantitative and qualitative design to give answer for the research question. Close ended questionnaires were used for collecting quantitative data and, open ended questionnaires were used for collecting qualitative data.

3.2. Data Source

Data were collected from primary and secondary sources. The respondent categories for primary source are the customers (importers/exporters, transistors, and drivers) In addition to the primary sources of data, the researcher were also utilized secondary data related to the service delivery quality of Modjo and Kaliti port and terminals and it were collected from company publication and reports.

3.3. Service quality Measurement Dimensions

The researcher were measured the two dry ports service quality based on five potential dimensions of SERVQUAL framework. These dimensions are used as indicators of service quality in this survey. The five indicators of service quality are

1. Tangibles-Physical facilities, equipment and appearance of personnel;
2. Reliability- Ability to perform the promised service dependably and accurately;
3. Responsiveness-Willingness to help customers and provide prompt service;
4. Assurance- (including competence, courtesy, credibility and security), Knowledge and courtesy of employees and their ability to inspire trust and confidence, and
5. Empathy (including access, communication, understanding the customer) Caring and individualized attention to its customers.

In the SERVQUAL instrument, 22 statements measure the performance across these five dimensions, using a five point Likert scale measuring both customer expectations and perceptions (Gabbie and O'neill, 1996 in Shahin, 2008).

3.4. Sample Design

The study was having a population group of Modjo and Kaliti ports and terminals customers (importers/exporters, transistors, and drivers) Due to constraints such as time and budget, it was not be possible to collected data for the entire population. Therefore, samples were drawn from the population groups. For quantitative and qualitative data collection, the two dry ports customers (importers/exporters, transistors and drivers) were sampled and the data were collected within one month.

3.5. Sampling techniques and sampling procedures

The source of population for the current study was the customers of Modjo and Kaliti ports and terminals (importers/exporters, transistors, and drivers) Therefore, samples were drawn from the population groups. For quantitative and qualitative data collection the researcher were used simple random sampling techniques for the two ports customers.

Yamane (1967) provides a simplified formula to calculate sample sizes. This formula was used to calculate the sample sizes of the two dry ports and terminals.

$$n = \frac{N}{1 + Ne^2}$$

Where,

N = is the population size

n = is the sample size

e = is the level of precision

This formula is being applied to our population of customers. According to data obtained from the Ethiopian Shipping and Logistic Services Enterprise head office, the number of customers that were served by the two ports and terminals were 29,622. Of these, 6,266 were customers

handled by Kaliti Port and Terminal services and the remaining 23, 356 were served at Modjo port and terminal service during the six months between Hamle and Tahisas (2015). Of these six month data, the researcher were take the average value of one month data and the study population is 4937. Based on this data, and the sample size formula, the sample size determined:

$$n = \frac{4937}{1 + 4937(0.06)^2}$$

n =263

Considering a non-response rate of 10%, this sample size is revised upwards by

$$(263 \times 10\%) = 26.3 \approx 26$$

This makes the total sample size for the study equal to

$263 + 26 = 289$ Customers

This sample is divided between the two dry ports and terminals according to the proportion of customers that were served by each. Therefore, the sample to be selected from Kaliti Dry port and terminal is Hence, a total of $21.15\% \times 289 = 60.69 \approx 61$ and the remaining 228 Customers were addressed from Modjo Dry port and terminal.

3.6. Data Collection Instruments

1. ***Questionnaires*:** the researcher were adopted standard close ended questionnaires and also developed open ended questionnaires that can allow for collecting information from different sources of customers.

2**. *Secondary data:*** collected in the form of a desk review of company documents including various reports, and publications.

3.7. Data entry, Analyses and Reporting

For quantitative data the researcher used standard statistical software called SPSS for data entering and analyses

The data analyses were have both descriptive and inferential approach to analyze the data. Descriptive analysis uses measurement of central tendency such as mean, median, mode, range and measure of dispersion such as percentage, standard deviation and variance. Inferential analysis uses correlation. Result were reported using tables.

Service quality Indices computation: the perceptions of users towards official statistics, and its quality were studied both at the time of survey. This is approached using the SERVQUAL framework. The framework uses a standard 22 pair of statements which are used to rate the five gaps of service quality. These 22 pairs of statements are attached in ANNEX V. These questions contextualized to the current study in the standard questionnaires. Obtain the score for each of the 22 Expectation statements, and then obtain the score for each of the 22 Perception statements. Calculate the Gap Score for each of the statements where the

Gap Score = Perception – Expectation

$$\boldsymbol{G_i = \frac{1}{n_i}\sum_{j=1}^{n_i}(P_{ij-}\, I_{ij})}$$

Where G_i is the Gap score of the ith statement, i = 1,…, 22. And n_i, P_{ij} and I_{ij} are the number of users sampled, user perception and the user expectation for user j in statement i, respectively.

Next, these gaps were aggregated to an average value by grouping them into the five SERVQUAL gaps. Statement pairs 1 through 4 were measure the tangibles dimension, 5 through 9 were measure the reliability dimension, 10 through 13 were measure the responsiveness dimension, 14 to 17 were measure the assurance dimension and statements 18 to 22 were measure the empathy dimension. The corresponding SERVQUAL scores is,

$\boldsymbol{G_1 = \frac{1}{5}\sum_{j=1}^{4} G_i}$ For tangibles dimension where $k = 1$

$\boldsymbol{G_2 = \frac{1}{5}\sum_{j=5}^{9} G_i}$ For reliability dimension where $k = 2$

$\boldsymbol{G_3 = \frac{1}{4}\sum_{j=10}^{13} G_i}$ For responsiveness dimension where $k = 3$

$\boldsymbol{G_4 = \frac{1}{4}\sum_{j=14}^{17} G_i}$ For assurance dimension where $k = 4$

$\boldsymbol{G_5 = \frac{1}{5}\sum_{j=18}^{22} G_i}$ For empathy dimension where $k = 5$

A SERVQUAL score will then be computed to give an overall service quality for Modjo and Kaliti port and terminals. It can be computed with or without weights. The User Satisfaction Index computed without weight is calculated as,

$$\boldsymbol{G = \frac{1}{5}\sum_{k=1}^{5} G_k}$$

Where $\boldsymbol{G}$ is the User Satisfaction Index with equal weights to each of the five satisfaction (service quality) dimensions.

3.8. Instrument Validity and reliability

Validity

The questionnaire was prepared based on the standard questions given by Zeithmal et. Al (1986) and have been tested over and over again in measuring service quality. The 22 question approach to measure service quality using the SERVQUAL approach has been modified to a dry ports and terminals service quality context. Pilot test was conducted on 10 customers of the dry ports and the feedbacks obtained from the pilot testing of the questionnaire and approaches used were included in the questionnaire prepared for the actual data collection.

Reliability

The researcher run a Cronbach's alpha test. This test computes the interitem correlations or covariances for all pairs of variables in the variable list and Cronbach's alpha statistic for the scale formed from them. The result is given in Table 3.1.

Table 3.1 Cronbach's Alpha statistics

Test scale = mean(unstandardized	items)
Average interitem covariance:	0.74
Number of items in the scale:	44
Scale reliability coefficient (Cronbach's alpha):	0.97

According to the result, the use of a five points Likert scale instead of a seven or eleven points scale was indeed a right choice as indicated by a 97% scale reliability statistics. Moreover, the interitem covariance was also within acceptable limits showing that the 22 questions have a covariance of 74% among them. This result improves when the questions are grouped into their SERVQUAL dimensions. Table 3.2 below gives this result.

Table 3.2.Cronbach alpha statistics disaggregated by SERVQUAL dimensions

Dimension	Average interitem covariance	# of Variables	Scale reliability coefficient
Tangibility	0.89	8	0.89
Reliability	0.85	10	0.90
Responsiveness	0.90	8	0.91
Assurance	0.85	8	0.90
Empathy	0.90	10	0.93

As Table3.2 above clearly shows, results for the interitem covariance among the questions for each dimension are better than 74.11%. The scale reliability statistics (Cronbach's Alpha statistics) is also well clear of the cut-off point of 80%. Therefore, it can be established the instrument used for the study is reliable.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1. Demographics

This study was conducted on two of the dry ports and terminals in Ethiopia, Kaliti and Modjo. The study sampled a total of 289 customers of these two ports and among these 270 were filled and returned for analysis at a response rate of 93 %.The data collection consumed a full month, April 2016. The respondents were proportionally distributed between the two dry ports and terminals. Respondents were randomly contacted as they come seeking for the services.

As depicted in Table 4.1, a 79.26% of the respondents were from Modjo and the remaining was from Kaliti. A meager 10.49% of the respondents were female. This confirms the fact that very few women engage in the trades of transistors, importers and exporters and drivers. This also consistent with the general observation that the participation of women in the formally workforce still lags behind. Concerning qualification of respondents, less than 10% constitute the extreme levels – either below grade 8 or masters or above. A certificate or diploma holders together constitute over 55% of the respondents. As expected, the lion'sshares (over 70%) of respondents are transistors. It is the duty of transistors to take care of freight related clearance including port and terminal related services. Next to transistors, importers (15.91%) drives (10.61%) constitute service users sampled from the two ports. Nearly every sampled respondent (over 95%) have been served more than at either of the two dry ports and terminals. Out of these over 92.51% have either of the two dry ports and terminals three times or more before.

Table 4.1. Demographic background of respondents

Variable		Freq.	Percent	Obs.
Dry port terminal	Kaliti	56	20.74	270
	Modjo	214	79.26	
Sex	Male	239	89.51	267
	Female	28	10.49	
Qualification	below 4	6	2.22	270
	4 to 8	13	4.81	
	8 to 10	30	11.11	
	10 to 12	31	11.48	
	Certificate	84	31.11	
	Diploma	75	27.78	
	Degree	29	10.74	
	master and above	2	0.74	
Occupation	Importer	42	15.91	264
	Exporter	3	1.14	
	importer and exporter	3	1.14	
	Transitor	188	71.21	
	Driver	28	10.61	
Served	Once	11	4.12	267
	Twice	9	3.37	
	three times or more	247	92.51	

These results reported in Table 4.1 indicate that the sampled service users were mostly from Modjo proportional to its size. They are mainly male with a certificate or a diploma level education and work as transistors. The respondents have received the services of the dry ports and terminals at least three times or more indicating that whatever expectations or perceptions they have formed, these have been made more concrete through as a result of the repeated use of the services of the dry ports.

4.2. Comparative Analysis of Service Quality

Under this subsection, an attempt made to paint a comparative picture of the two dry ports terminals. Given the differences of the two dry ports and terminals in terms of proximity to Addis Ababa[1], the service provision technology setup, and the volume of freight accommodation capacity, the comparison is expected to reveal which of the two models of dry port formation will work better.

[1]*The financial and political capital of Ethiopia with over 2.5 populations thriving with all sort of business that requires heavy use of dry port terminal service*

In addition to comparison, the study also profiled overall service quality of dry ports and terminals service taking Kaliti and Modjo as a case study. It also delved into a detail service quality profiling of each of the two dry ports and terminals. Furthermore, the qualitative results obtained as part of the distributed questionnaire and served to enrich the quantitative results.

4.2.1. SERVQUAL Profiling of Respondents

As clearly discussed in Section 2.9, the SERVQUAL approach to assessing service quality makes use of 22 standardized statements for qualify service quality in terms of a perception vs-a-vis expectation gaps across five dimensions. According (Zeithaml, 1987), these statements are scored on a Likert scale.

This study uses these 22 standardized statements on a Likert scale score between 1 (minimum score) and 5 (maximum score), 3 being point of neutrality. These questions are further aggregated into five dimensions,

1. Tangibles
2. Reliability
3. Responsiveness
4. Assurance
5. Empathy

These 22 statements are attached in the Annex section (V) along with the data collection instrument. IN this case, the mean, standard deviation and gap score of each22 item together with their respective dimension was calculated in order to conclude the overall service quality of Modjo and Kaliti dry port and terminals and make comparison of their service quality.

The mean statistical value approaching were based on the following assumptions: if the mean average is less than 3, it indicates that the service quality of the dry ports and terminals are low; if the mean average is equal to 3, it indicates the service quality of dry ports and terminals are neutral and if the mean average is greater than 3, it indicates that the service quality of dry ports and terminals are better which customers are likely happy by the service delivery quality of dry ports and terminals. Accordingly, the mean scores have been computed for all the five service quality dimensions that are tangibles, reliability, responsiveness, assurance, and empathy by equally weighting the mean scores of all the items under each dimension. Respondents were asked to rate their expectation and perception of the service quality of Modjo and kaliti dry

ports and terminals on a five-point Likert type scale ranging from 1 being strongly disagree to 5 strongly agree. The two ports average mean score of each quality dimension together with their respective variables was separately presented, analyzed and interpreted as follows

Table4.2. Summary of the SERVQUAL questions for Tangibility dimension

Variable	**Obs**		**Mean**		**Std. Dev.**	
	Expec.	Perc.	Expec.	Perc.	Expec.	Perc.
Modjo/Kaliti port and terminals will have modern looking equipment.	268	249	3.3172	3.2450	1.3575	1.3590
The physical facilities at Modjo port and terminals will be visually appealing.	268	247	3.1679	3.0607	1.3400	1.3130
Employees at Modjo port and terminals will be neat in their appearance.	260	246	3.3962	3.3659	1.2828	1.2406
The physical environment of Modjo port and terminals shall be clean.	269	245	3.2602	3.3429	1.3900	1.3659

As indicated in Table 4.2 the Tangibility dimension scores are slightly above 3 points of neutrality in both perception and expectation formation of respondents. As we will see over and over again, this is a fundamental result of the study indicating that customers have formed low expectations about the service quality of the two dry ports and these have been reinforced by low level of service quality perception through repeated use of the services of the dry port and terminals.

Table4.3. Summary of the SERVQUAL questions for reliability dimension

Variable	**Obs**		**Mean**		**Std. Dev.**	
	Expec.	Perc.	Expec.	Perc.	Expec.	Perc.
When Modjo/Kaliti port and terminals promise to do something by a certain time, they do.	262	241	3.0840	3.1079	1.3507	1.3528
When a customer has a problemModjo/Kaliti port and terminals will show a sincere interest in solving it.	265	243	3.0415	3.0782	1.3603	1.3322
Modjo/Kaliti port and terminals will perform the service right the first time.	262	242	2.9160	2.9959	1.3191	1.3122
Modjo/Kaliti port and terminals will provide the service at the time they promise to do so.	265	245	2.9245	2.9878	1.2530	1.2626
Modjo port and terminals will insist on error free records.	258	233	2.7829	2.9142	1.3082	1.2599

As indicated in Table 4.3 the reliability dimension score are almost around 3. The sampled service users reported that the service quality in terms of reliability again hovers around the point of neutrality, and the gap between perception scores and expectation scores is very small. Shows the mean value of each reliability items, the first two items are good score than the rest three

items. In comparing with the mean score of tangibility, mean value of the reliability dimension was below which obviously implies the service quality of the two dry ports and terminals are good in the former table.

Table4.4. Summary of the SERVQUAL questions for Responsiveness dimension

Variable	**Obs**		**Mean**		**Std. Dev.**	
	Expec.	Perc.	Expec.	Perc.	Expec.	Perc.
Employees of Modjo/Kaliti port and terminals will tell customers exactly when services will be performed.	259	237	2.9151	3.0338	1.2328	1.2751
Employees of Modjo/Kaliti port and terminals will give prompt service to customers.	265	244	2.9132	3.0902	1.3665	1.3084
Employees of Modjo/Kaliti port and terminals will always be willing to help customers.	263	243	3.0266	3.1893	1.2883	1.2387
Employees of Modjo/Kaliti port and terminals will never be too busy to respond to customers' requests.	264	247	3.1856	3.2024	1.2113	1.1960

Table 4.4 indicates the mean value of responsiveness also scored almost equal to 3. This point also shows neutrality in both perception and expectation of service delivery quality like that of reliability. But in the first two item of responsiveness dimension the customer expectation of service quality is slightly lower than perceived service.

Table4.5. Summary of the SERVQUAL questions for Assurance dimension

Variable	Obs		Mean		Std. Dev.	
	Expec.	Perc.	Expec.	Perc.	Expec.	Perc.
The behaviour of employees in Modjo/Kaliti port and terminals will instil confidence in customers	262	244	3.0153	3.0000	1.2894	1.2172
Customers shall be able to feel safe in their transactions with employees ofModjo/Kaliti port and terminals.	260	241	3.1308	3.1701	1.3262	1.2813
Employees of Modjo/Kaliti port and terminals will be consistently courteous with customers.	258	241	3.1240	3.1826	1.3055	1.2747
Employees of Modjo/Kalitiport and terminals will have the knowledge to answer customers' questions.	262	243	3.2023	3.2757	1.2260	1.2374

As indicated in Table 4.5 the overall service delivery quality of the two dry ports in terms of assurance score slightly above 3 and it is good in comparison with reliability and responsiveness dimensions of service quality. This indicates in both perception and expectation of service quality of the dry ports and terminals in terms of tangibility and assurance relatively better but not at the required level of the customers.

Table4.6. Summary of the SERVQUAL questions for Empathy dimension

Variable	Obs		Mean		Std. Dev.	
	Expec.	Perc.	Expec.	Perc.	Expec.	Perc.
Modjo/Kaliti port and terminals will give customers individual attention.	256	240	3.1016	3.1708	1.2608	1.1962
Modjo/Kaliti port and terminals will have operating hours convenient to all their customers.	257	241	3.2062	3.3237	1.3021	1.2694
Modjo/Kaliti port and terminals will have employees who give customers personal service.	262	242	3.2023	3.2686	1.2446	1.1551
Modjo/Kaliti port and terminals will have their customers' best interest at heart.	262	242	2.9733	3.1281	1.3374	1.1896
The employees of Modjo/Kaliti port and terminals will understand the specific needs of their customers.	264	244	3.0758	3.1393	1.3117	1.2260

As indicated by Table4.6 items were used to assess the service quality of the two dry ports in terms of empathy were resulted above 3 in both perception and expectation of service quality except in item 3 that is slightly difference in customer expectation . This showed the dry ports relatively providing an emphatic service to its customers.

In addition to these findings, disaggregating this result by sex does not seem to change the result reported in the previous Table Service quality perception is not quantitatively different from the service quality expectation. Moreover, both indices register a score value that is only marginally above 3 points or fall short of this neutrality threshold across all the five dimensions. It is also important to note that sampled female respondents showed consistently lower expectations scores than male respondents. They also scored lower perception score for many of the statements (Refer to ANNEX I).

Disaggregation by the two dry ports and terminals reveals that Modjo performs consistently better than Kaliti in all of the five categories both in terms of service quality perception and expectation. However, the gap score remains close to zero in both ports (Refer to ANNEX II).

Given the general pattern in the results of lower gap between expectation and perception and also a lower score both for expectation and perception, it is worth noting that respondents with a level of education between Grades 10 and 12 registers the lowest service quality expectations score in all the five dimensions (Refer to ANNEX III)

A comparison of the service quality dimensions is also carried out for the two dry ports and terminals disaggregated by the nature of occupation of respondents. Three of the most common types of occupations, importer, transistor and driver, were selected for this comparison. The

results revealed that perception is in excess of expectation scores for all the three occupation categories in all the five SERVQUAL dimensions. Moreover, the same pattern of low gap score and a perception and expectation score of around three is observed (Refer to ANNEX IV).

Disaggregation of customers' response by frequency of getting served at the dry ports and terminals. The result showed that across all the five SERVQUAL dimensions, scores improve with increase in frequency of using the services of the ports. Also note that, perception scores exceed expectation scores for the last category (Refer to ANNEX IV).

4.2.2. Comparison of Perception and Expectation of Customers in Means

In this section, i examine the gap scores further to see if the small difference between perceptions and expectation is any different from naught in statistical sense. The Tangibility dimension has only one statement showing significant[2] gap out of four. It is therefore safe to say that there is not a significant difference between perception and expectation.

Perception – expectation differences are statistically insignificant for all statements gauging the other four dimensions namely reliability, responsiveness, assurance, and empathy. This result supports the findings presented in the entire previous table with a statistical validity. In other words, none of the small differences we observed in the previous result tables between perception and expectation is really different from zero and the direction of the difference, that is whether perception exceeds expectation or vice versa, does not matter.

Table4.7. Mean comparison of Perception and Expectation of customers for Tangibility dimension

Indicator	Obs.	(Expec - Perc)	t statistic	P-Value
Modjo/Kaliti port and terminals will have modern looking equipment.	249	0.1325301	1.9187	0.0562
The physical facilities at Modjo/Kaliti port and terminals will be visually appealing.	247	0.1862348	2.6799	0.0079
Employees at Modjo/Kaliti port and terminals will be neat in their appearance.	242	0.0454545	0.627	0.5312
The physical environment of Modjo/ port and terminals shall be clean.	245	-0.0204082	-0.2511	0.802

Table 4.7 shows that modern looking equipment had a gap score of naught. The same result is reported neat appearance, and cleanliness. Therefore, the low expectations and perception results obtained were equal. However, with respect to visual appeal of physical facilities, expectations

[2]*Significance here is to refer to a statistical significance at 95% confidence interval.*

of customers exceeded the perceived quality of the dry ports by 0.1862 points. Therefore, the dry ports performed worst in terms of visual appeal of facilities with regard to tangibles in the premises of the dry port. Besides, the port should also work to acquire modern equipment.

Table 4.8Mean comparison of Perception and Expectation of customers for reliability dimension

Indicator	Obs.	(Expec - Perc)	t statistic	P-Value
When Modjo/Kaliti port and terminals promise to do something by a certain time, they do.	238	0.0420168	0.4883	0.6258
When a customer has a problemModjo/Kaliti port and terminals will show a sincere interest in solving it.	242	-0.0247934	-0.3258	0.7449
Modjo/Kaliti port and terminals will perform the service right the first time.	240	-0.0208333	-0.2634	0.7925
Modjo/Kaliti port and terminals will provide the service at the time they promise to do so.	244	0.0245902	0.3267	0.7442
Modjo/Kaliti port and terminals will insist on error free records.	233	-0.0729614	-0.9176	0.3598

The study revealed, as reported in Table 4.8, that both dry ports did not keep their deadline for delivering a certain service within a certain time. The perceived sincerity to solve problems of customers were no better than that customers expected it to be; and what customers expected it to be is slightly above three (which is a low mean score). This result repeated itself for whether a dry port will perform service right the first time it is requested. Table 4.3 shows this is not likely (only a mean score of around 3).Table 4.8 also shows that there is no difference between customers' expectation and perceived service quality in terms of error free records.

Table4.9. Mean comparison of Perception and Expectation of customers for responsiveness dimension

Indicator	**Obs.**	**(Expec - Perc)**	**t statistic**	**P-Value**
Employees of Modjo/Kaliti port and terminals will tell customers exactly when services will be performed.	234	-0.0982906	-1.2775	0.2027
Employees of Modjo/Kaliti port and terminals will give prompt service to customers.	242	-0.1239669	-1.6182	0.1069
Employees of Modjo/Kaliti port and terminals will always be willing to help customers.	240	-0.1125	-1.5557	0.1211
Employees of Modjo/Kaliti port and terminals will never be too busy to respond to customers' requests.	243	0.037037	0.5079	0.612

Table 4.9 reveals that there is no difference between perception and expectation in terms of responsiveness of the dry ports and terminals since none of the expectation versus perception gaps are statistically significant. There is no statistical difference between what customers expect and what is perceived about whether a dry port tells customers when a specific service will be performed. Likewise, expectation of customers about prompt service provision is matched with

what is perceived upon arrival at the dry port. The same result is returned in the analysis with respect to willingness of a dry port's willingness to help customers. Concerning the gap between perceived responses to customer's request versus expectations formed by customers, again there was no statistical difference. Customers find port service providing personnel to be as busy to respond to their requests as they expected them to be.

Table4.10. Mean comparison of Perception and Expectation of customers for assurance dimension

Indicator	Obs.	(Expec - Perc)	t statistic	P-Value
The behaviour of employees in Modjo/Kaliti port and terminals will instil confidence in customers	240	0.0333333	0.4479	0.6547
Customers shall be able to feel safe in their transactions with employees ofModjo/Kaliti port and terminals.	236	0.0084746	0.1156	0.9081
Employees of Modjo/Kaliti port and terminals will be consistently courteous with customers.	236	-0.0211864	-0.3009	0.7637
Employees of Modjo/Kaliti port and terminals will have the knowledge to answer customers' questions.	240	-0.0125	-0.1726	0.8631

The result in Table4.10 above showed that the gap between expectation and perception with respect to assuring customers with respect to delivering quality service is statistically insignificant. The behavior of port employees in instilling confidence in customers was perceived to be no different from what was expected. With respect to making customers feel safe in their transaction with port employees, customers sensed a level of safety equivalent to their expectations. Port employees were also found to be as courteous as customers expected them to be. Employees of the dry ports were also found to be as knowledgeable in answering customer questions as customers expected them to be.

Table4.11. Mean comparison of Perception and Expectation of customers for Empathy dimension

Indicator	Obs.	(Expec - Perc)	t statistic	P-Value
Modjo/Kaliti port and terminals will give customers individual attention.	237	-0.0253165	-0.3645	0.7158
Modjo/Kaliti port and terminals will have operating hours convenient to all their customers.	235	-0.0638298	-0.9282	0.3543
Modjo/Kaliti port and terminals will have employees who give customers personal service.	239	-0.0209205	-0.352	0.7251
Modjo/Kaliti port and terminals will have their customers' best interest at heart.	240	-0.0958333	-1.5446	0.1238
The employees of Modjo/Kaliti port and terminals will understand the specific needs of their customers.	243	-0.0164609	-0.2361	0.8136

Table 4.11 indicates that the dry ports and terminals were found to be as empathic as customers expected them to be as the gap between expectation and perception was statistically insignificant for all five statements describing empathy. The perceived level of individual attention given was

as expected. The scheduling of operating hours of the dry ports also did not beat the expectation of customers. With respect to provision of personalized service provision to customers, again expectations of customers matched their low expectations. In respect to whether the ports have customers' best interests at heart, customers' perceptions ended up being no different from their expectations. The perceived low level of employees' understanding of specific needs of customers was found to be no different from what customers expected it to be.

For the purpose of comparing the two dry ports, the above analyses were further broken down by the two dry port terminals. The results obtained for the statistical significance of the gap score vis-a-vis is given in the following five tables for each of the five service quality dimensions.

Table4.12. Mean comparison of Perception and Expectation of customers by dry port and terminal in terms of tangibility

Indicator	**Kaliti**				**Modjo**			
	Obs.	(Expec - Perc)	t statistic	P-Value	Obs.	(Expec - Perc)	t statistic	P-Value
Modjo/Kaliti port and terminals will have modern looking equipment.	49	0.510	3.087	0.003	200	0.040	0.536	0.593
The physical facilities at Modjo/Kaliti port and terminals will be visually appealing.	49	0.469	2.984	0.005	198	0.116	1.512	0.132
Employees at Modjo/Kaliti port and terminals will be neat in their appearance.	50	0.360	2.078	0.043	192	-0.036	-0.464	0.643
The physical environment ofModjo/Kaliti port and terminals shall be clean.	48	0.563	3.069	0.004	197	-0.162	-1.847	0.066

Table 4.12 shows that gaps scores are statistically insignificant for Modjo while it is statistically significant for Kaliti with respect to customers' evaluation of tangibles. Specifically, at Kaliti dry port and terminal, customers perceived a level of service below their expectations in terms of tangibility. A gap score of 0.510 was obtained for the modern look of equipment in the Kaliti dry port which means expectation scores exceeded perception of customers by 0.51 score points. This result, coupled with the already low mean score for perceived service quality, shows that service quality is very poor in Kaliti. Perceived visual appeal of the physical facilities at Kaliti .469 points lower than what customers expected them to be. Perceived cleanliness of employees and of the compound was found to be 0.360 and 0.563 points below customers' expectations respectively.

Table4.13. Mean comparison of Perception and Expectation of customers by dry port and terminal in terms of reliability

Indicator	Kaliti				Modjo			
	Obs	(Expec - Perc)	t statistic	P-Value	Obs.	(Expec - Perc)	t statistic	P-Value
When Modjo/Kaliti port and terminals promise to do something by a certain time, they do.	47	0.574	2.959	0.005	191	-0.089	-0.949	0.344
When a customer has a problemModjo/Kaliti port and terminals will show a sincere interest in solving it.	49	0.286	1.852	0.070	193	-0.104	1.201	0.231
Modjo/Kaliti port and terminals will perform the service right the first time.	48	0.313	2.282	0.027	192	-0.104	-1.133	0.259
Modjo/Kaliti port and terminals will provide the service at the time they promise to do so.	48	0.375	2.488	0.016	196	-0.061	-0.719	0.473
Modjo/Kaliti port and terminals will insist on error free records.	47	0.447	2.786	0.008	186	-0.204	-2.305	0.022

According to Tabe4.13, the study found that expectations of customers significantly exceeded perceived quality at Kaliti for four of the five indicator statements measuring the reliability of services provided at the dry port and terminal while only one of the five indicator statements measuring reliability was found to have a statistically significant difference between what customers expect and actually perceive for modjo.

Concerning keeping deadlines, performing the service right the first time it is requested, keeping service delivery promises in time and offering error free records, a statistically significant gap score of 0.574, 0.313, 0.375 and 0.447 was obtained indicating customers' expectations exceeded their perceptions about Kaliti's port services in these categories. An important comparison that is worth mentioning about them two dry ports and terminals is that, with respect to provision of error free records, expectations significantly exceed perceptions for Kaliti (0.447) while the opposite is true for Modjo (-0.204). This is perhaps due to the electronic and networked records administration operational in Modjo. As a result, the Modjo maintained comparatively less erroneous records. It should, however, be clear from the mean score comparisons discussed in the previous section that despite this difference, a lot needs to be done to improve service quality in both dry ports and terminals as the mean scores for expectations and perceptions are at only marginally above 3 or even below.

Table4.14. Mean comparison of Perception and Expectation of customers by dry port and terminal in terms of responsiveness

Indicator	Kaliti				Modjo			
	Obs.	(Expec - Perc)	t statistic	P-Value	Obs.	(Expec - Perc)	t statistic	P-Value
Employees of Modjo/Kaliti port and terminals will tell customers exactly when services will be performed.	41	0.244	1.881	0.067	193	-0.171	-1.935	0.055
Employees of Modjo/Kaliti port and terminals will give prompt service to customers.	46	0.391	2.029	0.048	196	-0.245	-3.027	0.003
Employees of Modjo/Kaliti port and terminals will always be willing to help customers.	48	0.479	3.513	0.001	192	-0.260	-3.240	0.001
Employees of Modjo/Kaliti port and terminals will never be too busy to respond to customers' requests.	48	0.625	4.319	0.000	195	-0.108	-1.339	0.182

Table 4.14 revealed that the mean there is a statistically significant difference between expectation of customers and perceived port service quality at Kaliti for three of the four indicators used to gauge responsiveness while two of the four indicators returned a statistically significant gaps score results for Modjo.

Expectations exceeded perceived port service quality significantly by 0.39, 0.479 and 0.625 points respectively with respect to providing prompt services, willingness to help customers and never being busy to respond to customers' requests. On the contrary, concerning prompt service provision to customers and willingness to help customers Modjo exceeded customers' expectations by -0.245 and -0.260 points respectively.

Table4.15. Mean comparison of Perception and Expectation of customers by dry port and terminal in terms of assurance dimension

Indicator	Kaliti				Modjo			
	Obs.	(Expec - Perc)	t statistic	P-Value	Obs.	(Expec - Perc)	t statistic	P-Value
The behaviour of employees in Modjo/Kaliti port and terminals will instil confidence in customers	47	0.426	2.871	0.006	193	-0.062	-0.741	0.460
Customers shall be able to feel safe in their transactions with employees' ofModjo/Kaliti port and terminals.	47	0.574	3.074	0.004	189	-0.132	-1.747	0.082
Employees of Modjo/Kaliti port and terminals will be consistently courteous with customers.	46	0.435	2.709	0.010	190	-0.132	-1.722	0.087
Employees of Modjo/Kaliti port and terminals will have the knowledge to answer customers' questions.	47	0.553	3.449	0.001	193	-0.150	-1.921	0.056

The results in Table4.15 clearly indicate that across all four indicators Kaliti failed to meet customers' expectations and Modjo consistently exceed their expectations. Thus, this result indicates that Modjo has built a better level of assurance with its customers compared to Kaliti.

Specifically, with respect to instilling confidence, creating a feeling of safety during transactions with port personnel, being courteous, and being knowledgeable to answer customers' questions, Kaliti scored 0.426, 0.574, 0.435 and 0.553 respectively while Modjo scored -0.062, -0.132, -0.132 and -0.150 respectively. Note all gap scores are statistically significant. These results indicated that, again Modjo exceeded Kaliti in terms of communicating assurance to customers. However, one should not miss the point that there is room for improvement in Modjo as the mean scores of perceived assurance of the service provided is still marginally above 3.

Table4.16. Mean comparison of Perception and Expectation of customers by dry port and terminal in terms of empathy dimension

Indicator	**Kaliti**				**Modjo**			
	Obs.	(Expec - Perc)	t statistic	P-Value	Obs.	(Expec - Perc)	t statistic	P-Value
Modjo/Kaliti port and terminals will give customers individual attention.	46	0.413	2.328	0.025	191	-0.131	-1.791	0.075
Modjo/Kaliti port and terminals will have operating hours convenient to all their ustomers.	47	0.191	1.177	0.246	188	-0.128	-1.697	0.091
Modjo/Kaliti port and terminals will have employees who give customers personal service.	46	0.413	3.264	0.002	193	-0.124	-1.910	0.058
Modjo/Kaliti port and terminals will have their customers' best interest at heart.	48	0.250	1.496	0.141	192	-0.182	-2.844	0.005
The employees of Modjo/Kaliti port and terminals will understand the specific needs of their customers.	48	0.354	1.917	0.061	195	-0.108	-1.478	0.141

Table 4.16 shows that there is a mixed result with respect to providing service that is empathic. Two of the five indicators showed that expectations significantly exceed perceptions at Kaliti statistically significantly while just one indicator was found to be statistically significant for Modjo. All other indicators returned insignificant differences between expectations and perceptions. With respect to giving customers individual attention and giving personal service, a statistically significant gap score of 0.413 and 0.413 was obtained respectively for Kaliti showing expectations exceeded perception in these two indicators. Modjo significantly exceeded customers' expectation by a score of 0.182 indicating that the dry port worked keeping customers' best interest at heart in comparison to Kaliti. Again despite these significant results, the level of services provided by both ports can be improved by addressing issues that relate to

customers' expectations and perceptions. Disaggregating the mean comparison between perception and expectation, the two dry ports and terminals produced quite interesting results.

The Table 4.12 to Table 4.16 shows that there is a marked difference in service quality between the two dry ports. First, the perceived service quality of Modjo dry port and terminal exceeds the expectation of its customers by a statistically significant margin for only four of the twenty-two indicator statements, though the margin is very small. Second, customers' expectation about the service quality of Kaliti dry port and terminal exceeds its perceived service quality by a statistically significant margin, though the margin is very small. Disaggregating this further by the five SERVQUAL dimensions, the expectations exceed perceptions significantly in terms of tangibility, reliability, responsiveness and assurance for Kaliti dry port and terminal services. Though the result is not strong; empathy dimension also out of its five indicators two of the statements returning statistically significant negative difference between perception and expectation. What these results shows perceived service quality at Kaliti dry port and terminal is below customer expectation.

4.2.3. SERVQUAL Gap Score Analysis

The culmination of SERQUAL method is the analysis of Gap Score. The results obtained for the Gap Score are presented in Table 10.17. According to this result, for the tangibility dimension, service quality perception appears to be is below expectation. However, this difference is not significantly different from zero. The same situation holds for the remaining four dimensions. Therefore, there is not a difference between perception and expectation of the service quality in the dry port terminals. The aggregate gap score of 0.0055 for this study is effectively equal to zero.

Table4.17. SERVQUAL gap score aggregated by dimensions

Dimension	Average gap score for Dimension
Tangibles	-0.018
Reliability	0.006
Responsiveness	0.0297
Assurance	-0.0038
Empathy	0.0139
AGGREGATE	**0.0055289**

The gap score was further disaggregated by the two ports, Modjo and Kaliti. The result is given in According to table 10.18 these results, the Kaliti dry port and terminal has a gap score of -0.1217 indicating expectations in terms of tangible dimensions of service quality exceeded customers' perceptions in Kaliti. This result repeats itself for the remaining dimensions as well. Reliability dimension has a score of -0.0991 indicating again customer expectations exceed perceived service quality. The gap score for responsiveness, assurance and empathy dimensions are -0.0918, -0.1154, and -0.0711 respectively. These score results indicate that expectations are greater than perceptions. With respect to Modjo dry port and terminal, even though the gap scores for each of the dimensions indicate that perceived service quality exceed customers' expectations, these differences are not statistically significant as discussed in Table 4.12 to Table 4.16 In effect, this means, there is no apparent difference between perception and expectation in Modjo dry port and terminal with respect to any of the five dimensions.

These results from Table 10.18, therefore, suggest that Kaliti dry port and terminal's service quality performance is poorer than that of Modjo. Therefore, it requires greater effort to improve the service quality of Kaliti.

Table4.18. SERVQUAL Gap score disaggregated by port

Dimension	**Kaliti**					**Modjo**			
	Statement	**Expectation Score**	**Perception Score**	**Gap Score**	**Average for Dimension**	**Expectation Score**	**Perception Score**	**Gap Score**	**Average for Dimension**
Tangibles	*1*	*2.6909*	*2.2041*	*-0.4868*	*-0.1217*	*3.4789*	*3.5000*	*0.0211*	*0.0053*
	2	*2.7091*	*2.2653*	*-0.4438*		*3.2864*	*3.2576*	*-0.0288*	
	3	*2.9455*	*2.6200*	*-0.3255*		*3.5171*	*3.5561*	*0.0390*	
	4	*2.6364*	*2.0417*	*-0.5947*		*3.4206*	*3.6599*	*0.2393*	
Reliability	*5*	*2.7037*	*2.2083*	*-0.4954*	*-0.0991*	*3.1827*	*3.3316*	*0.1489*	*0.0298*
	6	*2.7091*	*2.3673*	*-0.3417*		*3.1286*	*3.2577*	*0.1292*	
	7	*2.3774*	*2.1020*	*-0.2753*		*3.0526*	*3.2228*	*0.1702*	
	8	*2.6481*	*2.2917*	*-0.3565*		*2.9953*	*3.1574*	*0.1621*	
	9	*2.5000*	*2.0851*	*-0.4149*		*2.8578*	*3.1237*	*0.2658*	
Responsiveness	*10*	*2.6170*	*2.2500*	*-0.3670*	*-0.0918*	*2.9811*	*3.2124*	*0.2313*	*0.0578*
	11	*2.5962*	*2.2128*	*-0.3834*		*2.9906*	*3.2995*	*0.3089*	
	12	*2.6923*	*2.2400*	*-0.4523*		*3.1090*	*3.4352*	*0.3262*	
	13	*3.0192*	*2.4000*	*-0.6192*		*3.2264*	*3.4061*	*0.1797*	
Assurance	*14*	*2.6863*	*2.2245*	*-0.4618*	*-0.1154*	*3.0948*	*3.1949*	*0.1001*	*0.0250*
	15	*2.9412*	*2.3878*	*-0.5534*		*3.1770*	*3.3698*	*0.1928*	
	16	*2.7843*	*2.4167*	*-0.3676*		*3.2077*	*3.3731*	*0.1653*	
	17	*2.8868*	*2.3958*	*-0.4910*		*3.2823*	*3.4923*	*0.2100*	
Empathy	*18*	*2.7600*	*2.4043*	*-0.3557*	*-0.0711*	*3.1845*	*3.3575*	*0.1730*	*0.0346*
	19	*2.8431*	*2.8000*	*-0.0431*		*3.2961*	*3.4607*	*0.1646*	
	20	*2.7308*	*2.4375*	*-0.2933*		*3.3190*	*3.4742*	*0.1552*	
	21	*2.4906*	*2.3061*	*-0.1844*		*3.0957*	*3.3368*	*0.2411*	
	22	*2.8113*	*2.4490*	*-0.3623*		*3.1422*	*3.3128*	*0.1706*	
AGGREGATE SCORE					***-0.0998***				***0.0305***

4.2.4. Pairwise Correlation of Service Quality Dimensions

The Bivariate Correlations procedures computes the pairwise associations for a set of variables and displays the results in a matrix. It is useful for determining the strength and direction of the association between two scale or ordinal Bivariate Correlations. A Pearson correlation matrix indicates the direction, strength, and significance of the bivariate relationships of all the variables in the study. The relationship between two variables with a single number that falls between -1 and +1. If the correlation coefficient falls between 0.1 to 0.29, it is weak or small; 0.3 to 0.49 is moderate; and > 0.5 to 1.0 is strong or large relationship between variables. Hence forth, in this study Bivariate Pearson Coefficient (r) was used to examine the relationship between the five SERVQUAL dimensions by using a two-tailed test of statistical significance at the level of 95% significance, P< 0.05.

Table4.19. Pairwise correlation matrix of service quality dimensions

Dimension	Tangibility	Reliability	Responsiveness	Assurance	Empathy
Tangibility	1				
Reliability	0.6702**	1			
Responsiveness	0.4988**	0.5898**	1		
Assurance	0.5194**	0.5508**	0.7323**	1	
Empathy	0.4131**	0.4606**	0.6248**	0.7005**	1

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

As revealed in Table 4.19 below, there is a strong and statistically significant pair wise correlation among the five dimensions of service quality. Responsiveness has a strong positive relationship with assurance and it is statistically significant with a confidence of 99%. This is displayed in the table as (r=.7323, p <0.01) which actually means there is a true or significant correlation between the two variables as (r>5) only with a 1% (P<0.01). Assurance dimension also shows a positive and strong relationship with empathy with the result of (r=.7005, p <0.01). This result implied the two variables are strongly related with a confidence of 99%. The third positively and strongly correlated dimensions are tangibility and reliability with the value of (r=.6702, p <0.01). There is also a positive and strong significant relationship between Responsiveness and empathy (r=.6248, p <0.01).

Table4.20. Pairwise correlation matrix of service quality dimensions by port

Port	Dimensions	Tangibility	Reliability	Responsiveness	Assurance	Empathy
Kaliti	*Tangibility*	1				
	Reliability	0.7182**	1			
	Responsiveness	0.5504**	0.6066**	1		
	Assurance	0.7031**	0.6908**	0.686**	1	
	Empathy	0.5041**	0.5515**	0.6313**	0.6471**	1
Modjo	*Tangibility*	1				
	Reliability	0.6371**	1			
	Responsiveness	0.4709**	0.5781**	1		
	Assurance	0.4274**	0.4751**	0.7245**	1	
	Empathy	0.3485**	0.4095**	0.6139**	0.6926**	1

The study disaggregated this result for Modjo and Kaliti ports. The disaggregation does not reveal a different picture. In both dry ports and terminals there is a strong, positive and significant correlation among the five port service quality dimensions. This is indicated in Table4.20. As what this means is that improving one dimension will have a compounding effect because this effect will transmit itself to the other service dimensions.

Summary of Qualitative Responses

The research has used qualitative response questions to help understand the qualitative dimension of the quantitative data that has been analysed in the previous subsections of this results and discussion. The responses are summarized as strengths and weaknesses of the two dry port terminals.

Strengths	Weaknesses
Modjo	
✓ *As it is a new port, it renders a good service* ✓ *It has good machinery, warehouse, checking place and suitable working area* ✓ *In Modjo terminal, container clearing is quick* ✓ *The ports give online service and work up to 10 pm* ✓ *The port has good security and follow-up for goods* ✓ *The port has strong interest for improving the working conditions into modernized way* ✓ *It has cooperative and responsible management and employment handling is also good* ✓ *It saves foreign currency that could have been charged at Djibouti port* ✓ *The port quickly prepares containers for checking*	✓ *Lack of skilled manpower and machinery like fork lift, crane and generators, gate door, containers and offices* ✓ *Don't provide on time information as a result customer pay more storage cost* ✓ *Lack of coordination between the dry port and customs* ✓ *Lack of clearness of warehouse tariff (gimit) and network problem* ✓ *Poor networking system* ✓ *They have long and boring working process* ✓ *Lack of employees interest and fairness to serve the customers quickly since they are corrupted and unethical* ✓ *The employee of the port doesn't respect the working time* ✓ *Containers are not quickly ready the for the next shipment* ✓ *Lack of quick response for customer compliant* ✓ *Waiting long time to pay taxes and related costs* ✓ *No enough space for parking for customers vehicle* ✓ *The problem of time management* ✓ *The employees are not willing to take responsibility and give decision.* ✓ *Delay of goods transfer from Djibouti to Modjo port due to lack of freight transportation of the port* ✓ *The absence of one window service* ✓ *Lack of enough reception space for customers service and suitable toilet* ✓ *Lack of banking service in the port*
✓ **Kaliti**	
✓ *The location of the port is one of the good parts* ✓ *The containers are timely prepared for checking* ✓ *Good time management* ✓ *It prepares container timely* ✓ *The straggle of the organization is good for giving quality service and fulfilling machineries* ✓ *Save the foreign currency that pay for storage at Djibouti ports*	✓ *There is a problem in loading and unloading process in this port* ✓ *Shortage of container putting place, warehouse and machineries like fork lift, crane, generators* ✓ *Daily laborers' problems: most of them have ethical problem and not interesting for work without money they are corrupted* ✓ *There is no one window service* ✓ *warehouse is not suitable for checking because the place is unclean* ✓ *Employee's ethical problems, and lack of interest for work* ✓ *Network problems* ✓ *When the machine is unworked the organization is not respond quickly* ✓ *Shortage of working time and also the employees are not properly use their working time* ✓ *Asked to pay more money for less quality warehouse service and also so money problems to pay warehouse rent* ✓ *Lack of skilled and committed employees and the customer is not served quickly* ✓ *There is not suitable office for work because the checking place and the office are so far* ✓ *By different reason the goods stay for long period of time in the port* ✓ *The organization not give full and timely information when the goods are arrived at the port* ✓ *Lack of clearness on warehouse service* ✓ *Absence of fairness service* ✓ *The Containers are not timely ready for the next shipment*

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1. Summary of Major Findings

This study is conducted on two of the dry ports and terminals in Ethiopia assessing the quality of service they provide. Data is collected from service users which included transistors, importers /exporters and drivers. These were mainly male with a certificate or diploma level education are frequent users of the services of the two dry ports and terminals.

A comparative study of the service quality of the two dry ports revealed important results. First, the study revealed that service quality of both dry ports and terminals is low in terms of both perception and expectations. Moreover, the gap between these two descriptors of service quality was statistically insignificant. Therefore, the gap score was naught.

Further disaggregation of these results by the two terminals revealed that expectation exceeded perceived service quality significantly in Kaliti dry port and terminal while the SERVQUAL gap score remained insignificant for Modjo. These results imply that the service quality of Kaliti is worse than Modjo.

Reducing the SERVQUAL gap to meet exceeding customer expectations, as with standard service quality studies is not what this research has found. Rather, the findings discussed in the results and discussion section of this report indicates that the problem that these dry ports and terminals face is of a dual nature. First, improve the level of expectation of customers so that the expectations score which is around 3 implies that customers are not excited about the quality of services they will receive from the dry ports. Secondly, this lack of excitement is met with either with equal level (the case with Modjo) or an even lower level of perceived quality of services (the case for Kaliti dry port and terminal).

5.2. Conclusion

According to the results obtained from the analyses, the following conclusions can be made about service quality of the two dry ports and terminals sampled as a case study.

In terms of tangibles

- There was a low mean score of both expected quality of service and perceived service provided both at aggregate and individually for each of the two dry ports Modjo and Kaliti
- The gap score showed that there is no statistically significant difference between customer expectations and perceived service quality at aggregate level. However, when analyzed at port level, expectations exceed perceptions for the majority of SERVQUAL tangibility indicators in kaliti while there is no difference between perceptions and expectations in Modjo.

In terms of reliability

- There was a low mean score for both expected quality of service and perceived service provided both at aggregate and individually for each of the two dry ports Modjo and Kaliti
- The gap score showed that there is no statistically significant difference between customer expectations and perceived service quality at aggregate level. However, when analyzed at port level, expectations exceed perceptions for the majority of SERVQUAL reliability indicators in kaliti while there is no difference between perceptions and expectations in Modjo.

In terms of responsiveness dimension

- There is a low mean score of both expected quality of service and perceived service provided both at aggregate and individually for each of the two dry ports Modjo and Kaliti
- The gap score is shows that there is no statistically significant difference between customer expectations and perceived service quality at aggregate level. However, when analyzed at port level, expectations exceed perceptions for the majority of SERVQUAL

responsiveness indicators in kaliti while there is no difference between perceptions and expectations in Modjo.

In terms of assurance dimension

- There is a low mean score of both expected quality of service and perceived service provided both at aggregate and individually for each of the two dry ports Modjo and Kaliti
- The gap score is shows that there is no statistically significant difference between customer expectations and perceived service quality at aggregate level. However, when analyzed at port level, expectations exceed perceptions for the majority of SERVQUAL assurance indicators in kaliti while there is no difference between perceptions and expectations in Modjo.

In terms of empathy dimension

- There is a low mean score of both expected quality of service and perceived service provided both at aggregate and individually for each of the two dry ports Modjo and Kaliti
- The gap score is shows that there is a mixed result on how different are expectations from perception.

In addition to these important results, a pairwise correlation of the five dimensions of service quality revealed that there is a positive and statistically significant correlation among them implying that improving one dimension will result in improvement of the other four.

5.3. Recommendation

To improve the poor service quality performance result obtained by this study, the following recommendations are made.

To improve expected service quality:

- Advertising the services that the dry ports and terminals provide through flyers posters and other appropriate means will help feed information about what to expect from the terminal port service.

To improve perceived service quality:

- The dry ports and terminals have to improve the integration of their work with the customs authorities and related organizations.
- The dry ports and terminals have to improve their physical infrastructure especially in kaliti. This includes paving asphalt roads, equipping the ports with modern machinery, safe and secure storage facilities and suitable office.
- Recruiting able, willing and helpful employees in the two dry ports and terminals. The organization prepare work related training for both newly hired and existing employees, and all the necessary experience sharing program.
- The organization give a special attention to solve the problem that related IT issue, Information exchange and display on matters that are important to making the services of the dry ports and terminals. This includes installation of display terminals and network based document processing are more supported by modern and fast networking system.

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ANNEX

Annex I. SERVQUAL questions summary by sex

	Variable	Male						Female					
		Obs		Mean		Std. Dev.		Obs		Mean		Std. Dev.	
		Expec.	Perc.	Expec.	Perc.	Expec.	Perc.	Expec.	Perc.	Expec.	Perc.	Expec.	Perc.
Tangibility	Statement # 1	238	223	3.324	3.242	1.372	1.334	27	24	3.370	3.292	1.245	1.654
	Statement # 2	238	220	3.168	3.059	1.340	1.283	27	25	3.222	3.040	1.368	1.620
	Statement # 3	230	219	3.461	3.416	1.256	1.191	27	25	2.852	2.920	1.406	1.605
	Statement # 4	239	218	3.297	3.372	1.375	1.314	27	25	3.074	3.000	1.466	1.756
	Statement # 5	233	216	3.129	3.125	1.352	1.315	26	24	2.846	3.042	1.317	1.654
Reliability	Statement # 6	237	218	3.030	3.092	1.367	1.324	25	23	2.920	2.783	1.222	1.347
	Statement # 7	232	215	2.935	3.014	1.323	1.292	27	25	2.704	2.800	1.235	1.528
	Statement # 8	235	218	2.928	2.995	1.274	1.257	27	25	2.852	2.840	1.064	1.313
	Statement # 9	228	207	2.833	2.957	1.307	1.228	27	24	2.333	2.500	1.240	1.445
Responsiveness	Statement # 10	230	210	2.935	3.029	1.219	1.256	26	25	2.692	3.000	1.350	1.443
	Statement # 11	235	217	2.932	3.092	1.373	1.291	27	25	2.741	3.160	1.375	1.463
	Statement # 12	233	216	3.056	3.208	1.280	1.212	27	25	2.741	3.040	1.375	1.399
	Statement # 13	234	220	3.201	3.218	1.207	1.169	27	25	3.074	3.080	1.299	1.352
	Statement # 14	232	217	3.043	3.028	1.275	1.202	27	25	2.778	2.840	1.476	1.344
Assurance	Statement # 15	231	214	3.147	3.154	1.324	1.285	26	25	3.077	3.360	1.412	1.287
	Statement # 16	228	214	3.154	3.192	1.300	1.254	27	25	2.815	3.040	1.360	1.457
	Statement # 17	233	218	3.236	3.307	1.196	1.230	26	23	2.846	3.000	1.434	1.206
	Statement # 18	227	214	3.128	3.187	1.254	1.184	27	25	2.926	3.040	1.357	1.338
Empathy	Statement # 19	227	214	3.242	3.369	1.293	1.256	27	25	3.000	3.040	1.414	1.338
	Statement # 20	233	215	3.253	3.307	1.242	1.135	26	25	2.769	3.040	1.243	1.274
	Statement # 21	232	215	3.000	3.153	1.313	1.160	27	25	2.667	2.920	1.519	1.352
	Statement # 22	234	217	3.098	3.184	1.302	1.218	27	25	2.852	2.760	1.406	1.165

ANNEX II: SERVQUAL questions summary by qualification

	Variable	*Kaliti*						*Modjo*					
		Obs		Mean		Std. Dev.		Obs		Mean		Std. Dev.	
		Expec.	Perc.	Expec.	Perc.	Expec.	Perc.	Expec.	Perc.	Expec.	Perc.	Expec.	Perc.
Tangibility	Statement # 1	55	49	2.691	2.204	1.386	1.118	213	200	3.479	3.500	1.305	1.292
	Statement # 2	55	49	2.709	2.265	1.436	1.204	213	198	3.286	3.258	1.291	1.266
	Statement # 3	55	50	2.945	2.620	1.325	1.292	205	196	3.517	3.556	1.247	1.156
	Statement # 4	55	48	2.636	2.042	1.419	1.129	214	197	3.421	3.660	1.339	1.225
	Statement # 5	54	48	2.704	2.208	1.238	1.031	208	193	3.183	3.332	1.364	1.332
Reliability	Statement # 6	55	49	2.709	2.367	1.315	1.093	210	194	3.129	3.258	1.362	1.329
	Statement # 7	53	49	2.377	2.102	1.180	1.065	209	193	3.053	3.223	1.320	1.274
	Statement # 8	54	48	2.648	2.292	1.084	0.967	211	197	2.995	3.157	1.285	1.270
	Statement # 9	54	47	2.500	2.085	1.299	0.996	204	186	2.858	3.124	1.303	1.235
Responsibilit	Statement # 10	47	44	2.617	2.250	1.243	1.037	212	193	2.981	3.212	1.224	1.259
	Statement # 11	52	47	2.596	2.213	1.302	1.141	213	197	2.991	3.299	1.374	1.260
	Statement # 12	52	50	2.692	2.240	1.164	1.001	211	193	3.109	3.435	1.307	1.176
	Statement # 13	52	50	3.019	2.400	1.213	0.926	212	197	3.226	3.406	1.210	1.173
Assurance	Statement # 14	51	49	2.686	2.224	1.241	1.046	211	195	3.095	3.195	1.291	1.181
	Statement # 15	51	49	2.941	2.388	1.318	1.151	209	192	3.177	3.370	1.327	1.238
	Statement # 16	51	48	2.784	2.417	1.238	1.127	207	193	3.208	3.373	1.311	1.240
	Statement # 17	53	48	2.887	2.396	1.235	1.106	209	195	3.282	3.492	1.214	1.173
	Statement # 18	50	47	2.760	2.404	1.222	1.136	206	193	3.184	3.358	1.259	1.137
Empathy	Statement # 19	51	50	2.843	2.800	1.317	1.457	206	191	3.296	3.461	1.286	1.182
	Statement # 20	52	48	2.731	2.438	1.173	1.050	210	194	3.319	3.474	1.237	1.088
	Statement # 21	53	49	2.491	2.306	1.280	1.025	209	193	3.096	3.337	1.327	1.139
	Statement # 22	53	49	2.811	2.449	1.345	1.174	211	195	3.142	3.313	1.298	1.180

ANNEX III. SERVQUAL questions summary by occupation

	Variable	*Importer*						*Transitor*						*Driver*					
		Obs		Mean		Std. Dev.		Obs		Mean		Std. Dev.		Obs		Mean		Std. Dev.	
		Expec.	Perc.	Expec.	Perc.	Expec.	Perc.	Expec.	Perc.	Expec.	Perc.	Expec.	Perc.	Expec.	Perc.	Expec.	Perc.	Expec.	Perc.
Tangibility	Statement # 1	42	41	3.333	3.293	1.203	1.230	188	175	3.420	3.331	1.332	1.336	27	25	3.000	2.920	1.617	1.631
	Statement # 2	42	41	3.000	3.146	1.189	1.276	188	174	3.303	3.092	1.308	1.269	27	24	2.963	2.958	1.605	1.654
	Statement # 3	42	41	3.452	3.317	1.087	1.128	186	174	3.409	3.374	1.258	1.228	22	23	3.409	3.522	1.764	1.534
	Statement # 4	42	41	3.071	3.195	1.197	1.030	188	173	3.351	3.399	1.377	1.392	28	24	3.143	3.208	1.627	1.615
	Statement # 5	42	41	2.976	2.878	1.179	1.122	185	173	3.211	3.260	1.291	1.345	25	20	2.600	2.450	1.893	1.731
Reliability	Statement # 6	42	41	3.048	3.073	1.306	1.330	185	171	3.119	3.140	1.305	1.312	27	23	2.593	2.739	1.670	1.544
	Statement # 7	42	41	2.833	2.780	1.188	1.013	182	170	2.978	3.059	1.287	1.335	27	23	2.889	3.043	1.649	1.581
	Statement # 8	42	41	2.881	2.756	1.253	1.090	185	172	3.011	3.110	1.225	1.249	27	24	2.556	2.708	1.450	1.546
	Statement # 9	41	39	2.610	2.667	1.321	1.132	181	165	2.862	2.982	1.260	1.232	25	21	2.600	3.095	1.607	1.513
Responsiveness	Statement # 10	42	41	2.833	2.927	1.146	1.170	180	168	2.978	3.083	1.186	1.230	26	20	2.615	3.100	1.651	1.744
	Statement # 11	42	40	2.762	2.925	1.303	1.269	185	171	2.984	3.170	1.308	1.265	28	24	2.714	2.917	1.823	1.742
	Statement # 12	42	40	2.810	3.075	1.292	1.118	184	173	3.076	3.225	1.239	1.235	27	21	3.111	3.238	1.672	1.578
	Statement # 13	42	40	2.929	3.025	1.218	0.974	184	174	3.234	3.218	1.185	1.206	28	24	3.250	3.375	1.506	1.469
	Statement # 14	42	40	2.881	2.925	1.152	1.023	184	171	3.098	3.041	1.277	1.214	27	24	2.741	2.833	1.631	1.606
Assurance	Statement # 15	42	40	2.667	2.750	1.223	1.171	182	170	3.264	3.247	1.264	1.239	26	22	3.154	3.455	1.759	1.654
	Statement # 16	39	40	3.026	3.025	1.246	1.074	183	170	3.109	3.171	1.266	1.283	26	22	3.231	3.318	1.704	1.644
	Statement # 17	40	41	3.100	3.098	1.236	1.221	186	170	3.172	3.276	1.214	1.231	26	23	3.692	3.652	1.192	1.265
Empathy	Statement # 18	40	39	3.125	3.077	1.042	0.929	181	170	3.088	3.171	1.271	1.226	26	23	3.346	3.348	1.522	1.434
	Statement # 19	40	40	2.950	3.175	1.154	1.083	181	169	3.287	3.373	1.272	1.271	26	23	3.000	3.348	1.697	1.555
	Statement # 20	41	39	3.024	3.051	1.151	1.050	185	172	3.243	3.349	1.229	1.127	26	22	3.115	3.318	1.479	1.393
	Statement # 21	41	40	2.951	3.050	1.182	1.011	185	171	3.005	3.152	1.308	1.153	26	22	3.038	3.227	1.685	1.660
	Statement # 22	40	40	3.025	3.150	1.025	1.001	187	173	3.139	3.145	1.304	1.194	27	22	2.926	3.182	1.708	1.680

ANNEX IV. SERVQUAL questions summary by number of times served at a dry ports and terminal

	Variable	*Once*						*Twice*						*Three times or more*					
		Obs		**Mean**		**Std. Dev.**		**Obs**		**Mean**		**Std. Dev.**		**Obs**		**Mean**		**Std. Dev.**	
		Expec.	**Perc.**	**Expec.**	**Perc.**	**Expec.**	**Perc.**	**Expec.**	**Perc.**	**Expec.**	**Perc.**	**Expec.**	**Perc.**	**Expec.**	**Perc.**	**Expec.**	**Perc.**	**Expec.**	**Perc.**
Tangibility	Statement # 1	10	7	2.600	2.429	1.174	1.134	9	7	2.444	2.571	1.509	1.272	246	233	3.382	3.283	1.340	1.360
	Statement # 2	10	7	2.700	2.429	1.567	1.397	9	6	2.000	1.833	0.866	0.983	246	232	3.244	3.112	1.327	1.294
	Statement # 3	10	7	2.600	3.143	1.647	1.215	8	7	2.375	2.429	0.916	1.397	239	229	3.444	3.380	1.252	1.225
	Statement # 4	10	6	2.500	3.333	1.354	1.366	9	7	2.333	2.429	1.000	1.397	247	230	3.320	3.357	1.379	1.359
	Statement # 5	10	6	2.900	2.167	1.449	0.753	8	7	2.625	2.857	1.302	1.069	241	226	3.129	3.159	1.343	1.357
Reliability	Statement # 6	10	7	3.000	2.714	1.826	1.254	9	7	2.667	2.857	1.225	1.069	243	227	3.066	3.097	1.338	1.337
	Statement # 7	10	7	2.600	2.429	1.430	0.787	9	7	2.444	2.571	1.130	1.272	240	226	2.967	3.040	1.316	1.321
	Statement # 8	10	7	2.300	2.571	1.494	1.272	9	7	2.333	2.571	1.000	1.272	244	229	2.980	3.013	1.242	1.255
	Statement # 9	10	7	2.700	2.571	1.252	1.397	9	7	2.000	2.143	0.866	1.215	237	217	2.806	2.940	1.317	1.251
Responsiveness	Statement # 10	10	7	2.700	2.429	1.418	1.272	9	7	3.222	3.000	1.302	1.528	237	221	2.924	3.041	1.219	1.266
	Statement # 11	9	8	2.444	2.625	1.424	1.061	9	7	3.000	2.571	1.500	1.272	244	227	2.918	3.123	1.352	1.308
	Statement # 12	9	8	3.111	3.250	1.269	1.035	9	7	2.889	2.857	0.928	1.215	242	227	3.021	3.189	1.293	1.246
	Statement # 13	9	8	3.222	2.875	1.302	1.126	9	7	3.000	3.000	0.866	1.155	243	230	3.181	3.209	1.223	1.200
	Statement # 14	9	8	2.667	2.750	0.866	0.886	8	7	3.125	3.286	0.991	1.113	242	227	3.033	3.018	1.301	1.223
Assurance	Statement # 15	9	8	2.667	3.125	1.225	1.356	9	7	3.111	3.286	1.269	1.254	239	225	3.151	3.178	1.329	1.280
	Statement # 16	9	8	3.667	3.625	1.000	0.916	8	7	3.000	2.714	1.309	1.380	238	224	3.118	3.183	1.304	1.273
	Statement # 17	9	8	3.556	2.875	1.590	1.246	8	8	3.125	2.750	0.835	1.389	242	225	3.190	3.298	1.218	1.230
	Statement # 18	8	7	2.750	3.000	1.282	1.000	9	7	3.000	3.143	1.414	1.464	236	224	3.114	3.174	1.258	1.195
Empathy	Statement # 19	9	8	3.111	3.250	1.537	1.282	9	7	3.222	2.571	1.481	1.397	236	224	3.199	3.348	1.288	1.261
	Statement # 20	9	8	3.222	3.250	1.563	1.165	9	7	3.667	2.429	1.323	1.272	241	226	3.199	3.301	1.229	1.146
	Statement # 21	9	8	2.889	3.500	1.764	1.414	9	7	2.222	2.429	1.394	1.272	241	225	3.004	3.138	1.312	1.166
	Statement # 22	9	8	2.889	3.250	1.453	1.282	8	7	2.375	2.286	1.061	1.380	244	228	3.115	3.171	1.300	1.210

ANNEX V: the SERVQUAL questionnaire

A. the 22 Expectation Questions

Expectations This section of the survey deals with your opinions of Modjo port and terminals. Please show the extent to which you think Modjo port and terminals should possess the following features. What we are interested in here is a number that best shows you expectations about institutions offering Modjo port and terminals services.

You should rank each statement as follows:

Strongly Strongly

Disagree Agree

1 2 3 4 5

Statement	Score
1. Modjo port and terminals will have modern looking equipment.	
2. The physical facilities at Modjo port and terminals will be visually appealing.	
3. Employees at Modjo port and terminals will be neat in their appearance.	
4. The physical environment ofModjo port and terminals shall be clean.	
5. When Modjo port and terminals promise to do something by a certain time, they do.	
6. When a customer has a problemModjo port and terminals will show a sincere interest in solving it.	
7. Modjo port and terminals will perform the service right the first time.	
8. Modjo port and terminals will provide the service at the time they promise to do so.	
9. Modjo port and terminals will insist on error free records.	
10. Employees of Modjo port and terminals will tell customers exactly when services will be performed.	
11. Employees of Modjo port and terminals will give prompt service to customers.	
12. Employees of Modjo port and terminals will always be willing to help customers.	
13. Employees of Modjo port and terminals will never be too busy to respond to customers' requests.	
14. The behaviour of employees in Modjo port and terminals will instil confidence in customers	
15. Customers shall be able to feel safe in their transactions with employees ofModjo port and terminals.	
16. Employees of Modjo port and terminals will be consistently courteous with customers.	
17. Employees of Modjo port and terminals will have the knowledge to answer customers' questions.	
18. Modjo port and terminals will give customers individual attention.	
19. Modjo port and terminals will have operating hours convenient to all their customers.	
20. Modjo port and terminals will have employees who give customers personal service.	
21. Modjo port and terminals will have their customers' best interest at heart.	
22. The employees of Modjo port and terminals will understand the specific needs of their customers.	

B. The 22 Perception Questions

Perceptions The following statements relate to your feelings about the particular Modjo port and terminals you have chosen. Please show the extent to which you believe this Modjo port and terminals has the feature described in the statement. Here, we are interested in a number from 1 to 5 that shows your perceptions about the Modjo port and terminals.

You should rank each statement as follows:

Strongly Strongly

Disagree Agree

1 2 3 4 5

Statement	Score
1. Modjo port and terminals has modern looking equipment.	
2. The Modjo port and terminals physical features are visually appealing.	
3. The Modjo port and terminals employees are neat appearing.	
4. The physical environment ofModjo port and terminals shall be clean.	
5. When the Modjo port and terminals promises to do something by a certain time, it does so.	
6. When you have a problem, the Modjo port and terminals shows a sincere interest in solving it.	
7. The Modjo port and terminals performs the service right the first time.	
8. The Modjo port and terminals provides its service at the time it promises to do so.	
9. The Modjo port and terminals insists on error free records.	
10. Employees in the Modjo port and terminals tell you exactly when the services will be performed.	
11. Employees in the Modjo port and terminals give you prompt service.	
12. Employees in the Modjo port and terminals are always willing to help you.	
13. Employees in the Modjo port and terminals are never too busy to respond to your request.	
14. The behaviour of employees in the Modjo port and terminals instils confidence in you.	
15. You feel safe in your transactions with the employees of Modjo port and terminals.	
16. Employees in the Modjo port and terminals are consistently courteous with you.	
17. Employees in the Modjo port and terminals have the knowledge to answer your questions.	
18. The Modjo port and terminals gives you individual attention.	
19. The Modjo port and terminals has operating hours convenient to all its customers.	
20. The Modjo port and terminals has employees who give your personal attention.	
21. The Modjo port and terminals has your best interests at heart.	
The employees of the Modjo port and terminals understand your specific needs.	

Open Ended Questions:

1. What are the strength of Modjodry port and terminals ?

   _____

   _____

   _____

2. What are the customers' compliance in the service delivery quality of Modjo Ports and terminals?

   _____

   _____

   _____

3. What are your suggestions for future improvement of the port and terminals service delivery?

   _____

   _____

   _____

4. If you have additional suggestion please explains here?

   _____

   _____

   _____

Note: The same questioners with the same content produced for Kaliti branch.