



St. Mary's University
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Faculty of Business & Economics
Department of Marketing Management

Effects of Multimodal Transport Service Quality on
Customer Satisfaction: The Case of Ethiopian Shipping
and Logistics Services Enterprise

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ID No: SGS/0058/2011A

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Addis Ababa, Ethiopia

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STATEMENT OF DECLARATION

I declared that this thesis of MBA in Marketing Management at St. Mary's University, which was done independently with the advice and suggestions of my advisor, Temesgen Belayneh (PhD), is my original work and had not been previously submitted for a degree at this or another University and that all reference materials contained therein have been duly acknowledged.

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Table of Contents

ACKNOWLEDGEMENT	i
ACRONYMS/ABREVIATIONS	vii
ABSTRACT	viii
CHAPTER ONE	1
INTRODUCTION	1
1.1 Background of the Study.....	1
1.2 Background of the Organization	2
1.3 Statement of the Problem	5
1.4 Research Question	6
1.5 Objective of the Study.....	7
1.5.1 General Objective	7
1.5.2 Specific Objective.....	7
1.6 Significance of the Study.....	7
1.7 Scope of the Study	8
1.8 Limitation of the Study.....	8
1.9 Organization of the Study	8
CHAPTER TWO	9
REVIEW OF RELATED LITERATURE	9
2. THEORETICAL LITERATURE	9
2.1 Transportation Definition	9
2.2 Definition of Multimodal Transport.....	10
2.3 The Concept of Multimodal Transport.....	11
2.4 Multimodal Transport Service in the World	12
2.5 Multimodal Transport Service in Ethiopia	12
2.6 Service Concept	13
2.7 Quality Concept.....	14
2.8 Service Quality Concept	15
2.9 Measuring Service Quality	16
2.9.1 Customers' Expectation of Service Quality.....	16

2.9.2 Customers' Perception of Service Quality	17
2.10 Service Quality Model	17
2.11 Customer Satisfaction	17
2.12 Measuring Customer Satisfaction	18
2.13 Measurement Variables of Multimodal Transport Service Quality	19
2.13.1 Reliability & Overall Multimodal Transport Service Quality	21
2.13.2 Tangibility & Overall Multimodal Transport Service Quality	21
2.13.3 Responsiveness & Overall Multimodal Transport Service Quality	22
2.13.4 Assurance & Overall Multimodal Transport Service Quality	22
2.13.5 Empathy & Overall Multimodal Transport Service Quality	23
2.13.6 Cost & Overall Multimodal Transport Service Quality	23
2.13.7 Infrastructure & Overall Multimodal Transport Service Quality	23
2.14 Empirical Study.....	25
2.15 Conceptual Framework.....	26
2.16 Hypothesis Testing of the Study Variables.....	27
CHAPTER THREE.....	28
RESEARCH METHODOLOGY	28
3.1 Research Approach	28
3.2 Research Design	28
3.3 Data Collection Methods & Instruments	28
3.4 Population of the Study	29
3.5 Sampling Techniques & Sampling Procedure	29
3.6 Data Analysis & Presentation.....	30
3.7 Model Reliability & Validity Assumption	31
3.7.1 Reliability	31
3.7.2 Validity	32
CHAPTER FOUR.....	34
DATA PRESENTATION, ANALYSIS & INTERPRETATION	34
4.1 Respondent Background Information.....	34
4.1.1 Demographic Information of the Respondents	34
4.1.2 Work Experience of Customers	35
4.1.3 Business Type of Respondents	36

4.2 Analysis of Descriptive Statistics	36
4.2.1 Reliability Dimension of Multimodal Service Quality	37
4.2.2 Tangibility Dimension of Multimodal Service Quality	38
4.2.3 Responsiveness Dimension of Multimodal Service Quality	39
4.2.4 Assurance Dimension of Multimodal Service Quality	41
4.2.5 Empathy Dimension of Multimodal Service Quality	42
4.2.6 Cost Dimension of Multimodal Service Quality	43
4.2.7 Infrastructure Dimension of Multimodal Service Quality	44
4.3 Test of Regression Assumptions	45
4.3.1 Normality Test	45
4.3.2 Test of Linearity	46
4.3.3 Test of Multicollinearity	47
4.4 Correlation & Regression Analysis	49
4.4.1 Correlation	45
4.5 Discussion of Regression Analysis	50
4.6 Discussion on the Result of the Hypotheses Testing	52
CHAPTER FIVE	56
SUMMARY, CONCLUSION & RECOMMENDATION	56
5.1 Summary of Major Findings	56
5.2 Conclusion	57
5.3 Recommendation	57

List of Tables

Table 3.1 Test of Reliability	32
Table 4.1 Frequency & Percent of Demographic Information of the Respondent.....	34
Table 4.2 Frequency & Percent of Work Experience Information of the Respondent	35
Table 4.3 Reliability Descriptive Statistics	37
Table 4.4 Tangibility Descriptive Statistics	38
Table 4.5 Responsiveness Descriptive Statistics	40
Table 4.6 Assurance Descriptive Statistics	41
Table 4.7 Empathy Descriptive Statistics	42
Table 4.8 Cost Descriptive Statistics	43
Table 4.9 Infrastructure Descriptive Statistics	44
Table 4.10 Collinearity Statistics	48
Table 4.11 Pearson Correlations Matrix Correlations	49
Table 4.12 Multiple Regression Analysis of the Model Summary	50
Table 4.13 ANOVA	51
Table 4.14 Multiple Regression Coefficient	51

List of Figures

Figure 4.1 Analysis of Descriptive Statistics	36
Figure 4.2 Normality Test	46
Figure 4.3 Test of Linearity	47

ACRONYMS/ABBREVIATIONS

CLT	Container Lifting Trucks
EMAA	Ethiopian Maritime Affairs Authority
ESL	Ethiopian shipping lines
ESLSE	Ethiopian shipping and logistics service enterprise
etc,	Et Cetera
ICT	Information Communication Technology
i.e.	That is
LLC	Land Locked Countries
LLDCs	Land Locked Developing Countries
MMTS	Multimodal Transport Services
MT	Multimodal Transport
MTBS	Multimodal Transport Service Business
MTO	Multimodal Operator
Ph.D	Doctor of Philosophy
RORO	Roll-on/roll-off
S.C	Share Company
SERVPERF	Service Quality Performance
SERVQUAL	Service Quality
SQ	Service Quality
SAD	Single Administrative Document
SPSS	Statistical Package for Social Science
UNCTAD	United Nations Conference on Trade and Development
VIF	Variance Inflation Factor

ABSTRACT

Multimodal transport service is essential for the development of any country's economy and expected to be delivering with high quality service. Multi-modal transportation service is commonly known as combined transport of goods using at least two different means of transport from the point of receipt to the recipient's destination under a single contract. This study focused to examine the effects of multimodal transport service quality on customer satisfaction in Ethiopian Shipping and logistics Service Enterprise at head office level in Addis Ababa. There are some models to measure service quality and customer satisfaction in service providing organization. In this study, the researcher chosen SERVPERF model for discussion and analysis purpose. The model is an important model to measure customer's satisfaction relative to customer perceptions for the shipping and logistics services. The researcher modified SERVPERF model to measure multimodal customer satisfaction. To make the analysis the researcher distributed questionnaires to 355 customers of ESLSE at head office in Addis Ababa, out of these 250 (71%) respondents returned the questionnaires. This study used both descriptive and inferential statistics to carry out the research analysis. The analysis result indicated that on tangibility, responsiveness, assurance & cost dimension customers were agree level, relatively on reliability, empathy and infrastructure service quality dimension customers were disagree to the service provided by the organization. The correlation matrix indicated that customer satisfaction have positive and significant relationship with reliability, tangibility, responsiveness, assurance, empathy, cost and infrastructure dimension of multimodal transport service quality in ESLSE at the head office in Addis Ababa. Based on the findings the researcher recommended to improve reliability, empathy & infrastructure dimension of multimodal service quality dimension. ESLSE should also keep update the tangibility, responsiveness, assurance and cost dimension of multimodal service quality to satisfy their loyal customers.

Key words: *multimodal transport, service quality, customer satisfaction,*

CHAPTER ONE

INTRODUCTION

1.1. Background of the study

All businesses are established having the aim of achieving success and being profitable. The service industry is among the oldest and most diverse industries in the world. Services vary in many ways and include various stages. Philip Kotler (1997) defined service as “an action or an activity which can be offered by a party to another party, which is basically intangible and cannot affect any ownership. Service may be related to tangible product or intangible product. Service quality (SQ) is measurement of customer expectation of a service with perceived performance. Service quality (SQ) should have two important dimensions: Technical quality (i.e. what the customers receives as a result of interaction with the service firm) and Functional quality (i.e how the customer receives the service delivers by organization). The most common prominent models are SERVQUAL & SERVPERF which consists of five SQ dimensions. They are Tangibility, Reliability, Responsiveness, Empathy, and assurance (Parasuraman et al., 1985). It will be further explained under the literature review. Based on the assessment of service quality provided to the customers, business operators are able to identify problem quickly, to improve their service and better assess client expectation.

Delivering quality service is considered as an essential strategy for success & survival in today’s competitive environment (Zeithaml. Etab 1990). Service quality has widely been discussed since 20th century and its idea is still relevant to help today organizations in creating differentiation and gaining competitive advantage in an era of borderless world and globalization.

Because of growing competition in service industry, providing high level of customer satisfaction is an important element to sustain in the dynamic business environment (Midoro, 2005). Customer satisfaction is the concept that occupies a central position in marketing though and practice. Shipping firm can satisfy its customers by offering low cost or differentiated services can sustain and be profitable in the industry (Kotler and Armstrong, 2012). One way to differentiate a firm’s services from its competitors is by offering high quality service. (Dadfar and Brege, 2012)

Like any other service providing company multimodal transport service is essential for the development of any country's economy and expected to be delivered with high quality service. Multi-modal transportation service is commonly known as combined transport of goods using at least two different means of transport from the point of receipt to the recipient's destination under a single contract. The carrier is legally liable for the entire carriage process, even though it is performed by several different modes of transport by rail, sea & road. According to (UNCTAD, 1981), the concept of international multimodal transport covers the door to door movement of goods under the responsibility of a single transport operator.

Therefore, this study aims to study the effect of multimodal transport service quality on customer satisfaction the case of Ethiopian Shipping & Logistics Service Enterprise.

1.2 Background of the Organization

Before proceeding to the details the researcher let how the profile of Ethiopian Shipping & Logistics Service Enterprise seems. To maintain the commendable economic growth that has been registered in the country over the last several years, one of the strategic measures taken by the Federal Government of Ethiopia is merging the former three public enterprises that have until recently been operating separately in a rather similar and interdependent maritime sub-sectors; namely, Ethiopian Shipping Lines S.C, Maritime Transit Services Enterprise Dry Port Enterprise & Comet Transport.

This newly amalgamated enterprise came into being following the issuance of Regulation by the Council of Ministers (Regulation No. 255/2011) dated 21st November 2011, and is vested with the huge responsibility of rendering sea-transport & logistics services to the country's importers, exporters, and investors in a more effective and efficient way, by reducing transit time, cost and handoffs. It is known as a multimodal transport operator. Besides, a truck operating company named Comet Transport SC has recently been transferred to ESLSE following a government decree issued in the mid of 2014 MTBS (2013). ESLSE has its headquarters located in the heart of Addis Ababa, Ethiopia, with main branches at Djibouti & Eight dry ports namely Modjo, Kality, Mekelle, DireDawa, Kombolcha, Semera, Gelan & Woreta towns. It also has a Maritime

Training Institute at a place called Babogaya in Bishoftu formerly (Debrezeit) town ESLSE manual (2015).

The main modes of transport are sea and inland transport by using truck, but after couple of year's railway is a second option for inland transportation. ESLSE has a multitude of vessels, heavy duty trucks, sea and dry port facilities etc, which enables to render efficient sea and inland transport services. To facilitate the sea freight transport operation and the enterprise has 9 multi-purpose general cargo (container & break bulk cargo) and 2 fuel tanker vessels. The operation under inland transport is supported by 480 container carrier trucks, 3 RORO carrier trucks, 30 reach stackers, 92 forklifts, 2 cranes, 12 terminal trucker, 18 terminal chassis & 3 empty container lifting forklifts ESLSE Manual (2019). ESLSE has four sectors these are Shipping Service Sector, Freight forwarding service sector, Port and terminal service sector and Corporate services sector and the major services provided by Ethiopian Shipping and Logistics service enterprise as follows:-

Major Service Provide by Shipping Sector

Sea Transport Services: The main focus of the Shipping Sector of ESLSE is to provide Coastal and International Marine Transport services to and from Djibouti Port. Shipping service uses three business modalities namely own vessel, slot carriers and chartered vessels. Accordingly, ESLSE provides shipping service in three major trade routes: Indian & Gulf, Europe & Africa and Far East routes. In these countries service is provided on more than 309 ports. ESLSE Manual (2019)

Agency Services : ESLSE's Shipping sector branch office, at city and port of Djibouti makes prompt notification to port authorities, whenever its own ships as well as other principal ships call to port and process all due formalities. It makes all the necessary provisions available for the ships and their crew. It prepares timely notifications for importers, and facilitates seamless flow and recollection of containers at Djibouti port. ESLSE Manual (2019)

Stevedoring: ESL is one of the major stevedores in the port of Djibouti that provide efficient loading and discharging service of import and export cargoes, by making use of modern port equipment. In this case, ESL discharges various types of import cargoes from ships. It also

renders stuffing service, thus facilitating the loading of cargoes for shipment. It also avails needed containers timely and expedites the recollection of empty containers to carriers. ESLSE Manual (2019)

Shore Handling: This service includes safe storage of discharged cargoes from vessels in Djibouti Port until they have been transported to their destination in the country. ESL's Djibouti Branch offers coordinated and efficient shore handling services with its CLT (Container Lifting Trucks), trucks, truck trailers, tractors and forklifts of various capacities. Cargoes under ESL's custody are handled with care and with maximum discharging and dispatching rates. In case of bulk cargoes and other containerized goods, a quick direct delivery service is provided with minimum transit time. In this manner a number of gangs are operated in all the three shifts throughout the day ESLSE Manual (2019).

Multimodal Transport Service: Essentially, this is a door-to-door cargo service with SAD (single administrative document) from the point of origin to the point of destination. In ESL's case, the cargoes are shipped all the way from the port of their origin via Djibouti port and finally to Modjo Dry Port as well as other inland ports. Therefore, ESL as official Multimodal Operator /MTO/, takes all possible care to the cargo under its custody, as of the time the shipment is confirmed and ordered ESLSE Manual (2019).

Unimodal transport service: by contrast involves one mode of transportation, i.e., sea, rail or road, or air freight of cargo. Here services are disintegrated, with many operators and agreements involved. In ESLSE's case, the unimodal service ends at port of Djibouti, after which the consignee will choose his/her freight forwarder and/or transporter and enter agreement with to receive cargo in the hinterland of the country ESLSE Manual (2019).

Customs and Port Clearing: Introducing time saving and reliable documentation process, ESLSE accomplishes, with utmost care, port and customs formalities and enables imported/exported cargoes to arrive at appropriate destination ESLSE Manual (2019).

Trucking: ESL is equipped with modern heavy trucks with the objective of speeding up transportation of freight from Djibouti to inland ports or other designated destinations and vice versa. In this regard, ESL originally had 60 heavy duty trucks with a total lifting capacity of

2400 tons of dry cargo at a time. Its recently transferred company, Comet Transport S.C, runs around 205 heavy duty trucks of its own. With Comet now merging with ESLSE, the Enterprise's (ESLSE's) present fleet size has risen to 265. Besides, last June, ESL and Comet jointly entered into Agreement Contract with Renault Trucks for the supply of 215 brand new heavy duty trucks by early 2015. This will soon raise the land fleet capacity of ESL to 480 trucks. Apart from its own trucks, ESL sub-contracts all the necessary trucks for direct or consolidated cargo delivery from private and public transport operators ESLSE Manual (2019).

Port and Terminal Service: It is essential that all imported goods have to timely serve the purpose they are intended for. They should reach the ultimate user at the right time. However, just before the import cargoes are supplied to the desired clients, they should be safely kept and processed in the dry ports. The Port & Terminal Sector of the Enterprise is a point of destination to Ethiopia's imports and a point of consolidation for exports, where goods are loaded and unloaded; customs formalities are completed; goods are temporarily stored, stuffed and unstuffed, made ready for transport, and dispatched to their final destinations. Thus, the Enterprise endeavors to make these services more efficient and convenient to importers and exporters and play a crucial role in the logistics value chain ESLSE Manual (2019).

Currently Ethiopian Shipping & Logistics Service Enterprise capital reached to 22 billion, the enterprise has a total of 11 vessels nine of them general purpose and two of them are tanker vessels.

1.3 Statement of the Problem

With the increase of international trade, issues such as reliability, safety, security and frequency of deliveries have affected the pattern of transport practices, which increasingly reflect a demand for more integrated transport services (UNCTAD, 2003).

Arvis, Marteau, and Gaël (2010) have pointed out that land locked countries (LLC) bear higher logistics cost, compared to coastal countries. Since Ethiopia has been also landlocked country after its separation from Eritrea the same fact holds true. Multimodal transport services are crucial in order to reduce cost, and at the same time, to obtain higher service standard according to the international multimodal transport services (MMTS) practice.

Due to the rapid growth of Ethiopian economy and globalization of the world, introduction of multimodal transport system will benefit the country in many aspects. In order to fit with this trend multimodal transport system should be reliable, dependable, efficient, safe and cost effective starting from port of origin to the end of port of destination. The government has introduced the multimodal transport system, creating the possibilities for onward transportation under one single way bill to reduce transit time, transport cost and to provide single window service. ESLSE is the only dominant enterprise in Ethiopia in delivering a sea and inland transport services. However, customers complain in delay of cargo loading at origin port, delay of cargo delivery, high document discrepancy, detention/demurrage cost at Djibouti, inefficient IT system, high dwell time of cargo at dry port, lack of infrastructure and other related factors affect the quality of multimodal service of ESLSE were identified according to 2019 customer forum.

Therefore, the main interest of conducting this study was to measure the current effect of multimodal transport service quality on customer satisfaction in Ethiopian Shipping & Logistics Service Enterprise and find out whether the enterprise has met the customer satisfaction.

1.4 Research Question

The following basic research questions were raised in this study:-

1. How does the reliability of service quality affect customer satisfaction of multimodal Transport Service in case of ESLSE?
2. How does empathy affect service quality and customers satisfaction o multimodal Transport Service in case of ESLSE?
3. To what extent does responsiveness influence the customer satisfaction of multimodal Transport Service in case of ESLSE?
4. To what extent does tangibility influence the customer satisfaction of multimodal Transport Service in case of ESLSE?
5. To what extent does assurance influence the customer satisfaction of multimodal Transport Service in case of ESLSE?
6. How does cost of service affect customer satisfaction of multimodal service in the case of ESLSE?

7. How does infrastructure affect customer satisfaction of multimodal service in the case of ESLSE?

1.5 Objective of the Study

1.5.1 General Objective

The general objective of this study was to assess the effect of multimodal transport service quality on customer satisfaction in Ethiopian Shipping and logistics Service Enterprise.

1.5.2. Specific Objective

1. To determine the effect of service reliability on customer satisfaction of multimodal Transport Service in case of ESLSE.
2. To determine the effect of empathy on customer satisfaction of multimodal Transport Service in case of ESLSE.
3. To examine the effect of responsiveness on customer satisfaction of multimodal Transport Service in case of ESLSE.
4. To examine the effect of tangibility on customer satisfaction of multimodal Transport Service in case of ESLSE.
5. To examine the effect of assurance on customer satisfaction of multimodal Transport Service in case of ESLSE.
6. To determine the effect of cost on customer satisfaction of multimodal transport service in case of ESLSE.
7. To determine the effect of infrastructure on customer satisfaction of multimodal transport service in case of ESLSE.

1.6 Significant of the study

The study tried to examine the effect of multimodal transport service quality on customer satisfaction on Ethiopian shipping and logistics service enterprise. The study finding will help the organization in different ways, in order to identify the weakness and strength of the organization in customer handling and for decision making purpose the result of this study will help the top level management of the ESLSE. Multimodal transport authority will also use the

study result for policy making purpose. The study will also add new knowledge to the existing literature and it will be a stepping stone for academicians to carry out further studies on the area.

1.7 Scope of the study

Ethiopian shipping and logistics service enterprise is service Provider Company. The scope the study focused only on the effect of multimodal transport service quality on customer satisfaction on Ethiopian shipping and logistics service enterprise. The study used the five service quality dimensions and adds two variables (cost & infrastructure) to measure the customer satisfaction on multimodal transport service quality.

1.8 Limitation of the study

The study limited by time and accessibility of data and information which is related with the researcher topic. Due to resource and time constraints and remoteness of some of the dry ports that the enterprise operates, the study was solely delimited at head office and the study was examined the service quality dimensions only from customers' perspective at head office of ESLSE located in Addis Ababa. Moreover, the study was focused on the relationship between multimodal transport service quality dimension and its effect on customer satisfaction.

Therefore, geographically the research was de-limited to only customers in Addis Ababa at head office.

1.9 Organization of the Study

The research report was divided into five chapters. Chapter one was the introduction part which contains background of the study, statement of the problem, objective of the study, scope and limitation, significance of the study, and organization of the research paper. Chapter two presented a discussion on both theoretical and empirical related literature of the study based on the most recent academic literatures. Chapter three focuses on the research design and methodology that will the researcher follow in the study. In chapter four, analysis for collected data was done and the result was discussed and interpreted. In the final chapter the researcher reported findings, conclusions are summarized, recommendations are forwarded and suggestions for further research are given.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2. THEORETICAL LITERATURE REVIEW

2.1 Transportation Definition

Transportation is the movement of product materials and services from one area to another, both in bond and out bound. It can also as movement from one node of supply chain to other. Is by providing for swift and uninterrupted flow of products back and forth through the chain, transportation provides a sort of lubrication to run the chain smoothly. Transport includes all modes of transportation/like air, railway, sea and vehicles. It also permits deeper penetration of newer markets far from the point of production (Deshmukh 2004).

Therefore in order to effectively manage this transportation system the first steps would be to establish a cost effective transportation mode. In other words highest customer services in lowest price, leads to company growth.

Transportation system has a strategic bearing on a company's operation efficiency. Hence, failure to identify the best transpiration mode can directly affect the growth of a company's. Since higher transportation costs will raise prices which will directly affect the customer satisfaction in a negative way. The three factors as mentioned by to consider the following. (Gattom and Walters, 2003)

Customer, environment, product and company organization, which involves physical movement of grads, requires transport services. Which is more elaborate the researcher rising on multi-modal transportation services that varies from mode to mode. The best suitable mode required to be identified depend up on the nature of product that has to move. Like it coal or carbon has to minimize losses, time and cost factor. Therefore, in order to identify the right transportation system; Impact of the transport system on the supply chain, Factors that determine the choice of transport mode, environmental issues, type of products, company's profile, customer feedbacks, and reports should considered appropriately.

2.2 Definition of Multimodal Transport

Multimodal Transport concept can be defined as the combination of various types of transport modes used in a national or international transport operation, which provides door-to-door services, under the responsibility of one single transport operator United Nations Convention on Trade and Development (UNCTAD, 2001). The “Multimodal Transport” terminology was first coined by the (UNCTAD) on International Multimodal Transport of Goods in 1981, which authoritatively defines the term as: “... the carriage of goods by at least two different modes of transport on the basis of a multimodal transport contract from a place in one country at which the goods are taken in charge by the multimodal transport operator to a place designated for delivery situated in a different country (UNCTAD, 1981).

This definition should be read in conjunction with the definition of the term “multimodal transport operator” (MTO) provided in the MT Convention, which provides: “ *Multimodal transport operator’ means any person who on his own behalf or through another person acting on his behalf concludes a multimodal transport contract and who acts as a principal, not as an agent or on behalf of the consignor or of the carriers participating in the multimodal transport operations, and who assumes responsibility for the performance of the contract.*”

Hence, the main features of a multimodal transport are: the carriage of goods by two or more modes of transport, under one contract, one document and one responsible party (MTO) for the entire carriage, who might subcontract the performance of some, or all modes, of the carriage to other carriers. The terms “combined transport” and “intermodal transport” are often used interchangeably to describe the carriage of goods by two or more modes of transport.

Intermodal Transport has been defined as “the movement of goods in one and the same loading unit or road vehicle, which uses successively two or more modes of transport without handling the goods themselves in changing modes.”

Combined Transport is defined as “intermodal transport where the major part of the European journey is by rail, inland and waterways or sea and any initial or final legs carried out by road are as short as possible.”

2.3 The Concept of Multimodal Transport

The introduction of containers had enabled global reach through an increase in trade volume with increase of operational efficiency, which ultimately enables Multimodal Transport to be applied in most international transport operations (CullinaneKPB,WangTF,SongDW, Ji P.A, 2005).

According to Dinwoodie (2000), developments of standardized units, including containers, with the characteristic of ease of transfer, favor Multimodal Transport. In international trade, multimodal transport has been identified as an efficient way of transporting international cargo. In this system of transportation, one transport document, one tariff rate and a single through-liability are applied. The principle aim of multimodal transport is to make the movement of goods from seller to buyer more efficient, through faster transit times and reduce costs. During multimodal transportation, the responsibility and liability is concentrated in one entity known as Multimodal transport operator(MTO), who organize all transport systems in the transport chain between countries (Godfrey O.Wandera, 2001).

The terms of logistics and supply chain management are highly correlated with the transportation of goods. Freight transportation is an important component in today's economy. It is the physical process of transporting commercial goods, commodities and cargo. It is a key supply chain component used to ensure the efficient movement and timely availability of finished products and raw materials (Crainic,T.G, 2003). In order to do so, several types of vehicles like trucks, ships and trains are used, as well as, relative components including trailers, containers or pallets.

According to (Caris,A.,Macharis,C. and Janssen,G.K., 2008)multimodal transport has a benefit of enhancing competitiveness of the freight industry as a whole through use of most efficient mode of transport at each stage. The author explained the benefit of multimodal transport from legal point of view and claimed five major benefits of multimodal transportation arrangements. These are: *avoiding of separate arrangements of contracting with many transporters, avoiding the hassle of the shipper for placing goods at the right place at the right time for each of the contracting transporting segments, avoiding the inconvenience of storing goods between different segments of the transport stages when the segments don't fit seamlessly, the negotiability of bill of lading of multimodal transport arrangements to acquire a documentary credit from banks contrary to other consignment notes such as road carriers notes which are not*

negotiable, and finally avoiding the difficulty of assigning responsibility/liability in case of damage which may be complex under segmented arrangements with difficulty of identifying at which stage of the segment the damage occurred.

2.4 Multimodal Transport Service in the World

All over the world choice of transport mode is not only a choice between type of transport, but between a system and a process of transportation, between manufacturer or seller and customer or buyer. It involves separate section between producing line to go down/warehouses material handling interfaces, at each terminal facility and the documentation process to support the product. The complete market channel has to be defined and each sector demarcated and analyzed separately for transport requirements, in coordination with customer characteristics, volume, and the operating environment through which the operation is carried out each of sector would require separate transport mode to be precise more, control, ownership, finance, security documentation and product., movement of product and handling, requirement of stock at each levels, packaging and safety standards, market factors, labour, turnover of both goods and manpower, must be reconsidered and followed properly. Therefore in order to maximize the usage of transport being offered, the transport companies should be able to match and synchronize the market requirements, which will then have a major influence on the choice of transport made. Specialization is created by the impact of channel costs, which are included either before or after transportation, where the specialization reduces the mechanical handling cost, packaging costs and related expenditures mainly during terminal activity. (Boweksom, 2003)

The very objective, by which the transport mode could be chosen, depends upon whether the company is using revenue or capital to by the transport. In case of revenue, minimum cost throughout the transport operation should be the objective and in case of capital maximum tax return upon capital should be the objective since this give maximum return. (Boweksom, 2003).

2.5 Multimodal Transport Service in Ethiopia

An effective multimodal transport system will bring short-term benefits to local traders and transport operators, as well as longer-term consequences in the structural changes of a country's

transport and international trade development. Ethiopia implemented multimodal transport to minimize the transit complexity and auction of cargoes. The law of Ethiopian multi Multimodal transport has been adopted (Proclamation No.548/2007). The major objectives were to minimize transit time and cost. It is believed by the government that international multimodal transport is one means of facilitation efficiency and cost effective transit logistics service. This led the government of Ethiopia to use multimodal transport law.

(Blessing,Charuka, 2014)on logistics problem of landlocked countries discussed the logistics and supply chain reliability aspects of being landlocked and established that despite the tremendous reduction in maritime transport cost and advancement logistics technology that reduces transport costs, lack of direct sea-access is a major challenge for the growth and development of Land locked developing countries(LLDCs)

Charuka also explained the detrimental effect of high logistics costs to the competitiveness of developing landlocked countries in world markets. The authors clarified that the combination of long distances and poor logistics systems is unattractive for trade. To compound this, rent-seeking activities along the corridors make logistics highly complex and unpredictable. Like other land locked countries, these problems also common in Ethiopia.

Before 2009, Ethiopia has been used only unimodal transport, as a result most of import and export cargoes were unstuffed and stuffed at Djibouti. Thus, the port of Djibouti was not only used as get way to Ethiopia's cargoes, but also point of destination. It has been identified that, port congestion, long transit time for import transit cargoes and timely unavailability of empty containers for export transit cargoes were the adverse effects of unimodal transport system. Due to the fact that ports are cargoes and vessel interface points where cargoes stayed reasonable period of time and are not meant to serve as storage places, currently containerization of the world trade is in the order of the day; just-in-time delivery of goods is the basis to satisfy customers; and hence the arrangement of multimodal transport adopted to solve these problems.

2.6 Services Concept

Service can be defined in many ways depending on which area the term is being used. Service is defined as “any intangible act or performance that one party offers to another that does not result

in the ownership of anything” (Kotler, and Keller, 2009). Service can also be defined as an intangible offer by one party to another in exchange of money for pleasure. Quality also is defined as the whole of features and characteristics of a product or services that bear on its ability to satisfy stated or implied needs (Kotler et al., 2009). It is evident that quality is also related to the value of an offer, which could evoke satisfaction or dissatisfaction on the part of the user.

Different authors define service in different according to Kotler defines services as follows: *“A service is any act or performance that one party can offer to another that is essentially intangible and does not result in the ownership of anything. Its production may or may not be tied to a physical product”*. Gronroos (1983) also defines service as: *"An activity or series of activities of more or less intangibles nature that normally, but not necessarily, take place in interactions between the customer and service employees and/or physical resources or goods and / or systems of service provider, which are provided as solutions to customer problems"*.

2. 7 Quality Concept

Researchers have concluded that quality has become the key to competitive success and long term survival. Empirical research has demonstrated a positive relationship between service quality and organizational performance (Parasuman, et. al.,1988). Further, quality can be used as an effective strategy for raising return on investment, increasing market share, improving productivity, lowering costs, and achieving customer satisfaction.

Quality is one of the things that consumers look for in an offer, which service happens to be one Solomon, (2009). Quality can also be defined as the totality of features and characteristics of a product or services that bear on its ability to satisfy stated or implied needs Kotler et al., (2002). It is evident that quality is also related to the value of an offer, which could evoke satisfaction or dissatisfaction on the part of the user.

Quality is extremely difficult to define in a few words. At its most basic, quality has been defined as “conforming to requirements”. This implies that organizations must establish requirements and specifications; once these specifications are established, the quality goal of the

various functions of an organization is to comply strictly with them. However, the questions remain whose requirements and whose specifications? Grönroos, C. (2001).

Thus, a second series of definitions states that quality is all about fitness for use. Such definitions are based primarily on satisfying customers` needs .These two definitions are in the concept of customer perceived quality: quality can be defined only by customers and occurs when an organization supplies goods or services to a specification that satisfies customer needs.

2.8 Service Quality Concept

Service quality has received a great deal of attention from both academicians and practitioner. In order for a company`s offer to reach the customers there is a need for services. These services depend on the type of product and it differs in the various organizations. Service can be defined in many ways depending on which area the term is being used.

Different authors define service quality in different ways and service quality is considered an important tool for a firm`s struggle to differentiate itself from its competitors (Ladhari 2009). 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.

An author defines service as “any intangible act or performance that one party offers to another that does not result in the ownership of anything” (Kotler& Keller, 2009). In all, service can also be defined as an intangible offer by one party to another in exchange of money for pleasure. Parasuraman, Zeithaml and Berry (1985) define service quality as: “The difference between customers` expectation of services and their perceived service. If the expectation is greater than the service performance, perceived quality is less than satisfactory and hence customer dissatisfaction occurs`.

According to Parasuraman et al. (1985)described service quality as perceived by consumers starting from a comparison of how they feel firms should perform on this dimension with what they actually perceive. It is the gap between a customer`s expectations and perceptions that

determine service quality; the smaller the gap, the better the quality of service and the greater the customer satisfaction.

Service quality in the management and marketing literature is the extent to which customers' perceptions of service meet and/or exceed their expectations for example as defined by Zeithaml et al. (1990), cited in Bowen & David, (2005) Thus service quality can intend to be the way in which customers are served in an organization which could be good or poor. Service quality as “the differences between customer expectations and perceptions of service” Parasuraman, (1988). They argued that measuring service quality as the difference between perceived and expected service was a valid way and could make management to identify gaps to what they offer as services.

2.9 Measuring service quality

The most helpful measurements of service quality are the dimensions from the SERVQUAL model. The SERVQUAL scale which is also known as the gap model by Parasuraman, et al. (1988) has been proven to be one of the best ways to measure the quality of services provided to customers. This service evaluation method has been proven consistent and reliable by some authors (Brown 1993). They held that, when perceived or experienced service is less than the expected service; it implies less than satisfactory service quality; and when perceived service is more than expected service, the obvious inference is that service quality is more than satisfactory. From the theory presented, it seems the idea of SERVQUAL best fits the evaluation of service quality from the customer perspective. This is because when it is stated “perceived” and “expected” service, it is very clear that this goes to the person, who is going to or is consuming the service; who definitely is the consumer/customer.

2.9.1 Customers' Expectation of Service Quality

Customer expectations are beliefs about a service that serve as standards against which service performance customer thinks a service provider should offer, rather than on what might be on offer Parasuraman et al., (1988). This is influenced by their personal needs, past experience, word-of-mouth and service provider's communications. Literatures explained expectation as predictions made by consumer about what is likely to happen from a transaction.

2.9.2 Customers' Perception of Service Quality

Customers' perception of performance is what they experienced. Literature maintains that customers' total perception of a service is based on their perception of the outcome and the process; where the outcome is either value added or quality and the process is the role undertaken by the customer Edvardsson (1998). The customer's perception of quality of service is based on the degree of agreement between expectations and experience.

According to the SERVQUAL model (Parasuraman et al., 1988), service quality can be measured by identifying the gaps between customers' expectations of the service to be rendered and their perceptions of the actual performance of the service.

2.10 Service Quality Model (SERVQUAL)

The aim of providing quality services is to satisfy customers and measuring service quality is a better way to dictate whether the services are good or bad and whether the customers will or are satisfied with it.

The original study of Parasuraman et al.'s (1985) identified 10 detailed determinant of service quality i.e. Tangibles, reliability, responsiveness, communication, access, competence, courtesy, credibility, security, understanding/Knowledge of customer. Then these ten dimensions purified and reduced in to five dimensions i.e Tangibility, Reliability, Responsiveness, Assurance and Empathy.

2.11 Customer Satisfaction

What is customer satisfaction?

According to Kotler & Keller (2007) whether the buyer is satisfied after purchase depends on the offer's performance in relation- ship to the buyer's expectations, and whether the buyer interprets any deviations between the two. In general, satisfaction is a person's feelings of pleasure or disappointment that result from comparing a product's perceived performance (or outcome) to their expectations. If the performance falls short of expectations, the customer is dissatisfied. If

the performance matches the expectations, the customer is satisfied. If the performance exceeds expectations, the customer is highly satisfied or delighted.

Customer satisfaction is conceptualized transaction-specific meaning it is based on the customer's experience on a particular service encounter, (Cronin & Taylor, 1992). There is no generic definition of customer satisfaction and after carrying a study on various definitions on satisfaction they came up with the following definition, "customer satisfaction is identified by a response (cognitive or affective) that pertains to a particular focus (i.e. a purchase experience and/or the associated product) and occurs at a certain time (i.e. post- purchase, post consumption)" (Giese and Cote 2000). From this definition, it is clear that the consumer's/customer satisfaction is determined by his/her contact experience with the service provider and this is supported by (Sureshchander et al., 2002), who believe customers' level of satisfaction is determined by their cumulative experiences at all of their points of contact with a supplier organization.

2.12 Measuring Customer Satisfaction

According to Zeithaml et.al. (2009), customer satisfaction is often measured by direct and indirect measures. Direct measures relate to the data obtained from customer satisfaction surveys. Indirect measures refer to tracking and monitoring sales records, profits and customer complaints.

Customer satisfaction ratings are usually fairly high. The various confounding factors that occur during the data collection process such as genuine satisfaction of customers, response bias, method of data collection, issues relating to the questions in the form, timing, context, social desirability bias and mood of the customer commonly influence ratings. In fact, satisfaction surveys might increase customer satisfaction regardless of the good or service being evaluated. More feedback is provided to the services organization in a meaningful manner by setting standards using past satisfaction measures and comparisons with competition Hoffman and Bateson (2006).

Services marketers should promise customers only enough to attract them and then provide them with more than they expect. In this case a service organization has a better chance of delighting their customers rather than trying to attract them by advertising service as ‘the best’ or highest quality. Even if that were true, claiming so undermines the chance of delighting a customer and so the chance of positive word of mouth promotion for a service organization Lovelock (2004).

2.13. Measurement variables of Multimodal Transport Service Quality

As Masoumeh, Vahid and Fatemeh (2012) indicated on their research, there are two prominent models in the area of service quality which has got acceptance among many researchers: -

- **Service Quality Model** which mainly emphasizes on service quality dimensions which are tangibility, reliability, responsiveness, assurance and empathy (Ross & Omachonu, 2003).
- **Functional Service Quality Model**, containing the dimensions of technical and functional quality (Hartlin, Woolridge & Jonesl, 2003). Lewis (1993) further explained the dimensions of service quality which focuses on "interactions between a service firm and its customers and typically relate to: Technical dimensions, i.e. the outcome of the service process to include systems and technology. Functional dimensions, i.e. the way the service is delivered to include inter-personal interactions between employees and customers, appearance and personality of service personnel and approachability of personnel. The corporate image dimensions, which are the result of how customers perceive the firm and can be expected to be built up mainly by the technical and functional quality of its services and will ultimately affect service perceptions.

Having discussed the two basic models of service quality, the student researcher would like to give emphasis on the first model which is “service quality” and collaborate with the research subject. Many scholars have developed and tested different models which they think will effectively measure the service quality of an organization weather it targets consumers or business entities. But, no business model have got prominence than SERVQUAL model which concentrates on measuring the gap between customer expectation and perception and the other model is “SERVPERF” the performance component of the Service Quality scale (SERVQUAL), has been shown to measure five underlying dimensions corresponding to Tangibles, Reliability, Responsiveness, Assurance, and Empathy (Parasuraman, Zeithaml, & Berry, 1988).

Cronin and Taylor (1992) were amongst the researchers who leveled maximum criticism on the SERVQUAL scale. They provided empirical evidence across four industries to corroborate the superiority of their 'performance only' instrument over disconfirmation based on SERVQUAL Scale.

Methodologically, the SERVPERF scale represents marked improvement over the SERVQUAL scale. Not only is the scale more efficient in reducing the number of items to be measured by 50 per cent, it has also been empirically found superior to the SERVQUAL scale for being able to explain greater variance in the overall service quality measured through the use of single-item scale. Though still lagging behind the SERVQUAL scale in application, researchers have increasingly started making use of the performance only measure of service quality (Cronin *et al.*, 2000; Cronin and Taylor, 1992, 1994). Also when applied in conjunction with the SERVQUAL scale, the SERVPERF measure has outperformed the SERVQUAL scale (Babakus&Boller, 1992; Brady, Cronin & Brand, 2002; Cronin & Taylor, 1992). Seeing its superiority, even Zeithaml (one of the founders of the SERVQUAL scale) in a recent study observed that "Our results are incompatible with both the one-dimensional view of expectations and the gap formation for service quality. Instead, we find that perceived quality is directly influenced only by perceptions of performance

Although the above models can be applied in the consumer market, they can be also applied in business to business market as well but in a different way.

The service of a multimodal transport operator starts from booking the cargo till delivering the cargo to the final receiver are now technology oriented. The quality of a multimodal transportation services also depends on the inter-personal interactions (functional dimensions) between the customers and the employees of the multimodal transport operator (Masoumeh, S., Vahid, R. and Fatemeh, S. (2012).

Parasuraman *et al.* (1985) identified ten dimensions of service quality (e.g. credibility, security, accessibility, communication, understanding the consumer, tangibles, reliability, responsiveness, competence and courtesy). In subsequent research, however, Parasuraman *et al.* (1988) consolidated the above ten dimensions into five broad dimensions (reliability, tangibility, responsiveness, assurance and empathy). Having seen the different aspects of shipping,

multimodal transportation, dry port and service quality, the student researcher understood the need to have a modified version of SERVPERF which can measure the multimodal transportation service quality of Ethiopian Shipping and Logistics Services Enterprise.

The seven modified SERVPERF measurement variables of multimodal transportation service quality dimensions are further discussed below.

2.13.1 Reliability and overall multimodal transport Service Quality:

According to Zeithaml et al. (1990), service reliability is the service “core” to most customers and companies should use every opportunity to build a “do-it right- first” attitude. Specially they are encouraged to include reliability issues in their mission statements, set reliability standards, teach the importance of reliability in training programs, appoint reliability teams to study specific services and recommend ways to improve reliability, measures error rates and reward error –free service.

Shipping /multimodal transportation operator companies can be able to build their reliability by picking the cargo from port of loading on time, showing interest to solve any kind of problem that the customer might face, performing the service correctly starting from day one, delivering the cargo on the promised time...etc.

2.13.2 Tangibility and overall multimodal transport Service Quality:

Tangibility refers to the physical evidence of the service, consisting of physical facilities, appearance of personnel, tools or requirements, physical presentation of the service, and other customers in the service facility (Parasuraman *et al.*, 1991). Chen *et al* (2009), explains what tangibility means when it comes to the shipping (multimodal) industry as it can be achieved by having modern vessels, different types of containers, trucks, office facility, employees appearance, bill of lading, truck way bill, dry port facilities, port machineries and equipment’s which are used to load and unload cargoes, cargo tracking and tracing systems....etc.

All of these provide physical representation or images of the service that both existing and new customers will use to evaluate quality. The core benefits of a service refer to the essence of the

service that can never be substitute by fancy facilities and tangibles (Schneider & Bowen, 1999). These arguments give hints concerning the connection of tangibility and overall service quality.

2.13.3 Responsiveness and overall multimodal transport Service Quality

Service recovery and problem solving have long been recognized as important parts of service quality (Hart, Heskett, & Sasser, 1990). Responsiveness was perceived to be the most important dimension as opposed to the reliability from published literature (Zeithamlet *al.*, 1990). Responsiveness perceptions diminish when customers find difficulties to access a company in person or through any other ways of communication.

Availability of sailing till the estimated time of their cargo arrival. Because most of the cargoes loaded through the multimodal transportation operator are industrial goods sensitive in all aspects. Otherwise, if the transporter is not responsive, these circumstances gradually diminish customers overall evaluation of service quality (Zeithamlet *al.*, 1990).

2.13.4 Assurance and overall multimodal transport Service Quality

Assurance is defined as employees' knowledge, courtesy and the ability of the firm and its employees to inspire trust and confidence. This dimension is likely to be particularly important for services that the customer perceives as involving high risk and about which they feel uncertain about their ability to evaluate outcomes (Brand, R. R. (2002).

In the Ethiopian context, multimodal transportation service is also among those that pose relatively high risk because most of the cargoes transported through this modality is bought by using foreign currency and if the cargo is not properly handled and if each and every information is properly communicated by a knowledgeable and experienced employee, the importer will be exposed to different unnecessary costs like demurrage which is paid by the consignee if he/she didn't pick their cargo which is packed by the carriers container with in the grace period, storage charges which are also to be paid by the consignee as a warehousing fee and other types of costs (Berhane Selam Printing Press (2007).

Furthermore, many consignees / importers/ lack the knowledge of international logistics practice which can be filled by the multimodal operator's knowledgeable employee which will relieve the tension of the importer and serve as an assurance (Lai, C. S. (2009).

2.13.5 Empathy and overall multimodal transport Service Quality:

Parasuraman et al., (1991), the empathy dimension got split into two factors. Four items comprised one of the factors, and the item that addresses "the convenience of operation hours" formed the other factor. According to Zeithaml and Bitner (2003), empathy means the provision of caring, individualized attention given to the customers. Small businesses to large ones, customers want supplier firms to understand their industries and issues and also stated, firms which have successfully practiced this strategy have built long term relationship with customers positioned them as specialists in their respective industry.

2.13.6 Cost and overall multimodal transport service quality

Service cost can be cost of getting the multimodal service which includes sea freight, inland transportation, dry port facility and different types of costs which will be settled by the consignee. Even though the service quality is at its best, if the service cost is relatively higher than the real market price and the consignee is forced to pay to the sole multimodal transport operator, the consignee level of satisfaction will be negatively affected. Moreover, the importer (Consignee) will pass the burden of high service cost to the end buyer (Carter, J. R., & Ferrin, B. G. (1995).

In order to be a helping hand to a business partner or consignee, firms facilitate trade assistance schemes like credit facility, discounts and facilitating loan arrangements with banks. Such kind of assistances will enhance the relationship between the enterprise and the consignee (importer) and will positively affect the service quality (Lewis, B. (1993).

2.13.7 Infrastructure and overall multimodal transport service quality

Transport infrastructure is one of the most important elements of infrastructure now days. Transport infrastructure facilitates the development of connections between regions within a

country and between countries, and consequently, it supports the formation of mutual economic, social, cultural relations. Transport infrastructure improvement to facilitate transfer of vehicles and/ or vehicle components between modes, and development of multimodal network. This has an impact on the efficiency and effectiveness of multimodal transport system by improving mobility, congestion and other conditions. It includes various facilities such as warehouse or storage facilities, port machineries or equipment's, vehicles, roads, IT infrastructure, and any other facilities. Efficient international logistics is also heavily dependent on internationally harmonized documentary procedures enabling speedy electronic transmission of freight bills, payment orders, insurance contracts and other transaction documentation. M. Cukrov et al (2016) said that information exchange and documentation efficiency within a port is crucial for multimodal based level standard performance. Accordingly, the author suggested infrastructural performance indicators such as availability of suitable ICT systems for remote real time information exchange (electronic document transfer between all multimodal service stakeholders), communication of cargo documentation well in advance of ship arrival in port, online booking system and cargo trucking information system at each and every terminal or intermodal crossings.

Ports are extremely valuable assets for the national economy and hence any changes need to be considered carefully and cautiously UNCTAD (1998). Port facilities provided at dry ports vary considerably UNCTAD (1981). It includes port machineries and other facilities such as cranes, forklifts, rachs takers and storage or warehousing facilities etc. Therefore, the researcher has designed conceptual framework as transport infrastructures, port facilities, and IT infrastructures based on the ideas derived from different literatures and other related concepts.

In a conclusion to the literatures reviewed, the student researcher would use the modified version of SERVPERF which is adopted from both Parasuramanet, *al.* (1988) and Kannanet, *al.* (2012). As indicated under the theoretical framework, it includes the five service quality dimensions which are *tangibility, reliability, responsiveness, assurance* and *empathy* and additional two dimensions which are added by the researcher to fit with the context of this research which are *cost and infrastructure*.

2.14 Empirical Literature

Different research was conducted on multimodal transport service by different researcher. The topics and major findings are discussed below to have an insight about these studies.

Wendewossen (2018) conducted a research on the effect of service quality of customer satisfaction in ESLSE. The researcher used SERVPERF model to identify the relationship between service quality dimensions (reliability, tangibility, responsiveness, assurance and empathy) and customer satisfaction. He also used quantitative research method and descriptive and inferential statistics to carry out the research analysis. The researcher distributed 234 questionnaires 216 questionnaires were collected and used in the analysis. The analysis result shows customers were agree level on tangibility, responsiveness and assurance dimension, relatively on reliability dimensions service quality customers disagree and neutral on empathy dimension of the service quality. The correlation result indicated customer satisfaction has positive and significant relationship with reliability, tangibility, responsiveness, assurance and empathy which has the highest correlation with customer satisfaction is reliability. The regression analysis also revealed that all service quality dimensions have a positive impact on customer satisfaction. 49.4% of variance in customer satisfaction was explained by the service quality dimension in ESLSE. Therefore, the researcher recommended to ESLSE to work hard to improve reliability dimensions of service quality and keep updated on tangibility, reliability and assurance to satisfy its customer.

Kalkidan (2017) also conducted a research on evaluating the service quality of Ethiopian Shipping and Logistics Service Enterprise. The researcher used modified SERVPERF model to identify the relationship between service quality dimensions (reliability, tangibility, responsiveness, assurance, empathy, service coverage & frequency and service cost competitiveness & trade assistance) and customer satisfaction. She also used quantitative research method and descriptive and inferential statistics to carry out the research analysis. The researchers select non probability judgmental sampling technique & collected questionnaires from 282 respondents. The analysis result shows that relatively higher score in reliability dimensions while the service cost competitiveness and trade assistance dimension go below

average score. In general customer still expected to go a long way to improve the quality of its service to improve the service experience of its customers.

According to the study conducted 2018, the findings from hypothesis testing showed that mobility, reliability, infrastructure and cost have positive and statistically significant relationship with the overall performance of multimodal transport system. In addition to this, the findings from regression analysis coefficients of β (beta) showed that reliability was the most determinant factor followed by cost, infrastructure, mobility and safety and security system on the overall performance of multimodal transport system.

2.15 CONCEPTUAL FRAMEWORK FOR MULTIMODAL TRANSPORT SERVICE QUALITY

The conceptual frame work explains the underlying process, which is applied to guide ethicists study. Having seen the different aspects of shipping, multimodal transportation, dry port and service quality, the student researcher understood the need to have a modified version of SERVPERF which can measure the multimodal transportation service quality of Ethiopian Shipping and Logistics Services Enterprise.

Figure 2.1 Seven broad dimensions of multimodal transportation service quality

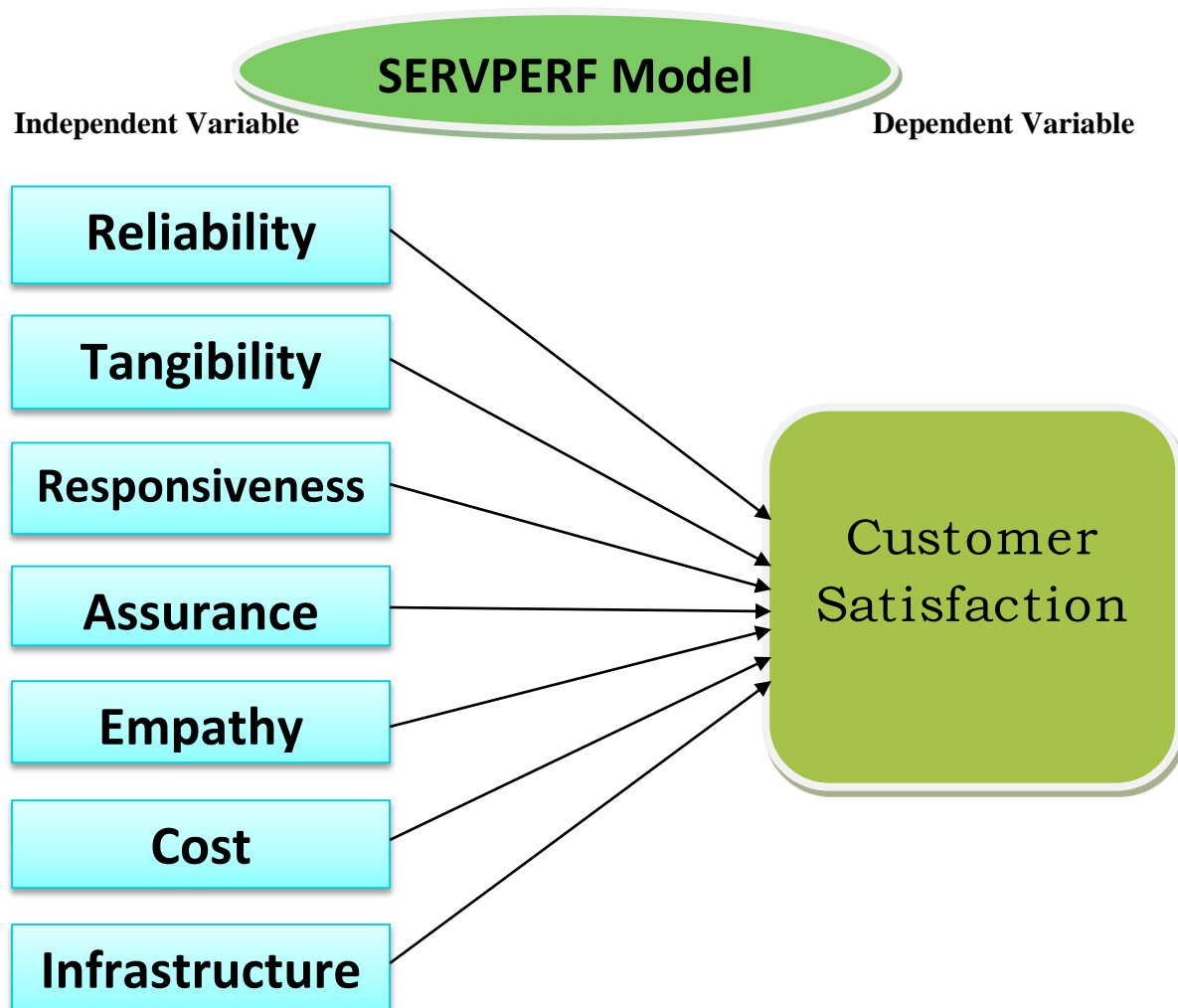


Figure 2.2: Conceptual framework shows the effect of the multi modal transport service quality on customer satisfaction

Source: Modified SERVPERF model by the student researcher

2.16 Hypothesis Testing of the Study Variables

Ha1. Reliability has positive and significant effect on customer satisfaction of multimodal Transport Service.

Ha2. Empathy has positive and significant effect on customer satisfaction of multimodal Transport Service.

Ha3. Responsiveness has positive and significant effect on customer satisfaction of multimodal Transport Service.

Ha4. Tangibility has positive and significant effect on customer satisfaction of multimodal Transport Service.

Ha5. Assurance has positive and significant effect on customer satisfaction of multimodal Transport Service.

Ha6. Cost has positive and significant effect on customer satisfaction of multimodal transport service.

Ha7. Infrastructure has positive and significant effect on customer satisfaction of multimodal transport service.

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter presented details of the research design and methodology. This includes research approach, research design, data collection methods & instruments, population of the study, sampling techniques & sampling procedures, data analysis & presentation, model reliability & validity assumption.

3.1. RESEARCH APPROACH

The research Methodology is the general approach the researcher takes in carrying out the research project; this approach dictates the particular tools the researcher selects (Leedy&Ormrod, 2010). Quantitative research approach typically involves many cases and many variables that are measured in a predetermined and specific way. The data are numeric and can be summarized numerically (O'Sullivan, Rassel&Berner, 2010).

For this study quantitative research approach was used since it allows exploring the mean value of the respondent perspective which uses for comparison which it makes possible to summarize and interpret the numbers by using statistical tools.

3.2 RESEARCH DESIGN

Research design is the plan and structure of investigation so conceived as to obtain answer to research questions. The design provides answers about the techniques to be used to gather data, kinds of sampling (Cooper & Schindler, 2003). Explanatory study was used to explain the relationship between the independent variables, (service quality dimensions) and the dependent variable (customer satisfaction). The research is cross sectional in a sense that data was collected at one point in time.

3.3. DATA COLLECTION METHODS & INSTRUMENTS

In order to collect available data from different sources, primary and secondary data collection methods were used. To collect primary data, the researcher has used self-administered

questionnaire approach in an attempt to understand and measure the effects of multimodal transport service quality on customer satisfaction. The researcher used closed ended questions. The survey questionnaire was distributed to customers of ESLSE, who are directly affected by the service quality of multimodal transport system. Closed ended questions were measured containing items of 5 point likert scale which represented 1 as strongly disagree, 2 as disagree, 3 as moderate, 4 as agree and 5 as strongly agree. The Likert scale method will be referred to make the questions interesting to the respondents and to insure maximum response rate. Customer satisfaction will be measured with one scale adopted from Lovelock and Wright (1999) with response ranging from 'very satisfied' to 'very dissatisfied'.

In addition to Primary data collection methods, the study has used secondary sources of data collected from company's records, national and international publications used to get good insights from best practitioners service quality of multimodal transport system.

3.4. POPULATION OF THE STUDY

The study was conducted at MTO "Ethiopian Shipping and Logistics Services Enterprise" which is situated in the capital city of Ethiopia, Addis Ababa. Due to the constraints of time and budget, it is impossible to collect data from the entire population. According to ESLSE Marketing Department the total number of the target population has estimated to be 3,125 in number who are currently using the service of multimodal transport. Due to convince of place and easy to access the whole customers included in the sample, the head office was used to administer the questionnaire.

3.5. SAMPLING TECHNIQUES AND SAMPLING PROCEDURE

The main focus of this study was to identify the multimodal service quality provided by Ethiopian Shipping & Logistics service Enterprise and its impact on customer satisfaction using SERVQUAL Model.

The target population for the study was customers of Ethiopian Shipping in the head office of Addis Ababa. And has 3,125 customers in Head office up to now.

The sample size of this study was determined by using the formula developed by Taro Yamane (1967)

$$n = \frac{N}{1 + N (e)^2} \quad 29$$

Where, n is the sample size

N is the population size,

E is the level of precision or sampling error = (0.05)

$$n = \frac{3125}{1 + 3,125 (0.05)^2}$$

$$n = 355$$

Thus, sample size of 355 customers was selected from the population of 3,125

As per the selected sample questionnaire was be distributed for every 355 selected customers that found in Ethiopian Shipping and logistics service Enterprise. Then after, for the sake of good order all questionnaires were collected in a specific period of time in order to compile & analyze the empirical data accordingly.

3.6. DATA ANALYSIS & PRESENTATION

In this research, the data collected from the respondents was analyzed using descriptive-and inferential statistics using SPSS version 20 Computer systems (Statistical Package for Social Science). A data collected from respondents were analyzed using descriptive statistical indexes like frequency distribution, percentage, mean and standard deviation were calculated. Inferential statistics like correlation and multiple regression analysis were also carried out to address the research objectives.

After information was collected from primary sources, mainly the information obtained through questionnaire was scaled, once the information scaled then the researcher organize in appropriate

categories related to respondents view in general and in terms of the research variables in particular.

Dependent variable (customer satisfaction) and independent variables (Tangibility, Reliability, Responsiveness, Assurance, Empathy, Cost & 30 structure) also identified and systematically arranged to analyze correlation and multiple linear regression analysis and its significance on customer satisfaction.

3.7. MODEL RELIABILITY & VALIDITY ASSUMPTION

3.7.1. Reliability

Reliability is the consistency of a set of measurements or measuring instrument, often used to describe a test. According to Nunnally (1978) reliability is used to check measurements are reliable to the extent that they are reputable and that random influence which tends to make measurements different from occasion to occasion or circumstance to circumstance is a source of measurement error. Cronbach's Alpha, is most commonly used to assess the internal consistency of a questionnaire made up of multiple likert type of scales and items Cronbach (1990). Cronbach's alpha ranges from 0.00 to 1.00, a negative alpha means you probably need to reverse some items. Reliability coefficient of 0.70 or higher is considered or acceptable in most social science research situations.

Cronbach's is often used in assessing the reliability of tests with questions that have more than two possible responses Sapp and Jensen (1997). The alpha value is ranges from a maximum of 1.0 for a perfect score to minimum of zero, good measure of the alpha should be 0.70 or higher Neuman(2007). According to Willima and Berry (2010) exhibiting a coefficient of alpha between 0.80 and 0.96 are considered to have very good reliability, between 0.70 and 0.80 are considered to have good reliability and alpha value between 0.60 and 0.70 indicated fair reliability and when the coefficient of alpha is below 0.60, the scale has poor reliability.

Table 3.1 Test of Reliability

Variables	No. of Items	Cronbach's alpha
Reliability	5	.826
Tangibility	5	.724
Responsiveness	6	.813
Assurance	6	.892
Empathy	5	.766
Cost	5	.709
Infrastructure	5	.875

According to the assumption of reliability test of the above table 3.1, cronbach's alpha value is between 0.00 to 1.00 with an acceptable range of 0.70 or above. As stated in the above table 3.1 the cronbach's alpha value for each construct indicates that, reliability 0.826, tangibility 0.724, responsiveness 0.813, assurance 0.892, empathy 0.766, cost 0.709 & infrastructure 0.875. Thus, the observed variables truly reflect the latent construct and deletion or amendments are not necessary.

3.7.2. Validity

As per (Marczyk et al. 2005) validity refers to what the test or measurement strategy measures and how well it does so. Conceptually, validity seeks to answer the following question: "Does the instrument or measurement approach measure what it is supposed to measure?" to guarantee its validity.

Ensuring validity in behavioral research is very important but it is a complicated and challenging exercise. Measuring and evaluating the questionnaire consider some specifications for measuring tools, such as the validity of questionnaire. Content validity was used for measuring the validity of the questionnaires of this research. For this purpose, the content of the questionnaire was prepared from relevant literature. After the questionnaire was constructed, pre-testing was done with individuals who have knowledge of the area by allowing them to read and comment on it. Depending on the feedback some questions were amended, some were added and some omitted.

After doing amendments the content validity and face validity of the questionnaire was approved by advisor.

Before performing regression analysis tests of validity assumptions such as normality, test of multicollinearity, test of autocorrelation, and test of correlation were performed with their own distinctive feature. Each of the tests was performed by reviewing related literatures, theories and other ideas.

Multiple regression model

$$\text{MtCS} = \text{Bo} + \text{B1Rel} + \text{B2Tan} + \text{B3resp} + \text{B4assu} + \text{B5emp} + \text{B6co} + \text{B7Infr} + e.$$

$$\text{OR } (Y = \text{Bo} + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 + b_7x_7 + e)$$

Where:

MtCS = dependent variable for the overall multimodal customer satisfaction

REL; Reliability of multimodal transport (independent variable)

TAN; Tangibility of multimodal transport (independent variable)

RESP: Responsiveness of multimodal transport (independent variable)

ASSU: Assurance of multimodal transport (independent variable)

EMP: Empathy of multimodal transport (independent variable)

CO; cost of multimodal transport (independent variable)

INFR; Infrastructure of multimodal transport (independent variable)

E: error term

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

This chapter deals with presentation, analysis and interpretation of the data obtained through survey questionnaire and secondary source of data. It includes the measure the service quality of multimodal transport against customer's satisfaction dimension of ESLSE in Addis Ababa. To collect primary data 355 questionnaires were distributed. From the total number of respondents 250 respondents feel the questionnaire which were resulted to arrive the overall performance of multimodal transport system which means the overall response rate of the study was 71%.

4.1 Respondent Background Information

4.1.1 Demographic Information of the Respondents

Table 4.1 Frequency and percent of demographic information of the respondent

Sex of respondents	Frequency	Percent
Male	83	33.2
Female	167	66.8
Total	250	100
Age of respondents	Frequency	Percent
18 – 30 years	2	0.8
30 – 40 years	78	31.2
40 – 50 years	100	40
Above 50	70	28
Total	250	100
Educational level of respondent	Frequency	Percent
High School	37	14.8
Diploma	59	23.6
Degree	106	40
Masters	48	28
Total	250	100

Source: Survey result, 2020

Table 4.1 above shows that out of the total respondents 83(33.3%) of respondents were male and 167 (66.8%) respondents were females. The result shows that the numbers of male respondents were less than female respondents; related to respondent's age out of the total 2(0.8%) of respondent's age were between 18- 30 years, 78(31.24%) of respondent's age were between 30-40 years, 100(40%) of respondent's age were between 40 – 50 years and the remaining 70(28%) of respondent's age were above 50 years. The result shows that the majority (99%) respondent's ages were between 30-50 years.

Related to educational qualification of the respondents, out of the total 37(14.8%) of respondents educational background were high school, 59(23.6%) of the respondents educational level were college diploma, 106 (42.4%) of respondents educational background were first degree and the remaining 48(19.2%) respondent's educational background were master's degree and non of respondents educational level were Ph.D.. The result showed that above half of respondents educational level are first degree and next respondents educational qualification are diploma holders. This implies the majority of respondents are first Degree holders.

4.1.2. Work Experience of Customers

Table 4.2 Frequency and percent of work experience information of the respondent

Working Experience level of respondent	Frequency	Percent
Less than 5 years	70	28
5 years up to 10 years	125	50
10 years up to 15 years	53	21.2
Above 20 years	2	0.8
Total	250	100

Source: Survey result, 2020

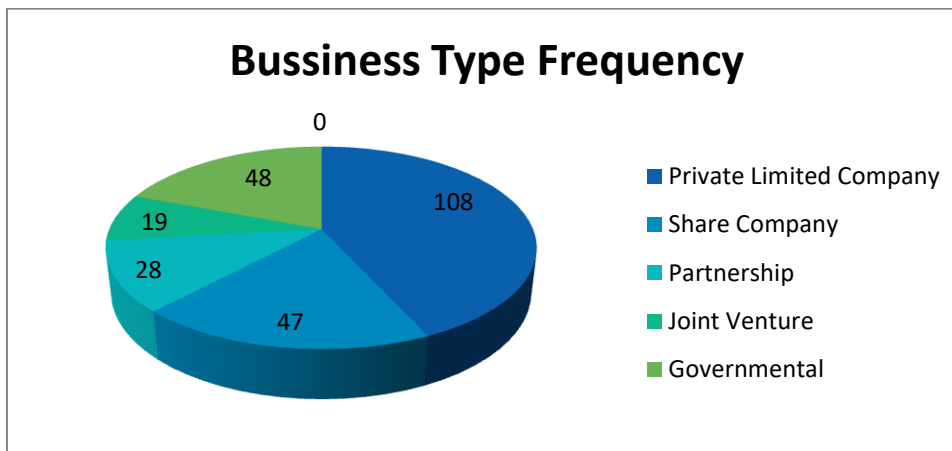
As per above table 4.2 shown work experience of multimodal transport customers shows that, out of the total 70(28%) of respondents work experience less than 5 years, 125(50%) of the respondents work experience 5 years up to 10 years, 53 (21.2%) of respondents work experience

10 years up to 15 years, 2(0.8%) respondent's work experience above 20 years. This implies the majority of respondents are between 5 up to 10 years work experience.

4.1.3 Business Type of Respondents

According to the profile of respondents, 43.2% were private limited companies, 18.8% share companies, 11.2% partnership, 7.6% joint venture and 19.2% were governmental organizations respectively. The result indicates that private limited company owner’s share the highest percentage than all other type of business. The number respondents, business type and percentage share were listed in the following Figure 4.3.

Figure 4.1 Business Type Operated by customers



4.2 Analysis of Descriptive Statistics

In orders to analyze, describe and summarize the characteristics of responses, mean and percentage were used. These research designs were used to point out the degree of variability and percentage share of responses that were answered questions stated in the questionnaire.

The table below 4.3 up to 4.9 represents the results. In this part, the data related with the study is presented and analyzed in detailed manner. This section is further categorized into seven broad proportions (Tangibility, Reliability, Responsiveness, Assurance, Empathy, Cost&

Infrastructure). Based on this, customers were asked to rate the level of provision of service with specific quality service. In order to request their opinion on the importance of effective service delivery processes different questions were included in each indicators and service quality for customer satisfaction.

4.2.1 Reliability dimension of Multi Modal Service quality

Reliability is the ability to perform services consistently and correctly in a consistent manner. It contains four items to assess the accuracy and credibility of the ESLSEs services. This dimension of service quality evaluates the promises of the ESLSEs and its execution from customers' point of view. Reliability is an important determine of product quality besides good personal service, staff attitude, knowledge and skills. It is found that service reliability is the service “core” to most customers and managers should use every opportunity to build a “do-it right-first” attitude. Therefore, reliable service performance has to meet customers' perception. Service must be accomplished on time, every time, in the same manner and without errors (Dabholkar ,1996 as cited by Yoseph, 2012).

Table 4.3 Customer satisfaction concerning service quality of multimodal transport reliability dimensions

Descriptive Statistics			
	N	Mean	Std. Deviation
Multimodal transport is offering the service adequately as promised	250	3.1600	1.02890
ESLSE provides timely response to customer regarding complain in cargo delay	250	3.3320	.82004
ESLSE clear cargos from Djibouti port timely	250	3.6120	1.01270
ESLSE amend document errors timely	250	2.8520	.86318
When your cargo hold at Djibouti, employees shows a sincere interest in solving the problem	250	2.8600	1.06439
Valid N (listwise)	250		

According to the table 4.3 above result, for the statement Multimodal transport is offering the service adequately as promised scored a mean value 3.16 and standard deviation value 1.02, the ESLSE’s provides timely response to customer regarding complain in cargo delay scored a mean value equal to 3.33 and standard deviation value 0.82, ESLSE’s clear cargos from Djibouti port timely scored a mean value 3.61 and standard deviation value 1.01, ESLSE amend document errors timely scored mean value equal to 2.85and standard deviation value 0.86 and when your cargo hold at Djibouti, employees shows a sincere interest in solving the problem scored a mean value 2.86 and standard deviation value 1.06. This result indicated ESLSE amend document errors timely when your cargo hold at Djibouti and employees shows a sincere interest in solving the problem mean value show below neutral or dissatisfied and this shows customers are disagree with the reliability dimension of multimodal transport service quality of the ESLSE. This further indicates the employees are not able to provide services as they promised and not assist customers to clear cargo from Djibouti on time for their customers. Overall related to reliability dimension customers are agreed with the service provided by ESLSE.

4.2.2 Tangibility dimension of Multi Modal Service quality

Tangibility measurement shows the physical aspects of the services as physical facilities, appearance of personnel and tools used for the provision of services at dry port. It is more concerned with visual part of the Ethiopian Shipping and Logistics Services Enterprise (ESLSE).

Table 4.4 Descriptive statistics for service quality of multimodal transport tangibility dimensions

Descriptive Statistics			
	N	Mean	Std. Deviation
ESLSE supported by online container tracking and tracing system	250	3.3840	.87154
ESLSE payment method supported by IT system	250	3.1520	.85547
ESLSE has sufficient cargo safety protection equipment's at dry port	250	3.4640	1.06076

ESLSE has enough modern equipment	250	3.1160	1.24448
ESLSE physical facilities are visually appealing	250	3.0680	.89138
Valid N (listwise)	250		

Table 4.4 above result revealed that, for the statement ESLSE supported by online container tracking and tracing system scored a mean value 3.38 and standard deviation 0.87, ESLSE payment method supported by IT system scored a mean value equal to 3.15 and standard deviation value 0.85, ESLSE has sufficient cargo safety protection equipment's at dry port scored a mean score value 3.46 and standard deviation value equal to 1.06, ESLSE has enough modern equipment scored a mean value 3.11 and standard deviation value 1.24 and ESLSE physical facilities are visually appealing scored a mean score value 3.06 and standard deviation value 0.89.

The result shows that comparatively on the tangibility dimension on average all customers are agreed or satisfied with the tangibility of multimodal transport.

4.2.3 Responsiveness dimension of Multi Modal Service quality

This dimension reflects the willingness of employees to provide immediate services to customers. Customers are very sensitive to employees' working environment in service organizations. It was found that correct match between staff skills and customers' perception resulted in better service quality towards customers. Quick response and staff willingness to help are recognized as important parts of service quality.

Table 4.5 Descriptive statistics for service quality of multimodal transport responsiveness dimensions

Descriptive Statistics			
	N	Mean	Std. Deviation
Employees provided your prompt service	250	3.0280	.97931
ESLSE release proper document on time	250	3.6240	1.12770
Employees are always willing to serve you	250	4.0560	.54225
ESLSE have adequate number of employees to response for your request	250	3.7720	.85024
ESLSE employees are always cooperative	250	3.4640	1.09796
Multimodal transport provide services with best professionalism	250	3.7880	.93087
Valid N (listwise)	250		

Table 4.5 above result revealed that, for the statement Employees provided your prompt service scored a mean value 3.02 and standard deviation 0.97, ESLSE release proper document on time scored a mean value equal to 3.62 and standard deviation value 1.12, Employees are always willing to serve you scored a mean score value 4.05 and standard deviation value equal to 0.54, ESLSE have adequate number of employees to response for your request scored a mean value 3.77 and standard deviation value 0.85, staff ESLSE employees are always cooperative mean value 3.46 and Multimodal transport provide services with best professionalism scored a mean score value 3.78 and standard deviation value 0.93.

The result shows that comparatively on the responsive dimension on average all customers are agree with the services provided by ESLSE and employees quickly respond to customers question and they help them from their heart. However, out of this dimension employees provided your prompt service result comparatively customers are neutral. This implies ESLSE employees are not provided prompt service to their customers.

4.2.4 Assurance dimension of Multi Modal Service quality

Assurance indicates the employees’ knowledge, good manners and their ability to express trust and confidence. Parasuraman et al. (1988) remarked that assurance is a necessary measurement of service quality to know customers level of satisfaction.

Table 4.6 Customer satisfaction concerning service quality assurance dimensions

Descriptive Statistics			
	N	Mean	Std. Deviation
Employee have sufficient knowledge to answer your question	250	3.8280	.73250
ESLSE employees are always courteous to you	250	3.6640	.92223
ESLSE clear your cargo from Djibouti with shortest transit time	250	3.8280	.73250
The average waiting time of containers in port is low	250	3.6640	.92223
ESLSE cover cargo damage timely	250	3.4640	1.09796
Forms provide by ESLSE are easily understandable	250	3.7880	.93087
Valid N (listwise)	250		

Table 4.6 above result shows that the assurance dimension of multimodal service quality, the statement Employee have sufficient knowledge to answer your question scored a mean value 3.82 and standard deviation value .732, ESLSE’s employees are always courteous to you score mean value 3.66 and standard deviation value 0.992, ESLSE clear your cargo from Djibouti with shortest transit time scored a mean value 3.82 and standard deviation value to 0.732, the average waiting time of containers in port is low scored a mean value 3.66 and standard deviation 0.922, ESLSE cover cargo damage timely scored a mean value 3.46 and standard deviation value to 1.09 and forms provide by ESLSE are easily understandable scored a mean value 3.78 and standard deviation value to 0.93.

The result indicated that on assurance service quality dimension like responsive dimension service quality customers are relatively agreed and satisfied. We can conclude that customers are agreed or satisfied on the assurance dimension of multimodal service quality of ESLES.

4.2.5 Empathy dimension of multimodal service quality

Empathy is the magnitude of caring and individual attention given to customers. It involves that employees' commitment to deliver quality services. According Parasuraman et al. (1988) empathy is the ability to understanding another's feelings as one's own. Empathetic firms have not lost handle of what it is like to be a customer of their own firm. Empathetic firms easily understand their customers' need and want and make their services as much as possible accessible to their customers. In contrast, firms that do not provide their customers individualized attention when requested and offer operating hours convenient for the firm and not its customers fail to demonstrate empathetic behaviors.

Table 4.7 Customer satisfaction concerning multimodal service quality empathy dimensions

Empathy Descriptive Statistics	N	Mean	Std. Deviation
ESLSE employees are polite	250	3.6160	.99221
Employees in ESLSE provide you adequate information in the service you request	250	2.8400	.86335
ESLSE employees gives you individual attention	250	2.8440	1.05837
ESLSE working hours are convenient to its customers	250	3.3920	.87716
ESLSE employees easily understand your specific need	250	3.3320	.82004
Valid N (listwise)	250		

Table 4.7 above result shows that the empathy dimension of multimodal service quality, the statement ESLSE employees are polite scored a mean value 3.61 and standard deviation value 0.992, Employees in ESLSE provide you adequate information in the service you request scored a mean value 2.84 and standard deviation value 0.863, ESLSE employees gives you individual

attention scored a mean value 2.84 and standard deviation value 1.058,ESLSE working hours are convenient to its customers scored a mean value 3.39 with standard deviation value 0.877 and ESLSE employees easily understand your specific scored a mean value 3.33 and standard deviation value 0.82. This means under empathy dimension service quality customers gave least score or nearer dissatisfaction to the statement Employees in ESLSE provide you adequate information in the service you request and ESLSE employees gives you individual attention.

Therefore, comparatively the empathy dimension of multimodal service quality customers are agreed or satisfied.

4.2.6 Cost dimension of multimodal service

Transport costs have significant impact on the structure of economic activities as well as on the international trade Rodrigue and Notteboom (2017). Multimodal transport service is designed to cutback cost components such as inventory, storage, port handling and overall transport costs. The fact that, many landlocked countries impose high cost to perform multimodal transport service which resulted from inefficiencies of logistics practice. In order to assure whether the cost of multimodal transport was high or not, the researcher has used measurement variables considering their importance in measuring the performance of multimodal transport system.

Table 4.8 Customer satisfaction concerning multimodal service quality cost dimensions

Descriptive Statistics			
	N	Mean	Std. Deviation
Cost of sea freight is reasonable	250	3.3920	.87716
Cost of inland transport is reasonable	250	3.1480	.86318
Cost of storage at dry port is reasonable	250	3.4760	1.04968
Cost of demurrage at dry port is reasonable	250	3.1240	1.24048
ESLSE charges fair price for the service provide	250	3.3840	.97999
Valid N (listwise)	250		

Table 4.8 above result shows that the cost dimension of multimodal service quality, the statement Cost of sea freight is reasonable scored a mean value 3.39 and standard deviation value 0.877, Cost of inland transport is reasonable scored a mean value 3.14 and standard deviation value 0.86, Cost of storage at dry port is reasonable scored a mean value 3.47 standard deviation value 1.049, Cost of demurrage at dry port is reasonable scored a mean value 3.47 with standard deviation value 1.24 and ESLSE charges fair price for the service provide scored a mean value 3.38 and standard deviation value 0.979.

The result shows that comparatively on the cost dimension on average all customers are agreed or satisfied with the cost of multimodal transport.

4.2.7 Infrastructure dimension of multimodal service

Transport infrastructure is one of the most important parts of economic infrastructure. The impact of transportation on economic growth and foreign trade is a very important phenomenon, particularly when making decisions on allocation of financial funds to investments in different fields of transportation Boruch (2009). It includes port/terminal and corresponding facilities, roads, rails, trucks, and ICT facilities EMAA (2016). To test the related literatures, the following survey questionnaires were forwarded to users of multimodal transport.

Table 4.9 Customer satisfaction concerning infrastructure dimensions of multimodal service

Descriptive Statistics			
	N	Mean	Std. Deviation
ESLSE have adequate port and terminal facilities & corresponding facilities	250	3.0280	1.19370
ESLSE has sufficient trucks for inland transport	250	2.9320	1.14395
ESLSE has modern trucks for inland transport	250	3.2120	1.19195
ESLSE have dry port cargo tracking and tracing system	250	3.2000	1.16164
ESLSE provide adequate mode of transportation for its customers	250	2.9400	1.13027
Valid N (listwise)	250		

Table 4.9 above result shows that the infrastructure dimension of multimodal service quality, the statement ESLSE have adequate port and terminal facilities & corresponding facilities scored a mean value 3.02 and standard deviation value 1.193, ESLSE has sufficient trucks for inland transport scored a mean value 2.93 and standard deviation value 1.143, ESLSE has modern trucks for inland transport scored a mean value 3.21 and standard deviation value 1.191, ESLSE have dry port cargo tracking and tracing system scored a mean value 3.20 with standard deviation value 1.16 and ESLSE provide adequate mode of transportation for its customers scored a mean value 2.94 and standard deviation value 1.13. The result implies customers dissatisfied on statement ESLSE has sufficient trucks for inland transport and ESLSE provide adequate mode of transportation for its customers this show customer need from ESLSE to provide sufficient trucks and to provide adequate mode of transportation for its customers. Therefore, comparatively the empathy dimension of multimodal service quality customers are agreed or satisfied.

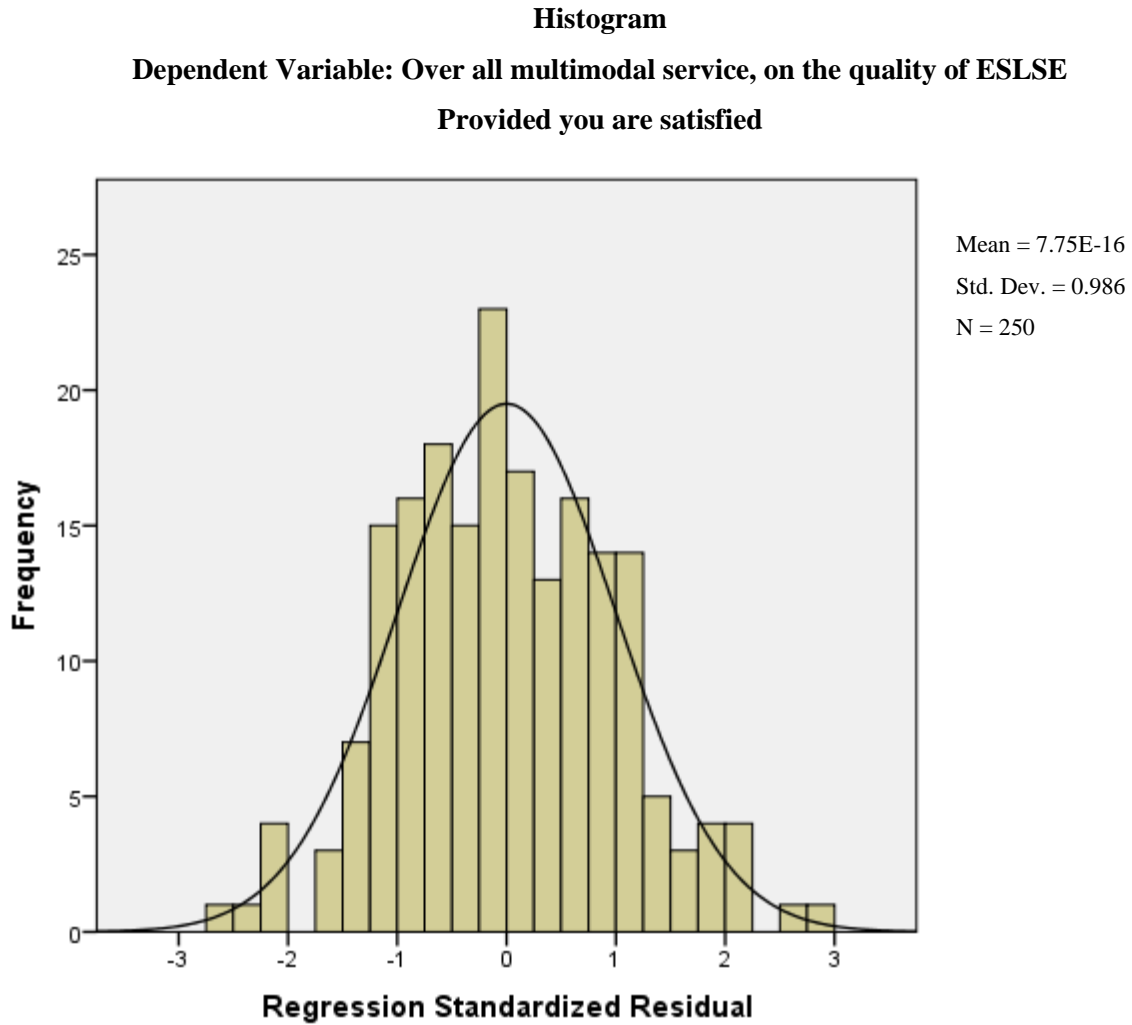
4.3 Test of Regression Assumptions

Before making regression analysis the researcher was conducted test of normality, test of multicollinearity, test of autocorrelation, and test of correlation.

4.3.1 Normality Test

According to Osborne and Waters (2002) variables have normal distributions. Those non normally distributed variables are distributed with substantial outliers. They can be identified through visual inspection of histograms or frequency distributions. If the residuals are normally distributed, the histogram should be bell-shaped and Bera-Jarque statistic would be not significant Brooke (2008). In parametric statistics, we fill the blanks concerning shape by assuming that the sampling distribution of the mean is normal Mordkoff (2016). To test normality of sample distributions the researcher was used histograms and test of linearity as presented in the following figure 4.2 and 4.3.

Figure 4.2 Normality Test using Histograms

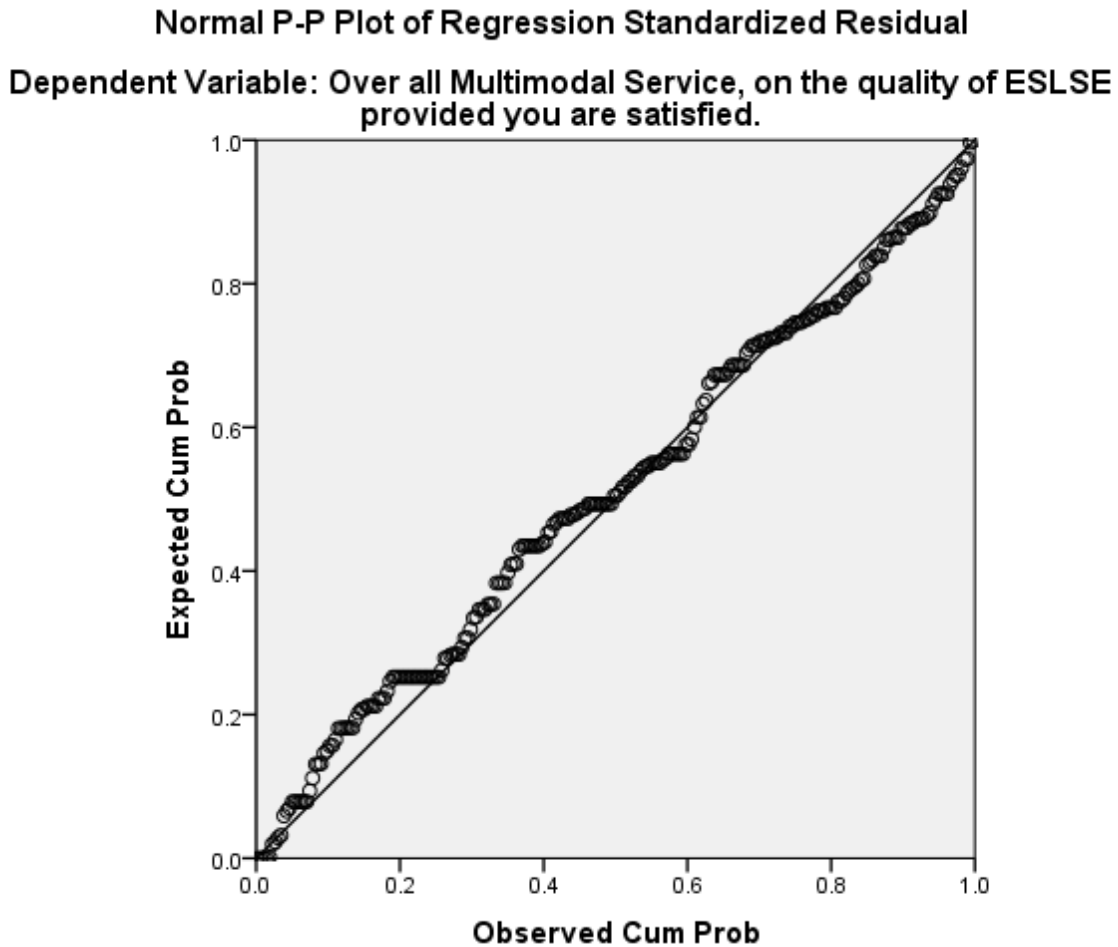


4.3.2 Test of linearity

Linearity assumption of multiple regressions was tested using scatter plot test (Kothari, 2004) and it was found that there is linear relationship between independent and dependent variables.

According to the linearity result, the distributions of residuals are near to the mean zero.

Figure 4.3 Test of Linearity



4.3.3 Test of Multicollinearity

Multiple regressions assume that the independent variables are not highly correlated with each other. Colliniarity also called also called multicollinearity refers to the assumption that the independent variables are uncorrelated Darlington (1968) and Keith (2006). Multicollinearity occurs when several independent variables correlate at high levels with one another or when one independent variable is a near combination of other independent variables ($r=.9$ and above) Keith (2006). The more variables overlap (correlate) the less able researchers can separate the effects of variables. Multicollinearity can result in misleading and unusual results, inflated standard errors, and reduced power of the regression coefficients that create a need for larger sample sizes Jacquard et al (2006).

The assumption is tested using variance inflation factor (VIF) values and tolerance. Variance inflation factor (VIF) - The VIF's of the linear regression indicate the degree that the variance in the regression estimates are increased due to multicollinearity. VIF values higher than 10 indicates that multicollinearity is a problem. In addition to VIF value, tolerance value for each variable should be less than 1.

As a result of the above assumption and associated theories, the researcher was used variance inflation factor (VIF) and level of tolerance to test detect multicollinearity among explanatory variables and to perform linear multiple regression analysis. Accordingly, the values for each parameter were presented in the table 4.10 below.

Table 4.10 Collinearity Statistics

Model	Collinearity Statistics	
	Tolerance	VIF
Reliability	.787	1.270
Tangibility	.716	1.397
Responsiveness	.305	3.283
Assurance	.482	2.075
Empathy	.601	1.665
Cost	.534	1.873
Infrastructure	.768	1.302

As observed in the above collinearity statistics table 4.14, the value of variance inflation factor (VIF) reliability 1.27, tangibility 1.39, responsiveness3.28, assurance2.07, empathy 1.66, cost 1.87 and infrastructure 1.30 respectively which is below 10. Therefore, it indicates that there is no multicollinearity among the predictor variables and the study does not violate the assumption.

4.4 Correlation and Regression Analysis

4.4.1 Correlation

In addition to other regression assumptions, correlation analysis in between independent variables has to be tested before going in to regression analysis. A Pearson correlation matrix is a technique of testing multicollinearity of explanatory variables by investigating the relationship of bivariate variables Wooldridge (2006). When computing a matrix of person's bivariate correlations among all independent variables the magnitude of the correlation coefficients should be less than 0.8. Thus, the result of correlation analysis was presented using Pearson's correlation coefficient which is most widely applicable in survey study. Table 4.11 exhibits the result of the correlation analysis.

Table 4.11 Pearson Correlations Matrix Correlations

Variables	Overall multimodal customer satisfaction	Reliability	Tangibility	Responsiveness	Assurance	Empathy	Cost	Infrastructure
Overall multimodal customer satisfaction	1 Sig. (2-tailed)	.699** .000	.591** .000	.644** .000	.599** .000	.667** .000	.513** .000	.551** .000
Reliability	.699**							
Tangibility	.591**	.501**						
Responsiveness	.644**	.600**	.345**					
Assurance	.599**	.525**	.314**	.701**				
Empathy	.667**	.524**	.387**	.551**	.379**			
Cost	.513**	.468**	.322**	.669**	.446**	.445**		
Infrastructure	.551**	.415**	.305**	.372**	.345**	.381**	.303**	

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

Source Own Survey, 2020

As of seen in the above correlation matrix table 4.14, none of the independent variables have correlation coefficient higher than 0.80. Due to this there were no any multiple relations between variables rather there is positive and negative relationship between response variables. Relatively the highest correlation was found to be in between reliability, responsiveness and empathy. This makes no variable to be excluded in regression analysis. Therefore, the overall correlation analysis was satisfactory in order to proceed to regression analysis.

4.5 Discussion of Regression Analysis

This section presents the result of inferential statistics analysis on measuring the service quality of multimodal transport system in Ethiopia from the assumptions which were tested. Regression analysis is a statistical measure that attempts to determine the strength of the relationship between one dependent variable and a series of other changing variables (known as independent variables). More specifically, regression analysis helps one understand how the typical value of the dependent variable (criterion variable) changes when any one of the independent variables is varied, while the other independent variables remain constant.

For the purpose of determining the extent to which overall multimodal customer satisfaction (depends) on the independent variables such as tangibility, reliability, responsiveness, assurance, empathy, cost and infrastructure. To carry out this the researcher used multiple regression analysis models below table 4.12.

Table 4.12 Multiple regression analysis of the model summary

Model Summary ^b									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.861 ^a	.741	.733	.47448	.741	98.745	7	242	.000

a. Predictors: (Constant), Infrastructure, Cost, Tangibility, Assurance, Empathy, Reliability, Responsiveness

b. Dependent Variable: Over all Multimodal Service, on the quality of ESLSE provided you are satisfied.

From the above Table 4.15 indicates R, R Square, Adjusted R Square and standard error of the estimate. Further, it lists the independent variables that are entered in to the regression model. R (.861) is the correlation of independent variables with the dependent variable. R square captures the percent of deviation from the mean in the independent variable that could be explained by the model. The model's degree of explaining the variance in the criterion variable was found to be adjusted R²=0.733. This tells us how much of the variance in the dependent variable (multimodal service customer satisfaction in the Ethiopian Shipping and Logistic Service Enterprise) are explained by the independent variables (as tangibility, reliability, responsiveness, assurance, empathy, cost and infrastructure). This means that our model (independent variables) explains 73.3% of the variance in customer satisfaction (dependent variable).

Table 4.13 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	155.617	7	22.231	98.745	.000 ^b
	Residual	54.483	242	.225		
	Total	210.100	249			

a. Dependent Variable: Over all Multimodal Service, on the quality of ESLSE provided you are satisfied.

b. Predictors: (Constant), Infrastructure, Cost, Tangibility, Assurance, Empathy, Reliability, Responsiveness

From the above ANOVA 4.13 table, it has been determined that service quality dimensions have significant effect on customer satisfaction at $F = 98.745$ and Sig. is .000. Hence, the result depicted that the alternative hypothesis “multimodal transport service quality dimensions have significant effect on overall multimodal service customer satisfaction in ESLSE” is accepted which leads to rejection of the null hypothesis. Overall the model is significant to carry out regression analysis.

Table 4.14 multiple regression coefficient

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2.268	.221		-10.282	.000
	Reliability	.291	.066	.207	4.432	.000
	Tangibility	.309	.052	.231	5.974	.000
	Responsiveness	.092	.088	.063	1.054	.293
	Assurance	.278	.070	.188	3.978	.000
	Empathy	.392	.060	.275	6.505	.000
	Cost	.046	.058	.036	.793	.429
	Infrastructure	.239	.047	.191	5.114	.000

a. Dependent Variable: Over all Multimodal Service, on the quality of ESLSE provided you are satisfied.

Source own survey, 2020

Based on multiple linear regression analysis, the above table 4.14 reveals the impact of reliability, tangibility, responsiveness, assurance, empathy, cost and infrastructure on customers' satisfaction with ESLSE multi modal service are 0.207, 0.231, 0.063, 0.118, 0.275, 0.036 and 0.191 respectively with a constant value ($\alpha = -2.268$). By examining this beta weight of data analysis result the finding shown that empathy followed by tangibility and reliability was making relatively larger contribution to the prediction model. This informed us the predicted change in the dependent variable for every unit increase in that predictor. This signifies that for every additional point or value in the reliability one could predict a gain of 0.207 points on the customer satisfaction provided that other variables being held constant the same are for. When the contribution of all variables becomes unchanged or zero the customers' satisfaction becomes decrease by a value of -2.268 unit.

Generally, customer satisfaction is primarily predicted by higher level of empathy, tangibility and reliability assurance and to a lesser extent by responsiveness and cost in ESLSE multi modal service.

Based on the result of regression analysis, the estimation equation is developed is shown below:

$$\text{OMTSQ} = -2.268 + 0.291 (\text{Reli.}) + 0.309 (\text{Tan.}) + 0.092 (\text{resp.}) + 0.278 (\text{assur.}) + 0.392 (\text{Emp.}) + 0.046 (\text{cost}) + 0.239 (\text{infr.})$$

4.6 Discussion on the Result of the hypotheses testing

The following hypotheses were tested to answer the hypothesis proposed by the researcher and consequently address the objective of the study.

Hypotheses (H1)

The reliability dimension has a positive and significant effect on overall multimodal transport service quality on customer satisfaction.

The result of the correlation matrix analysis found that the variable reliability is equal to $r = .699^{**}$ value and significant at a 0.01% significance level, as shown in Table 4.14. These finding indicate that the researcher has strong evidence to reject the null hypothesis and accept

the alternative hypothesis (H2). This indicates that there is a significant and strong positive relationship between the reliability dimension of multimodal transport service quality and customer satisfaction in ESLSE at head office Addis Ababa.

Hypotheses (H2)

Tangibility dimension of overall multimodal transport service quality has a positive and significant relationship with customer's satisfaction in ESLSE.

The finding in the data analysis presented in Table 4.14, shows that the variable tangibility dimension and customer satisfaction had $r = .591^{**}$ and high significant level of $p = 0.000$. This means that the tangibility dimension was a significant contributor to customer satisfaction. Therefore, accept alternative hypothesis H2.

Hypotheses (H3)

Responsiveness overall multimodal transport service quality dimension has a positive and significant relationship with customer's satisfaction in ESLSE.

Responsiveness service quality dimension and customer satisfaction had $r = .644^{**}$ and Sig. $p = 0.000$. With these data we can accept the alternative hypothesis (H3) and we reject the null hypothesis.

Hypotheses (H4)

Assurance overall multimodal transport service quality dimension has a positive and significant relationship with customer's satisfaction in ESLSE.

Assurances multimodal service quality dimension and customer satisfaction had $r = .599^{**}$ and Sig. (p-value) less than 1% alpha value. The data analysis also found that assurance service quality dimension was moderately correlated to customer satisfaction. With these data we can accept the alternative hypothesis (H4) and we reject the null hypothesis. So the finding concludes that there is a significant and positive moderate relationship between assurance service quality dimension and customers satisfaction in ESLSE at head office in Addis Ababa.

Hypotheses (H5)

Empathy overall multimodal service quality dimension has a positive and significant relationship with customer's satisfaction in ESLSE. Empathy service quality dimension and customer satisfaction had $r=.667^{**}$ and Sig. (p-value) less than 1% alpha value. Therefore, we can accept the alternative hypothesis (H5) and we reject the null hypothesis.

Hypotheses (H6)

Cost is positively associated and significant effect on the overall multimodal transport service quality. As shown in the above correlation table 4.14, cost and overall multimodal transport service quality are positively correlated each other $r=.513$ with a higher significance level of $p=0.000$. Therefore, accept alternative hypothesis H6. According to UNCTAD (2003) a reduction in the cost of transport directly stimulates exports and imports, just as an increase in the exchange rate make exports more competitive, and a reduction in national customs tariffs lowers the cost of imports. The same to this research finding, Aklile, (2017) implies that cost of multimodal transport is positively correlated with multimodal transport effectiveness with significance value $P=0.004$. The result of correlation of the above researches are related with my research hypothesis. Generally, costs that affect the overall multimodal transport service quality are sea- freight, inland transport, port handling, and clearance and demurrage costs. Based on the result of the research hypothesis there was truly reflection of the research hypothesis.

Hypotheses (H7)

Infrastructure is positively related and has significant effect on the overall multimodal transport service quality. Examining correlation matrix table 4.14, it is found that there is positive and significant association between infrastructure and overall multimodal transport system. Because correlation coefficient of the variables under study have positive correlation coefficient and $r=.551$ and significant at $p=0.000$. Therefore, we accept the alternative hypothesis H7. The same to this research finding, according to the study by Webishet , (2018) implies infrastructure is positively related at significance value $P<0.05$ with the overall performance of multimodal transport system which is the same with the study finding infrastructure has a positive and significance (.000) relationship with multimodal transport effectiveness Aklile, (2017).

Accordingly, increasing infrastructure service supports by providing adequate port and terminal facilities, sufficient trucks for inland transport, modern trucks for inland transport and tracking and tracing system of multimodal transport service will increase the overall multimodal transport service quality.

CHAPTER 5

SUMMARY, CONCLUSION & RECOMMENDATION

This chapter presents a summary of major findings, conclusions, and recommendations based on the analysis made in the previous chapter. Thus, the chapter is organized in to three sections as section 5.1 presents summery, section 5.2 conclusions and section 5.3 recommendations.

5.1 Summary of Major Findings

The Descriptive analysis of multimodal transport service quality dimensions are analyzed based on tangibility, reliability, responsiveness, assurance, empathy, cost and infrastructure by using modified SERVPERF model, which only consider the perception or performance part of multimodal transport service provided by the ESLSE. According to the result obtained from chapter four the researcher was summarized and presented as follows:

On average all respondents or customers agreed on the reliability dimension of multimodal service quality out of the five items except ESLSE document errors amendment timely when cargo hold at Djibouti and employees shows a sincere interest in solving problem on the three items customers are agreed or satisfied with the service provided by ESLSE at the head office, related to tangibility dimension of multimodal service quality all respondents are agree or satisfied with multimodal service provided by ESLSE at head office, related to empathy out of five items employees in ESLSE provide you adequate information when service request and employees gives individual attention they shows customers are dissatisfied; customers are satisfied on cost and infrastructure dimension of multimodal service quality provided with ESLSE and related to infrastructure dimensions of multimodal service quality except ESLSE have sufficient trucks and adequate mode of transport of inland customers are agreed.

The analysis result indicated that on tangibility, responsiveness, assurance & cost dimension customers were agree level, relatively on reliability, empathy and infrastructure service quality dimension customers were disagree to the service provided by the organization. The correlation matrix result shows multimodal customer satisfaction (dependent variable) has direct and positive relation with reliability, tangibility, responsiveness, assurance, empathy, cost and infrastructure multimodal transport service quality dimensions (independent variables). The

model summary result depicted that the model (independent variables) explains 73.3% of the variance in multimodal customer satisfaction (dependent variables).

5.2 Conclusion

In conclusion, companies can benefit from the fact of knowing how customers perceive the service quality and knowing the way of how to measure service quality. Therefore, the management can use the specific data obtained from the measurement of service quality in their strategies and plans. This will help organizations to better understand various service quality dimensions that affect overall customer satisfaction. In this way, ESLSE can better assess the service provided to customers on each service quality dimension to provide better service to their valuable and loyal customers. Thus, understanding customer satisfaction with service quality is very important in this competitive business environment.

Based on the findings we can conclude that tangibility reliability, responsiveness, assurance , empathy, cost and infrastructure dimension of multimodal transport service quality has positive and significant effect on customer satisfaction and customers are agree on some dimension like tangibility, responsiveness and assurance, dissatisfied on reliability dimension service quality and neutral on the empathy dimension service quality provided by Ethiopian Shipping and Logistic and Service Enterprise at the head office in Addis Ababa.

5.3 Recommendation

On the basis of the findings of the study, the researcher has forwarded the following recommendations:

- ✚ ESLSE should give due emphasis to improve reliability of multimodal service quality dimension in document errors amendment timely when cargo hold at Djibouti because of document discrepancy and employee show sincere interest in solving a problem. This items related to employee performance of the company and ESLSE must be proactive to minimize and give serious attention to amend document errors by doing this company can minimize or avoid unnecessary demurrage and storage costs at Djibouti. And ESLSE should clearly provide appropriate training to employees how to serve customers and how to effectively enhance their performance to satisfy their loyal customers.

- ✚ ESLSE should also improve the empathy dimension of multimodal service quality such as employees in ESLSE provide you adequate information in the service you request and ESLSE employees give you individual attention. Empathy is caring and personalized attention that the firm provides to its customers and has been found to be important to customers of the company.
- ✚ ESLSE should be provide sufficient trucks for inland transport and provide adequate mode of transportation for its customers to improve infrastructure of multimodal service quality dimension this show customer need from ESLSE to provide sufficient trucks and to provide adequate mode of transportation for its customers.
- ✚ ESLSE must be providing cargo tracking system has to be installed customer to follow the status of the cargo at each stage of border crossing.
- ✚ ESLSE must be enhanced through avoiding old trucks and using modern equipment.
- ✚ ESLSE should reduce inland freight costs.

Generally provide appropriate training related to customer service and closely follow up or supervise employee's performance to improve customer's satisfaction. In addition to these, the company can raise the employee's willingness and awareness thorough knowledge sharing and discussion. Knowledge and experience sharing at work place will enhance employee's skill and how to serve customers.

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Appendix

Survey Questionnaire for Customers

St. Mary's University School Post Graduate Studies

A Survey Questionnaires for research project to be conducted in partial Fulfillment of MBA in Marketing Management at St. Mary's University

This survey is required to study the effects of multimodal transport system in Ethiopia for imported goods, in the case of Ethiopian Shipping & Logistics Services Enterprise.

Please note that, the information provided will kept confidential and used for academic purposed only. Your cooperation in completing the survey questionnaire by providing quire and reliable information is highly valuable and greatly appreciated. Thanking you in advance for giving your time and sharing experience.

Part I

Direction: Please put a Circle appropriately:

1. Gender

A. Female B. Male

2. Age

A.18-30 B.30-40 C.40-50 D.above50

3. Educational Background

A. High school D. Masters
B. Diploma E. Doctorate (Phd)
C. Degree

4. Type of your Business

A. Private Limited Company D. Joint Venture
B. Share Company E. Governmental
C. Partnership

5. How many years you have worked with Ethiopian Shipping & Logistics Service Enterprise.

- A. Less than 5 years
- B. 5 years upto 10 years
- C. 10 years upto 15 years
- D. 15 years upto 20 years
- E. Above 20 years

Part II. Measure the effects of Multimodal Transport Service Quality as per the following Measurement Variables (Make tick) appropriately)

No.	Multimodal Transport Service Quality Measurement Indicators	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I. Reliability(R)						
1	Multimodal transport is offering the service adequately as promised					
2	ESLSE provides timely response to customer regarding complain in cargo delay					
3	ESLSE clear cargos from Djibouti port timely					
4	ESLSE amend document errors timely					
5	When your cargo hold at Djibouti, employees shows a sincere interest in solving the problem					
No.	Multimodal Transport Service Quality Measurement Indicators	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
II. Tangibility(T)						
1	ESLSE supported by online container tracking and tracing system					
2	ESLSE payment method supported by IT system					
3	ESLSE has sufficient cargo safety protection equipment's at dry port					
4	ESLSE has enough modern equipment					
5	ESLSE physical facilities are visually appealing					
No.	Multimodal Transport Service Quality Measurement Indicators	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
III. Responsiveness(Re)						
1	Employees provided your prompt service					
2	ESLSE release proper document on time					
3	Employees are always willing to serve you					
4	ESLSE have adequate number of employees to response for your request					
5	ESLSE employees are always cooperative					
6	Multimodal transport provide services with best professionalism					
No.	Multimodal Transport Service Quality Measurement Indicators	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
IV. Assurance(A)						
1	Employee have sufficient knowledge to answer your					

	question					
2	ESLSE employees are always courteous to you.					
3	ESLSE clear your cargo from Djibouti with shortest transit time					
4	The average waiting time of containers in port is low					
5	ESLSE cover cargo damage timely					
6	Forms provide by ESLSE are easily understandable					
No.	Multimodal Transport Service Quality Measurement Indicators	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
V. Empathy(E)						
1	ESLSE employees are polite					
2	Employees in ESLSE provide you adequate information in the service you request					
3	ESLSE employees gives you individual attention					
4	ESLSE working hours are convenient to its customers					
5	ESLSE employees easily understand your specific need					
No.	Multimodal Transport Service Quality Measurement Indicators	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
VI. Cost(C)						
1	Cost of sea freight is reasonable					
2	Cost of inland transport is reasonable					
3	Cost of storage at dry port is reasonable					
4	Cost of demurrage at dry port is reasonable					
5	ESLSE charges fair price for the service provide					
No.	Multimodal Transport Service Quality Measurement Indicators	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
VII. Infrastructure(I)						
1	ESLSE have adequate port and terminal facilities & corresponding facilities					
2	ESLSE has sufficient trucks for inland transport					
3	ESLSE has modern trucks for inland transport					
4	ESLSE have dry port cargo tracking and tracing system					
5	ESLSE provide adequate mode of transportation for its customers					

Part III Level of Customer Satisfaction

The following statement describes you're feeling about Ethiopian Shipping and Logistics Service Enterprise.

No.	Overall Satisfaction level	Strongly Dissatisfied	Dissatisfied	Neutral	Satisfied	Strongly satisfied
1	Over all Multimodal Service, on the quality of ESLSE provided you are satisfied.					