ASSESSING THE PRACTICE OF MULTIMODAL TRANSPORT OPERATION SERVICE IN ETHIOPIAN SHIPPING & LOGISTICS SERVICE ENTERPIRSE

By: ABEBE DEBOLAW

A Thesis submitted to Addis Ababa University School of Commerce in Partial Fulfillment of the Requirements for the Award of Master of Arts in Logistics and Supply Chain Management

June, 2020

Addis Ababa, Ethiopia

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APROVAL BY BOARD OF EXAMINERS

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Name Internal Examiner	Date and Signature

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STATEMENT OF CERTIFICATION

This is to certify that M/S Abebe Debolaw who carried out his research work on the topic entitled "Assessment of the Practical of Multimodal Transport Operation Service in Ethiopian Shipping and Logistics Service Enterprise" is his Original works and is suitable for the submission for the award of Masters Degree in Logistics and Supply Chain Management.

Certified by:

Matiwos Ensermu (PhD) _____ _____

Signature Date

STATEMENT OF DECLARATION

I Abebe Debolaw, hereby declare that this is Originally Produced by me with the guidance of Dr. Matiwos Ensermu. I confirm also that all the references of other people's work referred and ideas adopted are fully acknowledged at reference sections. No part of this thesis has either been presented whole or in part to any other institutions for any award. I take full responsibility for any errors that may be included in this report.

_____

Abebe Debolaw

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First and foremost I would like to thank the Almighty God for move I made. Everything is possible with him. Who shield and put me on the right path on every circumstance in my life.

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ACRONYMS/ABREVATIONS

AIAA	American Institute of Aeronautics and Astronautics
ASEAN	Associations of Southeast Asian Nations
BPBS	Bank of Post Business Section
BPBS	Bangkok Post of Business Service
CDOT	Colorado Department of Transportation
DSGI	Descartes systems Group Inc
E.C	Ethiopian Calendar
ESLSE	Ethiopian Shipping and Logistics Service Enterprise
EUTRP	European Union Transportation Research
FNGP	Federal Negarit Gazeta Proclamation
ICC	International Chamber of Commerce
ICOTERMS	International Commercial Terms
ICT	Information Communication Technology
MPIE	Multimodal Performance in Ethiopia
MTO	Multimodal Transport Operator
MTS	Multimodal Transport Service
MTSB	Multimodal Transport Service Business
OPMTS	Overall Performance of Multimodal Transport System
PTI	Professional Testing Inc
RHUD	Random House Unabridged Dictionary
TEU	Twenty foot Equivalent Unit

Abstract

International multimodal transport is one means of facilitating efficient and cost effective transit logistic service of country's for international trade. ESLSE has been designated as a sole Multi Modal Operator (MTO) in the Country. Not only as land locked country like Ethiopia but also internationally, most of countries get benefit of multimodal transport that can minimize logistics cost and transit time due to Cargoes can be moved from one country to another with single administration document (SAD) and one multimodal operator. Most of reviews of literature show that the implementations of multimodal transport system in Ethiopia have been bottle nicked by various problems. These problems include poor existing infrastructure and lack of basic infrastructures, congestion of dry ports, inefficient and ineffective freight vehicles, long and inefficient custom clearance process and lack of competition in multimodal transport due to this the standards of gracing paired and dwelling time was unable to attain. This study was made with the main objective of evaluating the practice of multimodal transport service in Ethiopian Shipping and Logistics Services Enterprise. In order to achieve this objective, has used explanatory research design and employ mixed research methodology in order to triangulate the data's (Quantitative and Qualitative). To collect data from respondent and other sources, this study used primary and secondary sources of data.Out of the 159 questionnaires distributed only 138were successfully returned back.The data was collected using questionnaire and interview, and data was analyzed using descriptive statistics and interpretation with the support of secondary data the finding of the research showed that the majority of customers were either disagreed or strongly disagreed with the many of performance indicator according to the study result recommended severely that the need to improvement of multimodal transport service infrastructure. This will provoke the need for furthers research at national level in order to assure the theoretically supported effect of the multimodal transport service.

CHAPTER ONE

1. Introduction

1.1. Backgrounds of the Study

All over the world, the transportation system is one of the key drivers in the freight distribution system(Amentae, 2015).The multimodal transport services are being recognized for their dominant role in the globalized economy, and the operation will continue to affect the current international trade environment. Multimodal transport service commonly known as combined transport is the transportation 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 (Ford, 2006).

According to (UNCTAD, 1981), the notion of multimodal transport services encompasses the door to door movement of goods under the responsibility of a single transport operator. According to the information revealed by the ESLSE, Ethiopia as one of IMO (International Maritime Organization) member's multimodal transportation system has been implemented since 2012 and currently near to 70 percent of imported cargoes is transported through multimodal transportation system (ESLSE, 2016). Hoeks (2009) states that through time shipping and logistics had shown remarkable improvement and continued to play its vital role in the development of international trade.Increasingly, goods, particularly manufactures, are carried across the globe by means of multimodal transport. Contractual arrangements too have been affected by this trend and increasingly reflect a demand for more integrated transport services.

Most of the European countries can broughtmultimodal transportations system to increase the transport volume and to minimize the dependability on the road transport because in Europe, the highest transport movement has been made through road transport (EUROSTAT Transport Logistics, 2013). This because, shippers and consignees often prefer to deal with one party (the multimodal transport operator), who arranges for the transportation of goods from door to door and assumes responsibility throughout, irrespective of whether this is also the party that actually carries out the different stages of the transport (UNCTAD, 2003).

Similarly, to users, participation of developing countries in the use and provision of multimodal transport and logistics services varies widely, with Small Island, landlocked and least developed countries not effectively participating at all. The latter do not usually have companies that provide such services, and nor do international providers usually offer such services in these countries (Vishwakarma, 2010). Global transport networks, containerization, and the increased use of transhipment via hub airports and seaports have led to a situation where practically all urban centres have some transport connection to global markets. However, in many developing countries, these transport services are not usually multimodal, nor can they be considered to be part of a logistics service (World Bank, 2017).Same is true in the case of Ethiopia where the logistics sector which incorporates multimodal transportation is on an infant stage like most of the least developed countries.

Ethiopia is the most populous landlocked country in the world. The main gateway of the import and export of the country's cargo is via Djibouti port. The government of Ethiopia implemented a multimodal transport system in 2012 to increase both the import and export expansion (Mulugeta, 2017).

1.2. Statements of the Problem

The government of Ethiopia has been implementing a Multimodal Transport System since January, 2012 to realize the GDP II related to Multimodal Transport system. In this system, Ethiopian Shipping and Logistics Services Enterprise (ESLSE,2016), a public enterprise, has taken this national responsibility to manage the Multimodal Transport system in transporting cargo from abroad which was explained on the profile of ESLSE. The Multimodal Transport System is a concept aimed at improving trading efficiency and to transform the relationship between trading partners and international carriers under a single liability system, leading to better command, control and coordinated transport system. Fekadu (2013) on the assessment made about Logistics practice in Ethiopia, he summarized in his study that Ethiopian logistics system is characterized by poor logistics management system and lack of coordination of goods transport, low level of development of logistics infrastructure and inadequate fleets of freight vehicles in number and age, damage and quality deterioration of goods while handling, transporting and in storage.

The ESLSE agents are one of the main partners and contributors in the logistics services of the enterprise and multimodal transport operation. The major responsibilities of the shipping agents are: a) ensuring the principal's requirements are performed with the utmost efficiency and effectiveness through coordination and reporting of cargo booking with shipper or supplier on behalf of the Ethiopian receivers, b) in order to fully meet with Ethiopian's FOB (Free on Board) directives, preparing stowage plan, preparing cargo lists, ready to be used by ship's Master and stevedores, c) coordinating of the loading operation at all ports in close consultation with the Master and ESLSE head office, d) physical attendance during loading at all ports and assisting the Master and coordinating all stevedores' matters during the entire loading operation, e) meeting and consulting with the stevedoring prior to vessel arrival, f) supply of spare parts for avoiding delay of the shipping schedule, g) managing of delivery order, h) supplying and coordinating the (pre) loading survey and tallying, and i) preparing bill of lading, cargo and freight manifest (ESLSE, 2016).

Given that this is a multifaceted operation, if any of the various steps are affected in a negative or positive way, this will in turn have an influence on the entire network partners such as shippers, enterprise, customers, and the agents (Chao, 2011). Since, transportation operation becomes more integrated through a combination of various transport modes, methods, and networks, their influence on values will become more complex, and services provided by multimodal transport operator would be very competitive across the industry (UNCTAD, 2003).

On contrary to the above national objectives, there are symptoms of Multimodal Transport System inefficiencies as media (The grievances of the business community were publicized by articles written on Ethio-herald local newspapers, January4,2020 and studies by (Tagel, 2014, Akililu, 2017, Selamwit, 2017; kalikidan, 2017) as shown in enterprise's made about Logistics practice in Ethiopia, he summarized in his study that Ethiopian logistics system is characterized by poor logistics management system and lack of coordination of goods transport, low level of development of logistics infrastructure and inadequate fleets of freight vehicles in number and age, damage and quality deterioration of goods while handling, transporting and in storage. Following from the analysis made during the assessment, they recommended that there is an urgent need for research on the logistics gaps identified, and human resource needs in freight transport and logistics needs of the country.

What the study gap is, while most of the former research such as (Tagel, 2014, Akililu, 2017, Mulugeta,2017, Selamwit, 2017; and kalikidan, 2017 and) has been focusing on and evaluating the assessment, factor, challenges of multimodal transport service is related to customers but, not considered the magnitude of the shipping agents in the multimodal transport operation service to customer by ESLSE agents. Moreover, most of the researcher's respondents are government officials. Hence, the result of those studies may not necessarily reflect the attitude of private companies, transistors and shipping agents.

Therefore, the current study is important to assess the actual practice, identify the challenges of multimodal transport operations service, and illustrate how the ESLSE solving these coordination of cargo transportation, delivery of cargo both in quality and quantity, adequacy by fleet of vehicles from discharging port/Djibouti to dry ports, the coordination in ICT, availability of qualified experts in the logistics services, applicability of logistics infrastructure, availability of enough containers, sufficient logistics management, lengthy of the documentation process and monopolized the sea transport and logistics services.

1.3. Research Questions

To address the research topic, the following research questions are formulated:

1. What are the current practices of multimodal transport operation service by ESLSE to customer?
2. What is the applicability of multimodal transport operation service of ESLSE in the trade routes operation from origin to destination?
3. What are the challenges prevailed in the multimodal transport operations system?
4. How do the network partners contribute to ESLSE solving these challenges?

1.4. Objectives of the Study

1.4.1. General Objective

The general objective of the study is to assess the practices and challenges of multimodal transport operations system and come up with possible and applicable recommendations based on the findings obtained from the study.

1.4.2. Specific Objective

The specific objectives of the research were:

1) To assess the current practices of multimodal transport operation service by ESLSE to customer.
2) To evaluate the applicability of multimodal transport operation service of ESLSE in the trade routes operation from origin to destination.
3) To investigate the challenges prevailed in the multimodal transport operations system.
4) To navigate how the network partners, contribute to ESLSE solving these challenges.

1.5. Significance of the Study

The outputs of this study will have paramount importance because of the inefficiency multimodallogistics service of the country and it is expected to help the ESLSE to identify the key Obstacle in the transport operation of the services. Once the enterprise knows those challenges, it can also apply the possible recommendations provided based on the findings obtained or formulate own policy actions to tackle the problems. Therefore, the outcome of the study can provide recommendations to Ethiopia Shipping and Logistics Service Enterprise (ESLSE) to improve how it manages the business. The policy makers, academicians, researchers, and potential service users who directly or indirectly involve in the trade logistics would be benefited from this study if they make use of the outcome.

1.6. Scope of the Study

Naturally the research topic is vast in its scope. Despite the time and budget constraint the researcher had, the researcher could not have addressed all the dry ports found in Ethiopia and Djibouti office. Due to this fact, the research only covered customers located only at main head office of ELSE and private companies, transistors and shipping agents in Addis Ababa. The researcher believes that better research outputs could be obtained if the research had incorporated all the operational sites of multimodal transport operations service.

1.7. Delimitation of the Study

This study was delimited in geographical location which is only included two dry port from out of seven dry ports that is Modjo and kality customer out of seven dry port constructing and

taking population size i.e. only considering multimodal transport service customers and managements from ESLSE who are directly involved in Multimodal transport system.

1.8 Definition of Key terms

Modes of Transport: The method of transport used for the movement of goods, e.g. by rail, road, sea or air.

Means of Transport: The vehicle used for transport e.g. ship, truck, or aircraft.

Types of Means of Transport: The type of vehicle used in the transport process, e.g. wide-body, tank truck, passenger vessel, etc.

Un-modal Transport: The transport by one mode of transport only, where each carrier issues his own transport document (B/L, Air waybill, consignment note, etc.).

Combined transport:The transportation of goods in one and the same loading unit or vehicle by a combination of road, rail, and inland waterway modes.

Multimodal Transport:

Where the carrier organizing the transport takes responsibility for the entire door-to-door transport and issues a multimodal transport document. Multimodal transport is therefore a concept which places the responsibility for transport activities under one operator.

Freight forwarder: "A freight forwarder, or forwarding agent, is a person or company that organizes shipments for individuals or corporations to get goods from the manufacturer or producer to the market, customer or final point of destination" RHUD (1997).

Shipper: "Someone who sends goods for shipment, by packaging,labelling, and arranging for transit, or who coordinate the transport of goods" DSGI (2018).

Tracking: "A carrier's system of recording movement intervals of shipments from origin to destination." DSGI (2018).

Twenty Equivalent Units (TEU) or 20": "A measure of shipping container's capacity using a standard 20-foot international ocean shipping container as a measuring unit." DSGI(2018).

Logistics: It is an integrated flow of goods & services & information in the supply chain process.

Multimodal Transport Services: - it is a transportation service provided by using at least two or more modes of transport in a single chain of transport with a single transport contract and single multimodal transport operator.

Multimodal Transport Operator: - a multimodal transport company which provides integrated international freight transport services using different modes of transport.

Agents: A company/individual authorized to transact business in the name of another individual or company.

Shipper: An individual or company who is the owner of commodities shipped. All shippers, service providers, shipping agents and customers are links in the supply chain. System found in different places including the Djibouti coordinating office.

1.9 Organization of the Study

The study was categorized in five Chapters. Chapter presents the introduction and gives back ground information about the nature of the research; the second Chapter, the review of related literature was accessed basic concepts, measurement variables, and other related concepts critically essential to the study. The third Chapter was presented the research methodology, approach and designs. Under this section, research approaches, methods of data collection, sampling designs and techniques, and methods of data analysis and presentation were assessed. The fourth part was analyzed the data collected through survey questionnaire and second hand information using various statistical measurement tools depending on the characteristics of variables used on the study.

The final section provided conclusions and the actions required solving the problems arising from the finding of the study.

CHAPTER TWO

Literature Review

Introduction

The purpose of the literature review is to provide insight into information from previous researches related to this study and the research questions which will facilitate the research process (Rowley, 2012).The literature review part of this study has theoretical literature review and empirical literature review parts. The theoretical part presents the summary of theories forwarded by different scholars pertaining to the subject under study at different times. Whereas the empirical part contains summary of similar or related research findings obtained from other earlier researches.

2.1Theoretical Literature Review

2.1 Theoretical concept of Multimodal transports operations systems

The introduction of international transport operation and container services had contributed to the development of trade in the world (Cullinane et al, 2005). The United Nations Convention on Trade and Development (UNCTAD, 1981) was defined the concept of 'Multimodal Transport' 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.

Therefore, the concept of Multimodal transport, facilitates the origin-to-destination freight transport service under a single operator's responsibility using more than one mode of transport, is a natural extension of containerization. However, the inland transport system element of international freight transport impedes international trade in many least developed countries, (UNCTAD, 1994). Transport companies involved in international trade have been developing for several years and creating modern technologies to enable more efficient distributions along multiple modes of transport.

The development of new transportation systems, such as containerized shipment and other unitization of goods led to modification in transport activities. Under one bill of lading or contract, once the product sailed in a container cannot be unpacked for verification, even the service given in different transportation modes such as a ship, road vehicles and railway (UNCTAD, 2013). Multimodal transport is the way of movement of cargo efficiently and faster from one place to another. To this end, more than one kind of vehicle necessary to deliver the goods from origin to destination by using trucks, trains, ships, and airplanes.

According to the ESLSE (2014), currently ESLSE is administering seven dry ports including Modjo dry port and it was found out that main Services given at the Dry port are: handling the import-export good, loading and unloading import-export goods, containerizing goods and unpacking containerized goods, serving as a temporary storage place, giving weigh bridge service, container wash and maintenance service, custom clearance service, banking and insurance service. Modjo dry port is a major dry port in Ethiopia started operation in 2009 with the continuously growing cargo volume, the port is linked to the main Addis Ababa-Djibouti main rail road with two rail lines.

The other one is the current Kaliti branch of ESLSE Was previously organized as Comet Transport Share Company. It is located in Addis Ababa at Kaliti sub city Kebele 11 and advantageously situated next to Addis Djibouti road close to the southern ring road. Originally, it provided the following types of Services: freight transport, Maintenance, Warehousing & Cargo Handling, Dry Port facility, and others. Among these services the proposed study is concerned with the company's Dry Port Service. The - company has developed a dry port service to facilitate Import & Export in the country by providing an integrated logistics service.(Yodit.R(2016);Abdurezak.M(2016))

Dry Port Services Enterprise was established by the Council of Ministry Regulation No. 139/2007 with the objective of facilitate the country import/export and minimize the congestion at the port of Djibouti. A Dry Port (sometimes inland port) is an inland intermodal terminal directly connected by road or rail to seaport and operating as a centre for the transhipment of sea cargo to inland destinations. In addition to their role in cargo transhipment, dry ports may also include facilities for storage and consolidation of goods, maintenance for road or rail cargo

carriers and custom clearance services. (ESLSE Statistical Bulletin, EFY 2000-2007). There are Seven dry ports in Ethiopia; these are mentioned namely and their capacity under table 1.3.

Table2.1 Dry Port and Terminal area and carrying capacity

Dry Port	Area in Hectare	Terminal Capacity in TEU
Modjo	23.67	12675
Kality	3.20	1260
Gelan	4.00	2352
Kombolcah	8.00	3776
Mekelle	3.05	1439
Dire Dawa	0.80	288

Source: ESLSE Statistical Bulletin (EFY 2000-2007)

The Dry Ports are equipped with port machinery: 18 reach stackers, 47 forklifts, 1 crane, 3 empty container handler, 11 terminal truckers and 18 terminal chassis.

The average dwell time of cargoes at dry port reached 50 days, which is the challenge for the productivity of the dry ports (ESLSE unpublished report).

According to Islam (2005), if there is not port and terminal competition, the quality of services is restricted and transit time and transport costs increased. On the other hand, the inland transport market is virtually enjoying an effective competitive regime, which is free from government restrictive regulation.

2.1.1VesselsTransport of Multimodal Development

Vessels transport of multimodal development requires, apart from operational and infrastructural features, a conducive administration and legal environment, and efficient interchange of information (D'Este, 1996). Developing such an integrated transport system is challenging in particular in developing countries. The challenges can be categorized and discussed in six major areas: globalization of trade and investment, the role of government, new technology and

methodology, standardization, changes in logistics concepts and changes in the inland transport system (Islam and Gray, 2003).

2.1.2 Types of Cargos

According to the report of Port of Aantwerp (2017), cargos are categorized in to container cargo, liquid bulk, dry bulk, break bulk, and ro-ro. Depending on the nature of cargo type they have, they are described in the following manner.

2.1.2.1 Container Cargo

Container is a large standard size metal box in to which cargo is packed for shipment a broad specially configured transport modes Rodrigue and Slack (1998). Containers are loading and transporting goods with different methods (land, sea, air…). Having a logical operator in charge of selecting the most appropriate one is essential for our goods to reach their destination in perfect conditions Bilogistik (2016). Toys, televisions, DVDs, clothing, meat and computers; containers are the best way to transport these and many similar products. Container shipping is different from conventional shipping because it uses containers of various standards sizes -20 feet (6.09gm), 40 (12.18m), 45 feet (13.70m), 48 feet (14.60m), and 53 feet (16.15m) to load, transport, and unload goods. As a result, containers can be moved seamlessly between ships, trucks and trains. The two most important, and most commonly used sizes today, are the 20 feet and 40 feet. In addition to this based on their type containers are divided as flat rack, open side, open top and tank Prabhankar (2016). The fixed size of the containers also has a major advantage. The standard sizes mean containers fit on sea-going vessels, Lorries, inland barges and train wagons.

2.1.2.2. Liquid Bulk

Crude oil, petrol, fuel oil, vegetable oils and even wine; all liquid products which are often transported on big tankers or through a pipeline to the next destination Port of Aantwerp (2017)

Liquid forms of bulk are measured by weight or volume (primarily tones). Commodities like crude oil, gasoline and miscellaneous chemicals are common liquid bulk cargos.

2.1.2.3. Dry Bulk

Dry bulk refers to grain, coal, iron ore, cement, sugar, salt and sand. They are not packaged separately, but transported in large quantities in the hold of a ship, wagon or lorry.

(ESLSE Statistical Bulletin, 2010)

2.1.2.4. Break-Bulk

Break bulk is a term used in the shipping industry. It refers to cargo that needs to be individually loaded. Break bulk cargo cannot be shipped in inter- modal containers or in bulk, like grains or oil. It has been the most common type of cargo since the beginning of the service. In modern times, container shipping has become more popular and break bulk has declined. A bulk of cargo is broken down in to groups that can be easily loaded using equipment available at the port. Break bulk cargo is often shipped on pallets, barrels, drums (cylinder), boxes or bags ((ESLSE Statistical Bulletin,2010)

2.1.2.5. Ro-Ro

Ro-Ro refers to roll on / roll off. This name explains how the cargo is discharged and loaded. This concerns cargo that can be driven which is only done by especially trained drivers. Ro-Ro is used for cars, busses, trucks, agricultural vehicles and cranes. To transport as many of these vehicles in one go, enormous ro-ro vessels have been built. Some ro-ro vessels have enough room for more than 8,500 cars In the Antwerp port area, ro-ro is chiefly on the Left bank.

(ESLSE Statistical Bulletin.2010;).

2.1.2.6. Steel profile

It is a type of Break Bulk cargo is non-containerized and usually transported as individual pieces due to cargo often being oversized and overweight meaning freight container cannot accommodate cargo. (ESLSE Statistical Bulletin2010;).

2.1.3. Operational Performance of Multimodal Transport in Ethiopia

Table2.2 Annual Operational Performance of ESLSE

Service type		Years			
	measurement	2014	2015	2016	2017
Imported goods by ESLSE	Ton	2,767,053	3,340,135	4,966,265	4,538,722
Imported goods by ESLSE vessels	Ton	1,104,813	998,597	952,628	603,237
Proportion (ESLSE vessels/ total import)	%	39.93	29.9	19.18	13.29
Imported containers by multimodal transport	TEU	88,559	120,404	175,672	179,170
Imported vehicles by multimodal transport	Unit	4,225	10,636	14,736	9,464
containers served at dry port	TEU	84,869	114,369	162,047	169,241
vehicles served at dry port	Unit	4,183	8,275	13,224	8,507

Source: (Annual Statistical Bulletin 2010,)

As indicated in the above table above imported containers by multimodal transport service was increased from 88,559 containers in the year 2014 to 179,170 containers in the year 2017. The import of vehicles also shows increase from 4,225 units in the year 2014 to 14,736 units in the year 2016 and decreased to 9,464 units in the year 2017. In addition to this, containers served at dry ports were also increased at increasing rate from 84,869 containers to 169,241 containers in the year 2014. This is an indication that the using multimodal transport has increased from year to year. This implies that the need for multimodal transportation is to increase in higher rate in incoming years. Therefore ESLSE should be capacitated to handle these volumes of cargoes (Aklile,2017)

As it can be seen from the table below, the number of the containers transported by ESLSE from Djibouti to inland ports is highly increasing from 2004 to 2010E.C.This is in line with the increasing trend of the country's import trade at the indicative hear.

Table 2.3.Total containers forwarded by freight forwarding sector last seven years with multimodal mode of transportation service

EFY	2004	2005	2006	2007	2008	2009	2010
To inland port	270,084	67,389	88,559	113,672	165,577	168,857	163,736
To bonded warehouse				6,856	9,338	10,312	10,175
Total	27,084	67,389	88,559	120,528	174,915	179,170	173,911

Source:ESLSE;2010EFY:-Trends in TEU of the containers transported the last seven years by multimodal system from Djibouti to inland port

2.2 Empirical Literature Review

2.2Applicability of the multimodal transport operational services

Notwithstanding the numerous benefits unveiled by the multimodal transport service, it is not uncommon to see the challenging situations in the system. In most cases, these challenges prevail in developing nations than the developed ones. Debela(2013) notes that differences in trade and investment policies and regulations, legal and political environment, infrastructural facilities and lack of professional human resources are the basic challenge posed by different authors as factors affecting the normal operation of the system. Similarly,Bhat(2011) noted that multimodal logistics brings opportunities along several challenges. The areas sorted out by the author for the challenges are infrastructure, regulation, and technology, which demand quite an attention from stakeholders. The author posits that multimodal transport service has to grow quickly, where the majority of stakeholders need to invest time and effort in its development. The multimodal transport activities are done through the integrated operation of people and organizations located in different areas, and this could also be another source of challenge again for the system.

In this regard, Boweksok(2003),underlined the absence of international rules governing the successive carriage of goods as a challenge to the system, which would result in crucial problems in the field of carrier's responsibility and the liability for loss or damage to the goods shipped under the multimodal system. The multimodal transport system also has an environmental impact with the means of transport used in the multimodal transport operation. The system produces chemicals which can easily pollute the natural environment.

According to Vishwakarma(2010), identified three sets of activities associated with transportation vehicle operations, equipment maintenance, and facilities operations which can have negative impacts on the environment. Further, the author noted that in addition, transportation infrastructure construction and expansion often generate pollutants or endanger natural resources.

All over the world choice of transport mode is not only a choice between the type of transport but between the system and a process of transportation. To maximize the usage of transport being offered, transport companies should be able to match and synchronize the market requirements which will then have a major influence on the choice of transport mode (Boweksok, 2003).

Various measurements are required for implementation of a multimodal transport system. The three major elements of this are; transport infrastructure, administrative practice and commercial practice (Banomyong, 2000). The successful implementation of multimodal transport requires information systems, know-how related to the logistics management, technology, government coordination and commitment, and infrastructure (Dewan et al, 2006). The current Ethiopia laws require paper receipts to be issued for all transactions. In general, there is no legal framework in place to recognize documents exchanged electronically.Moreover, most of the trade transactions are not automated. The documents and regulations are not always available online (UNCTAD, 2013).

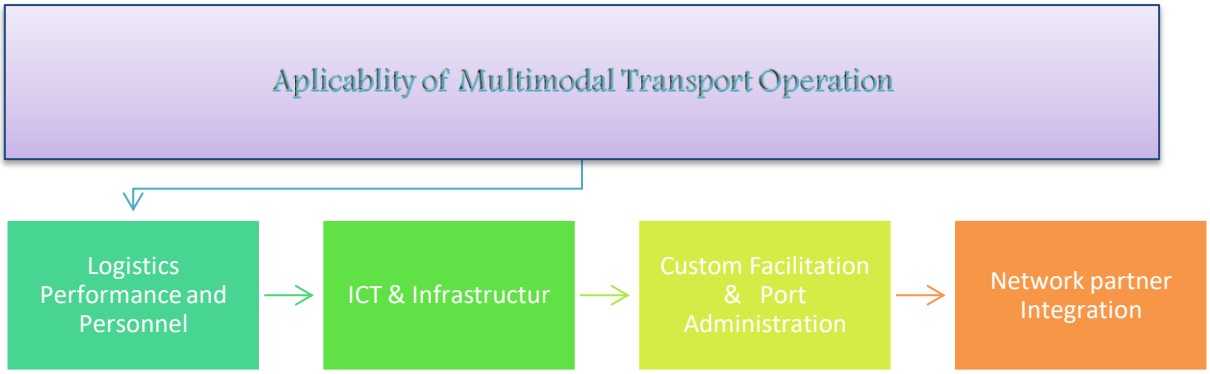
The applicability model connects all the theoretical concepts together which ultimately represents the below conceptual framework.

2.2.1Conceptual framework

The conceptual framework is the blue print of the research work that guides the researcher to conceptually understand the research and outline and operationalized the dependent and the independent variables so that the measurement, processing, analysis of the data and interpretation of the result been easy and meaningful.

The theoretical model is aligned with the research questions; the model emphasizes the pliability on one side and the contribution of the network partners to solving the applications of multimodal transport operational services on the other side as depicted by the (UNCTAD, 2003: 2013).

Figure 2.1 Applicability of Multimodal Transport Operation



Source: from (Cullinane et al, 2005;UNCTAD, 2003: 2013).

The challenges and the contribution process are noted by the arrows with straight and broken arrows. The arrows represented by the straight and broken arrow for the challenges and contributions respectively. The challenges are: logistics performance and personnel's, multimodal operation, ICT, infrastructure, network partner integration, customs facilitation, and port administration. On the other hand, the contributions are: Cost minimization, time and document burden reduction, increase customer satisfaction, and congestion minimized(Boeije, 2014).

The structure of Ethiopian imports has changed over time, from finished and lightweight products to a combination of light finished products and project-bound bulky cargo.The progress of road network important to link with the quantity and quality of the acquisitions of trucks. According to World Bank (2013), there are fewer private and enterprise-owned trucks are loading the container from the port of discharging up to the destination, in this operation the required weight of goods to be lifted and the number of trucks is not proportion. The total required number of trucks for transportation is 13500, but the available number of trucks range from 800 to 1500.

2.3. Enabling Environment for Multimodal Transport

Dewan et al (2006) described that government must ensure simple and flexible customs procedures to allow door-to-door movement of containerized cargo. Customs authorities have to develop a system or procedure to facilitate such movement. The introduction of Automated System for Customs Data (ASYCUDA) is improving the customs clearance system, but procedures should be simplified to facilitate quicker clearance of consignments (UNCTAD, 1996). To achieve an efficient multimodal system demands a concerted and integrated effort by all parties involved (Razzaque, 1997).

In the majority of developing countries, the policy to preserve transport rights for national flag carriers is misguided. According to UNCTAD (2003), cargo reservation for national flag carriers shields them from competitive pressures in the international ocean transport market, with the result that the cost of their services is higher than that of the international carriers. The loss to domestic importers and exporters is the difference between what they pay for the carriage of cargo and what they would have to pay in a free market (UNCTAD, 2003).

2.3.1 Infrastructures Role in Multimodal Transportation

The development of multimodal transport is inter-linked with the transport infrastructure facilitates. Means, the transport infrastructure is poor; the development of multimodal transport may not be easy (Banomyong, 2000). Infrastructure facilities such as seaports, railway, roads, and airports are supported the multimodal transport services in order to deliver the cargo safely and rapidly (Sanders, 1990). In most of the developing countries, inland transportation is not

linking with the port of loading, and this is one of the main obstacles to transport providers, the efficient multimodal transport requires the inter-connectivity between modes (UNCTAD, 2003).

2.3.2. Port Administration in Implementation of Multimodal Transport

The ports are the interchange points through the multimodal transport services and contribute to the seamless flow of goods. In interchange points, there is a need to coordinate several types of carriers such as ship operator, railway, and trucks. The interconnectivity between the ports and shipping operator has led to greater concentration of cargo moving through larger and fewer ports. On another side, the inland terminals are crucial like seaports (Wolfe, 2001).

2.4. Business Network

According to Ford and Håkansson (2011), every business is relationships because, all companies need other companies' resources and skills to operate their business, without relationships it cannot be produced and deliver the products.

It is emphasized by Partanen and Möller (2012), in order to offer the best possible product or service to customers, it is significant for the firm to co-operate within a network Therefore, this all will be done through the relationships between the company and its suppliers, development partner, customers and other partners. According to Holmlund and Törnross (1997) define the business relationship an interdependent process of continuous interaction and exchange between at least two actors in a business network context.As per Ford and Håkansson (2011) those partners and business relationships described by nodes and threads respectively, each node and thread has tied together in a variety of ways. The nodes and threads are filled with resources, knowledge, and understanding that each part will bring in to the network.

Ford and Håkansson (2011) more emphasis on the inter-dependency in relationships and they described how the interaction with others lead to a business relationship. The relationship has created through the interactions with others partner outside the company in order to solve their own needs and problems as well as to meet the needs of the final customers. Moreover, this relationship can be reducing the operational costs and administration costs, increasing profitability, speeding transactions, attain new client, increasing opportunities like partnerships, asset sales, learn the success of others and expanding knowledge. Consequently, the companies become dependent on each other's, this inter-dependency of the business partners lead to

business relationships. Therefore, these business relationships have provided an opportunity for companies to influence others. Hence, the business relationship will always influence other relationships in the network. To this end, one partner can try to influence the role and relationships of other (ibid).

2.5 Companies and Organizations Relationship

Ford and Håkansson (2011) described that relationships have substance not only related to negotiations and conversations, this substance is interacting. There are three dimensions that are very important in order to interact. First, ‘actors' refer who participate in the network it can be different companies and organizations. Second, ‘resources' are the assets used by the actors for instance in a customer to supplier relationships. Third, ‘activities' are what they actors do for the relationship (Ford, 2006).

2.6. The Importance of International Multimodal Transportation Operations System

The twenty first century will see a renewed focus on intermodal freight transportation driven by the changing requirements of global supply chains. The international multimodal transportation system has many practical benefits other than unimodal transport system in freight transport. Transport costs and transit time has been reduced greatly through adoption of effective international multimodal system in international transport activities. Furthermore, the technological advancements are also upgrading the international multimodal transportation’s service efficiency and effectiveness than ever.

According to Breda (2009) international multimodal transport system is better than unimodal transport system from legal perspective. The author pointed out five convincing legal reasons why a shipper opts to adopt a multimodal transport system and finally concludes that considering the variety of cultures, languages and commercial practices at both ends of a trade transaction and the resulting complexity of assembling such an international transport operation, it is likely to appear reasonable to a trader to let one qualified operator organize and be responsible and accountable for the entire transport chain. International multimodal transport system is needed by international business operators and the governments in order to facilitate their trade activities and reduce cost of trade between nations.

Further Ford & Håkansson (2011)appreciated the importance of multimodal transport raising its diligent and continuous search to reduce costs and improve customer service which resulted in the integration of all activities in the supply chain. It seems impossible to think multimodal freight transport without containerization concept these days. Over the last few decades' multimodal transport has evolved across various dimensions globally, the advent of containerization has greatly helped the promotion of multimodal transport. The ever-increasing containerization of freight in global trade promoted multimodal transport system greatly. One of the key benefits to containerizing freight is that it becomes possible to quickly and inexpensively transfer it from ship to rail to truck, without unloading the contents of the container itself (Partanen&Möller,2012).

2.6.1The Requirements of International Multimodal Transportation System

The adoption of multimodal transport system needs various structural changes in the economy. All way round infrastructural developments and liberalization of trade policies, rules and regulations to make it compatible with the international standards would be the vital improvements needed. That is the main reason that many authors in field advise the development of infrastructure and liberalization of trading policies and regulations in addition to increment of trade volume. Since the cost of multimodal infrastructural development is very expensive. In this regard UNCTAD (2003) noted five very essential areas to be seriously considered to improve the service quality and accessibility level of multimodal transport and logistics services.

2.6.2. Infrastructure and Technologies

In multimodal transport, the transport chain is usually containerized. Containerized cargo also requires less but better qualified personnel in ports, where reforms are still pending in many developing countries. It further requires port, rail and road infrastructure, as well as the corresponding regulations and labor regimes. In many developing countries, particularly least developed countries, these inland links are often incomplete and poorly maintained.

This is one of the main practical obstacles to transport providers offering multimodal transport. Electronic means of communication are used to exchange information, enter into contracts and trace goods during transit. Transport users and providers are using them internally and also to exchange information among them. Again, as with containerization in the past, there is a risk that

developing countries are late in the introduction of these new technologies, which require investment in equipment, as well as the corresponding legislation, regulation and capacity building. A successful example of the use of ICT in developing countries is the Advance Cargo Information System (ACIS)(Ford&Håkansson,2011).

Increased competition and private sector participation empirically tend to encourage investment in infrastructure and the introduction of new technologies. The public sector maintains an important role with regard to investment in public infrastructure such as national telecommunication systems or access to ports. Here, Governments may have to invest themselves, or they may concession the construction and operation of infrastructure, in which case a new regulatory role of the public sector is required.

2.6.3. Security and Safety

In the case of transport and international logistics, corruption, theft and accidents not only imply a direct cost, but also reduce the competitiveness of exports. Especially at ports and other nodes where cargo is shifted from one mode to another, security risks are particularly high. Uncertainty and also weak legal systems are thus particular obstacles to multimodal transport, where often an original carrier located in a foreign country is supposed to cover the entire risk of the entire transport chain(Breda, 2009).

Fear of terrorist attacks is leading to new regulations and legislation, which add further obligations to shippers and transport providers, especially for exports to the United States(Vishwakarma, 2010).These obligations imply additional risks for those who have to provide more detailed and timely information. Shippers have to guarantee to the carrier that the information given to him about the goods is accurate and that the carrier can use this information without risk of suffering a penalty or delay.

2.6.4. Trade Facilitation

Coherent trade and transport facilitation measures are necessary for the development of international logistics and multimodal transport services. The international movement of cargo and vessels involves a potentially large number of controls and inspections about security concerns, and to the extent that such controls take too long, or their duration varies arbitrarily, this becomes an impediment to the planning and operation of services.

Improvements depend on investments and reforms at the national level, and also on concerted efforts by international organizations such as the World Trade Organization and the World Customs Organization. With regard to customs, a successful example of trade facilitation is the introduction of an Automated System for Custom Data. At the bilateral and regional levels, there are successful experiences concerning information sharing. Common customs posts, for example, or the sharing of information related to the port state control of maritime vessels, reduce the need to assign personnel and improve the quality of controls(Partanen and Möller, 2012).

2.6.5. Legal Aspects

While much of international trade is now carried out on a door-to-door basis, under one contract and with one party bearing contractual responsibility, the current legal framework governing multimodal transport fails to appropriately reflect these developments. No international uniform regime is in force to regulate liability for loss, damage or delay arising from multimodal transport. Instead, the present legal framework governing multimodal transport consists of a complex array of international conventions designed to regulate unimodal carriage, diverse regional/sub regional agreements, national laws and standard term contracts. As a consequence, both the applicable liability rules and the degree and extent of a carrier's liability vary greatly from case to case and are unpredictable(Mulugeta, 2017).

Over the years several attempts have been made at drafting a set of rules to regulate liability arising from international multimodal transportation, but none of these has brought about international uniformity. In view of the absence of international uniform regulation of liability, there has been a proliferation of diverse national, regional and sub-regional laws and regulations on multimodal transport. The lack of a global uniform regime has obliged developing countries to resort to solutions at the regional and/or sub regional level, such as the laws and regulations prepared by the Andean Community, the Latin American Integration(Partanen and Möller, 2012).

Association (ALADI), the Southern Common Market (MERCOSUR) and the Association of South-East Asian Nations (ASEAN). While these laws and regulations are often based on the 1980 MT Convention and/or the UNCTAD/ICC Rules, significant differences on key issues

among the different sets of rules create a trend of further “dis-unification” at the international level(Partanen and Möller, 2012).

2.6.6. Market Access

Trade balances, the available transport mode options and economies of scale have particularly strong impact on transport costs. The more cargo and transport mode options a service provider has at his disposal, the better he is positioned to choose the most adequatelogistics mix of routes, transhipment points, frequencies, speed, volumes and transportmodes. Any restrictions that unnecessarily limit his choices will also imply higher costs and lower quality services for the transport user(Vishwakarma, 2010).

On many borders, transport providers are still obliged to transfer cargo from one truck onto another, just as different rail gauges make international rail traffic rare in developing regions. In order to protect the national road industry, it is common to prohibit foreign trucks from carrying return cargo after delivering imports; this is particularly costly for landlocked countries that depend on foreign ports. In maritime transport, cargo reservation regimes tend to make it impossible to use available capacity efficiently because it is prohibited to combine national, regional and intercontinental liner services so that they form part of a single global network.

2.7. Challenges of International Multimodal Transportation System

Multimodal transport system adoption requires infrastructural and human resource developments to support the efficient and effective operation of the new system. However, doing these improvements has not been seen simple to developing nations since it needs huge capital investment which cannot be carried by shoulder of their economy. Even after bypassing this stage, the service delivery may pose critical challenges to the service provider which can affect system’s efficiency(Ford and Håkansson, 2011).

CHAPTER THREE

Research Methodology

Introductions

This chapter discus the methodology of the research work thus, it has described the operational definitions of variable, research design, approaches and methods, data types and sources, sampling techniques, data collection methods and techniques of data analysis and presentation.

3.1 Study Area

Ethiopian Shipping and Logistics Services Enterprise (ESLSE) is one of government-owned business enterprise which was formed as a result of the amalgamation of three national companies. Namely, the former Ethiopian Shipping Lines S.C, Maritime and Transit Services Enterprise, and Dry Port Services Enterprise, that work for one same objective in a separate fashion together, and to that effect, the Council of Ministers' Regulation No 255/2004 was issued on November 21, 2011, to form a new Company named the Ethiopian Shipping and Logistics Services Enterprise which is a vessel owner, charterer, liner operator and multimodal service provider. To study the country's import and export trade demand and thereby develop technological capacity in order to render maritime and transit transport services. The Ethiopian Shipping and Logistics Services Enterprise established with the total capital of Birr 3.7 billion. Now, its capital reached to 22 billion. Currently, the enterprise has a total of 11 vessels 9 of them general purpose and two of them are tanker vessels, about 492 heavy trucks and dry port equipment.

Regarding the human resources, the organization has chief executive officer /CEO/ and four sectors led by the four deputy CEO's, namely: Shipping sector, freight forwarding sector, port &terminal sector and corporate services sector.

The following table shows the human resource of the enterprise (2014-2016)

Table3.1 Man power of ESLSE

Years	2014/15	2015/16	2016/17
manpower	3134	3178	3565

Source: ESLSE, Ethio-Logistics yearly Abstract (May, 2017)

3.2.Research Design

A research design is “a plan or blueprint of how you intend to undertake the research”(Creswell, 2013). Descriptive research design was adopted by this research. The descriptive research, aims to present a complete description of a subject within its context. Descriptive researches are often used when an amount of knowledge about the subject already exists, this knowledge can then be used to categorize into models and frameworks.

Consequently, the approach with in-depth interviews, document review and the use of questionnaire as data collection techniques were very useful in the study of the major constructs.

To accomplish the objectives of this study, a descriptive research design helps to describe both qualitative and quantitative research methods were applied. As (Bryman& Bell, 2015).has recently illustrated, mixed method approaches now provide rationale ahead of triangulation.

3.3.Research Approach

In This study, both qualitative and quantitative research approach was used. Because, mixed research approach is functional to confine the methods of both qualitative and quantitative data’s. According to Khumwong (2004 cited in Asrate,2011), certain types of social research problems call for specific approaches; and different people choose to use either qualitative or quantitative or both types depending on the topic of the study. Qualitative approach is suitable when the study is to understand concept and phenomenon; whereas, the quantitative approach used when the study is to identify the factors that influence the results, the utility of an intervention. Therefore, with this consideration, both approaches were adopted for this research purpose.

3.4.Target populations Sampling and Sampling Techniques

3.4.1 Target Population

According to Saunders, Lewis & Thornhill (2016), target population is said to be a specified group of people or object for which questions can be asked or observed made to develop required data structures and information.

Therefore, for this study, the target populations are 3000 total customers who are currently being private companies import and exporter and transistors in Ethiopiaand 69 of them are from Ethiopian Shipping & Logistics Services Enterprise employeeswhich is total 3000 of them were

included. Because, the eligible target populations has been added only they are employee who are currently working on operational process of multimodal transport operations related to have known how detail towards the Performance of Multi Modal Transportation Operation Service in Ethiopian Shipping & Logistics Services Enterprise.

3.4.2 Sampling techniques

Convenient sampling was employed for this study. The reason for using Convenient sampling is that first, save time and placing the population believed to be eligible about the variables researcher has been studying.

And second, researcher can raise precision of the estimate of the variables of the convenes population. This study considers companies import and exporter and transistors and permanent employees of the Ethiopian Shipping & Logistics Services Enterprise in Addis Ababa.In order to capture the basic concepts of the study the researcher use standard questionnaire used by (ESLSE,2018)

3.4.3 Sampling size

As Mike Slovin (2007), developed a means of determining sample size from large population and becomes representative possible sample size. By using the Mike Slovin formula with confidence level: 95%, degree of variability: 50% (Maximum Variability), sample error: ± 7% and makes easy to determine middle representative sample size from large population.

The total number of companies import, exporter and transistors in the city was obtained comprised 3000. To determine the appropriate sample size for the study; the researcher deals with three possible options which can provide different sample sizes. The basis for determining the sample size in each option is the level of precision or sampling error, the confidence level and the degree of variability in the attributes being measured. In this regard, the researcher used option 2 to determine sample size.Since the population is large the following simplified formula was applied:

$$n = N/ (1+N (e) 2$$

Where: N = Population Size n = Sample

Size e = Precision (Sampling Error): 7%

In this option the sampling error was decreased from ± 10%, ± **7%** to ± 5% so as to get the middle sample size options 2 is more appropriate.

Confidence Level = 95%

Degree of Variability = 50% (Maximum Variability)

Sampling Error = ± 5% Total Population =

Total Population = 3000.

The sample size is computed as follows:

n = N/ (1+N (e) 2) n = 2700/1+3000 (0.07)2

n = 138

No	Name of the department	Populations size	Study populations
1	companies import and exporter and transistors	3000	138 systematic random sampling
2	Ethiopian Shipping & Logistics Services Enterprise employees	69	15 representative sampling
	Total population	328	153

Table 3. 2: Target pupations for study,2020

To counter check the accuracy of the sample size number is 138. The required sample size determined at 95% confidence level and with 5% margin of error. By comparing the two results, the researcher chooses to use the sample size generated by Krejcie and Morgan formula i.e. the semi-structured and structured in-depth interview has been conducted with 15 permanent employees of Ethiopian Shipping & Logistics Services Enterprise experts and officials using representative sampling.

3.5. Data type and methods of collection

In an attempt to identify the Practices of Multi Modal Transportation Operation Service in Ethiopian Shipping & Logistics Services Enterprise and to provide possible recommendations, the researcher used both primary and secondary data sources.

Primary data was collected through direct observation, structured and semi-structured questionnaires and interviews. The semi-structured and structured questionnaires were filled by private companies import and exporter and transistors; and the semi-structured and structured in-depth interview has been conducted with Ethiopian Shipping & Logistics Services Enterprise experts and officials. In addition, personal discussion, and interview was made with these people in order to be acquainted with over all environment of the organization and efforts and performance made to Ethiopian Shipping & Logistics Services Enterprise employees.

According to Biggam (2008), primary source of data is the information that the researcher finds out by himself regarding a specific topic using questionnaires. Secondary source was gathered from related decree, regulations, office manual and documents. The main advantage with this type of data is that is collected by the research's purpose in mind. It implies that the information resulting from it is more consistent with the research questions and objectives. The primary data will be gathered particularly by using likert scaled standard questionnaires.

The Likert-type scale method uses a range of responses: 'Strongly Disagree', 'Disagree', Moderate disagreed, Moderate agreed 'Agree', and 'Strongly Agree', with a numeric value of 1-6, respectively. The usage of this particular scaling method ensured that the research study illustrate the ability to assess the responses and measure the responses quantifiably. So that, a pattern or trend may be produced in order to assess research problem of statement. It is a process of asking many people the same questions and examining their answers.

3.6 Validity and Reliability

According to Bryman and Bell (2007), reliability analysis is concerned with the internal consistency of the research instrument. Malhotra (2010) mentioned about three types of validity in his study: content validity, predictive validity, and construct validity. This study werediscoursed content validity through the review of literature and adapting instruments which was used from previous research.

As multiple items in all constructs were used, the internal consistency/reliabilities conduct with Cornbrash's reliability analyses were expect to conduct each variable of the instrument. The reliability of the measures has been examined through the calculation of Cronbach's alpha coefficients. For scale acceptability, Hair et al. (1998) suggested that Cronbach's alpha coefficient of construct is 0.6. If each domain obtains the value 0.6, it means that, the items in each domain are understood by most of the respondents. On the other hand, if the findings are far from the expected value of 0.6, this might be caused by respondents' different perception toward each item of the domain.

3.7. Analysis and treatment of data

Both qualitative and quantitative data collected has be organized, classified, analyzed and interpreted in the chapter four of this paper to arrive at conclusions. Each question in the questionnaires was categorized based on the study's research objectives and finally grouped on the basis of common characteristic. The data was analyzed in the descriptive frequency using Statistical Packages for Social Studies (SPSS v20.0).

Then data also has be organized and presented using different tools such as mean, standard deviations and cross tabulations figures in an easily understandable way. As result interpretation has been made using percentage of respondents' frequencies.

3.8. Ethical Consideration

Regarding the research ethics, the author has kept the research ethics. Data providers, organizations and institutions were properly acknowledged and the information collected from them is used for the purpose of the research objective and the researcher will respect issues related to confidentiality.

CHAPTER FOUR

Results, Discussions and Interpretation

4.1General Overview of the Data

The survey was undertaken to examine the assessing the practice of Multimodal transportation service in the case of Ethiopian Shipping and Logistics Services Enterprise. To find out the effectiveness of Multimodal transport Service,138 questionnaires was developed and distributed to the multimodal transport customers of Ethiopian Shipping and Logistics Service Enterprise. Furthermore the researcher also used secondary data to consolidate the findings.

4.2 Data Presentation

The main reason for focusing on the data preparation is that data preparation is a crucial consideration to avoid misleading analysis findings. This chapter has been presented in two parts the preliminarily finding of the questionnaire in a descriptive manner. The first part deals with the data preparation that includes the evaluation of the measurement validity and reliability of each variables and construct, and the equality variance assumptions by transforming the raw data into more interpretable information through SPSS 23.0. The second part this chapter addresses the company profile and percentages, frequencies of the respondents' profile.

4.3 Data Preparation

Screening and preparation of the data is considered as one of the most crucial steps before applying various techniques for the analysis. As the analytical process is time consuming and tedious, careful examination of data prior performing the analysis would help to derive clear and unambiguous findings. Thus, three specific data preparation issues, namely outliers, missing data and normality have been thoroughly done.

In the data collection due care has been taken to eradicate possible impacts of missing data, based on the returned survey,

4.4 Normality

Under the process of data preparation for analysis, the final assumption lies in the assessment of normality of distribution. In this analysis, the distribution of the data has been viewed as the most fundamental assumption in multivariate analysis and thus data have required to be normally distributed. Furthermore, examination of each observed variable for skewness and kurtosis has also been done to test the normality of data. The generally accepted values of skewness and kurtosisin indicating the multivariate normality of the date are between +2.0 to -2.0 and +7. However, all items in the present dataset do not have extreme skewness of more than absolute value of 2.0 or kurtosis of more than absolute value of 2.0 or kurtosis of more than absolute value of 7.0 respectively. Therefore, the overall multivariate normality can be assumed and no further treatments of datasets areneeded.

4.5 Scale Reliability

In this section, the result of the reliability measurement has been reported through reliability statistics with Cronbach's alpha. The rule of thumb for Cronbach's alpha is that Cronbach's alpha value of .70 or higher. The higher alpha value indicates more reliability and higher consistency of the measurable items under the same latent construct. Result of the Cronbache's alpha reveals that the constructs MMTS, show alpha values of 0.941 and the overall Cronbach's alpha value of 0.731 which is well above .70 (see table 4.1). Thus, the observed variable truly reflects the latent construct and amendments are not necessary(see more details in annex-1).

Table-4.1: Over all Reliability Statistics

Cronbach's Alpha	**Cronbach's Alpha Based on Standardized Items**	**No, of Items**
0.731	0.942	138

4.6 Survey Response Rate and non- response Bias

In the current study, a total of 159 questionnaires have been dispatched including 10% contingency for non-response. The data collection process has been conducted since the past six weeks from the first week of April 1, 2020 until the second week of May 2020. A total of 148 questionnaires have been received from participant importers (Multimodal transport service users), giving a response rate of 93percent of the total distributed samples. However, 10 questionnaires have been discarded leaving 138questionnaires for analysis (see annex-1). Hence, non-response bias is not a major concern in this study.

4.7 Characteristics of Quantitative Respondents

4.7.1 Respondent by Business Type

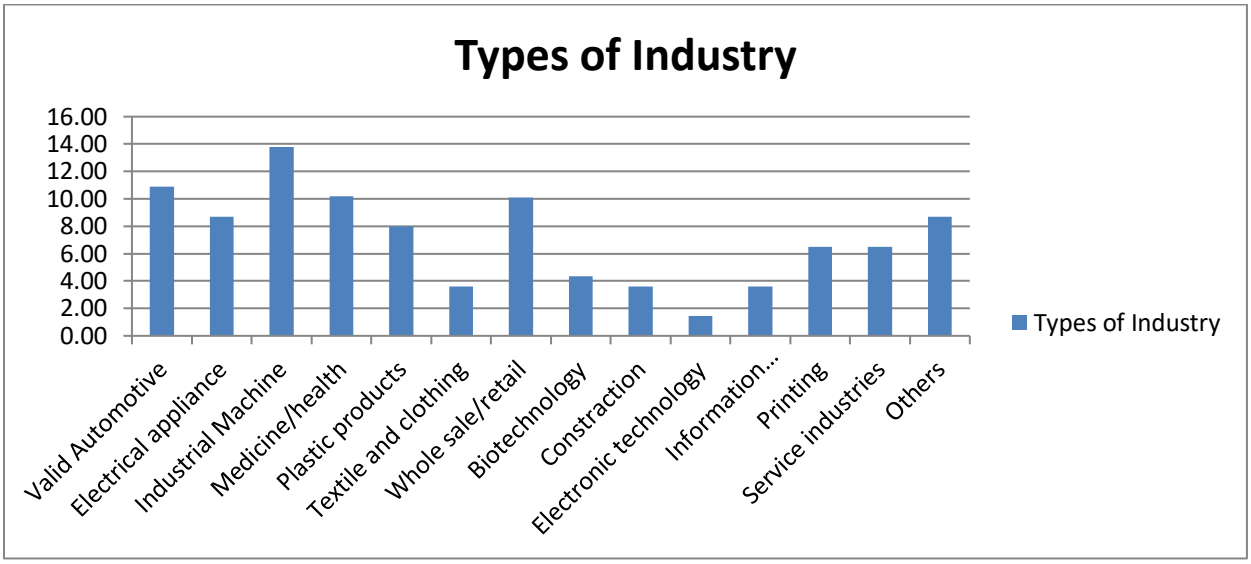
In terms of respondent business type, the largest response has been from Industrial machineries(13.8%),followed by Automotive, parts and components (10.9%), Medicine/health sector (10.2%), Whole sale/retailer (10.1%), Electrical appliance(8.7%) others (8.7%) Plastic products (8.0%), Service Industries (6.5%), Construction (3.6%)Information Technology (3.6%), and of the sample size for its dedicated sector, As shown in table -4 below, a total of 14 sectors have responded to the questionnaire.

Table 4.2: types of respondent business by industry

	Types of Industry	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Automotive	15	10.87	10.90	10.90
	Electrical appliance	12	8.70	8.70	19.60
	Industrial Machine	19	13.77	13.80	33.40
	Medicine/health	14	10.14	10.20	43.60
	Plastic products	11	7.97	8.00	51.60
	Textile and clothing	5	3.62	3.60	55.20
	Whole sale/retail	14	10.14	10.10	65.30
	Biotechnology	6	4.35	4.35	69.65
	Construction	5	3.62	3.60	73.25
	Electronic technology	2	1.45	1.45	74.70
	Information technology Printing	5	3.62	3.60	78.30
	Printing	9	6.52	6.50	84.80
	Service industries	9	6.52	6.50	91.30
	Others	12	8.70	8.70	100.00
	Total	138	100	100	

Source: Field Survey (2020)

Figure 4:1 Types of respondent business by industry



Source: Field Survey (2020)

4.7.2 Respondent in terms of Position in the company

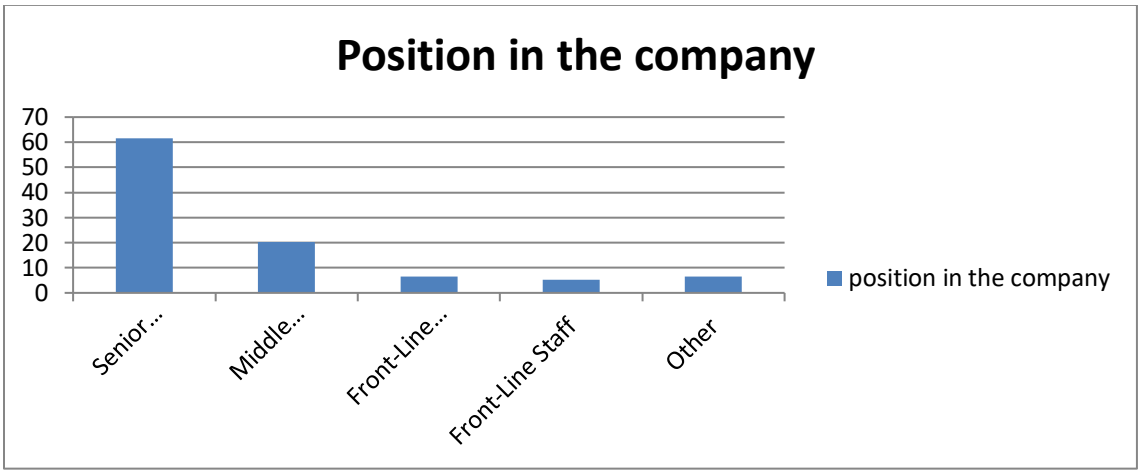
The profile of respondents' firms and their characteristics are displayed in table-4.3. A total of 138 respondents had responded to the question regarding his or her position in the company. According to the questionnaire survey, 61.6 percent of the respondents were senior managers or above, 20.3 percent were middle managers, 6.5 percent were front line managers, 5.1 percent were front line staffs, and 6.5 percent were others finance and logistics division representatives. More than 81.9 percent of the response comes from managers or above which indicates the reliability and the quality of the response.

Table 4.3: Types of respondent business by Position

	Frequency	Percent	Valid Percent	Cumulative Percent
Senior Management	85	61.6	61.6	61.6
Middle Management	28	20.3	20.3	81.9
Front-Line Manager	9	6.5	6.5	88.4
Front-Line Staff	7	5.1	5.1	93.5
Other	9	6.5	6.5	100
Total	138	100	100	

Source: Field Survey (2020)

Figure 4.2: Positions in the Company



Source: Field Survey (2020)

4.7.3 Respondent in terms of business experience

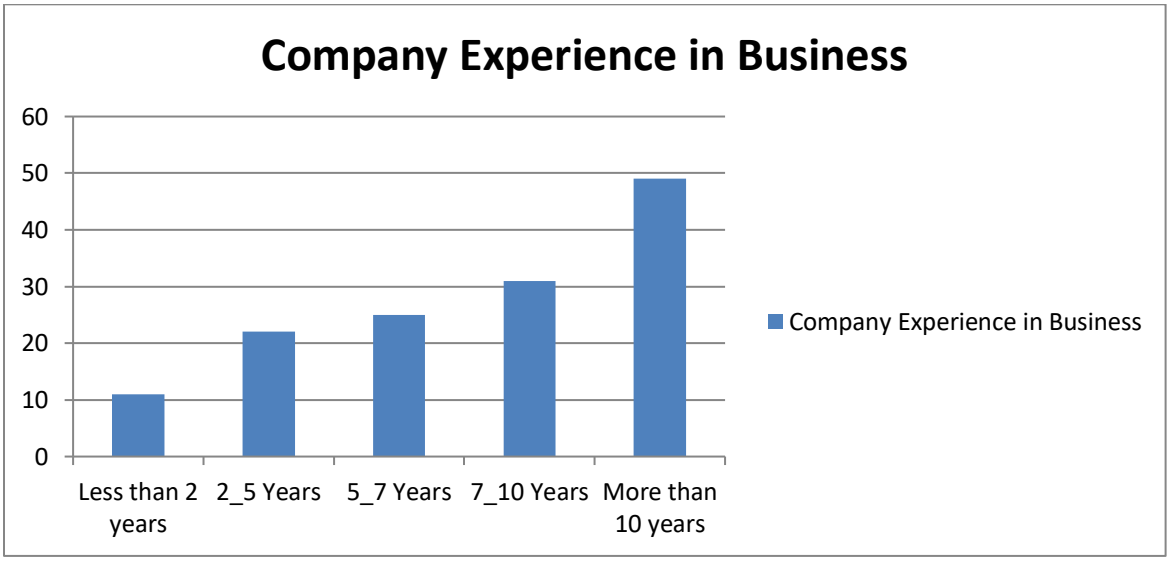
In, the majority of the respondents were from experienced firms 36% were experienced over 10 years,22% were experienced from 7-10 years, 18% were having experience of 5-7 years, 16% were having experience of 2-5 years and 8% were experienced below 2 years. In general 76% of the respondent firms were experienced more than 5 years. This shows the level of experience and reputation that the firm has in the market place, as well as quality of the responses. Table-4.4 shows the respondents statistical profile in terms of business experience.

Table 4.4: Respondents business experience

		Frequency	Percent	Valid Percent	Cumulative percent
Valid	Less than 2 years	11	8	8	8
	2_5 Years	22	16	16	24
	5_7 Years	25	18	18	42
	7_10 Years	31	22	22	64
	More than 10 years	49	36	36	100
	Total	138	100		

Source: Field Survey (2020)

Figure 4.3: Respondents profile in terms of business experience



Source: Field Survey (2020)

4.7.4 Descriptive Analysis of Multimodal Transport Service(MMTS)

The measurement of multimodal transport service (MMTS) comprises 20 items. The findings are presented in under table 4.5 and annex -2. The respondents have been asked to indicate the level of their satisfaction of services (1 = Strongly Disagree to 6 = Strongly Agree) provided by their current MTO. The results show. Table-4.5 shows the respondents MMTS.

Table 4.5: Respondents of Customers 0n Multimodal Transport Service (MMTS)

S.No			Valid Strongly dis agree	disagree	moderately disagree	moderately agree	Agree	Strongly agree	Total	Means
Transportation(MMTS)										
1	Does ESLSE MMTS has accurate documentation?	Count	2	2	8	62	46	18	138	4.42
		Percent	1%	2%	6%	45%	33%	13%	1	
2	Does ESLSE MMTS has efficient transit time?	Count	2	5	39	44	41	7	138	4.00
		Percent	1%	4%	28%	32%	30%	5%	1	
3	Does ESLSE MMTS has reliable schedule?	Count	2	9	44	44	2	37	138	4.06
		Percent	1%	7%	32%	32%	1%	27%	1	
4	Does ESLSE MMTS has special cargo handling equipment?	Count	2	9	58	32	30	7	138	3.72
		Percent	1%	7%	42%	23%	22%	5%	1	
5	Does ESLSE MMTS Regular availability of booking space?	Count	7	7	71	37	14	2	138	3.36
		Percent	5%	5%	51%	27%	10%	2%	1	
6	Does ESLSE MMTS Has frequent schedule?	Count	2	14	66	28	21	7	138	3.53
		Percent	2%	10%	48%	20%	15%	5%	1	
7	Does ESLSE MMTS Understanding customers need(door to door service facility?	Count	21	32	41	25	14	5	138	2.96
		Percent	15%	23%	30%	18%	10%	4%	1	
Facilities (MMTS)										
8	Does ESLSE MMTS Provision of inland transport arrangement?	Count	2	7	28	32	62	7	138	4.20
		Percent	2%	5%	20%	23%	45%	5%	1	
9	Does ESLSE MMTS Provision of warehousing service?	Count	7	14	23	18	58	18	138	4.16
		Percent	5%	10%	17%	13%	42%	13%	1	
10	Does ESLSE MMTS Provision of dependable customs clearance?	Count	2	16	46	30	37	7	138	3.76
		Percent	1%	12%	33%	22%	27%	5%	1	
11	Does ESLSE MMTS Has effective service coverage?	Count	2	7	64	37	23	5	138	3.63
		Percent	1%	5%	46%	27%	17%	4%	1	
12	Does ESLSE MMTS Have flexible tariff?	Count	14	51	32	11	30		138	2.94
		Percent	10%	40%	23%	7%	21%		1.01	
13	Does ESLSE MMTS Has flexible Payment mode?	Count	16	48	35	12	25	2	138	2.91

		Percent	12%	35%	25%	8%	18%	2%	1	
14	Does ESLSE MMTS Has cargo safety?	Count		2	46	21	62	7	138	4.19
		Percent		2%	33%	15%	45%	5%	1	
15	Does ESLSE MMTS Notifying delays in advance?	Count	12	25	41	32	21	7	138	3.33
		Percent	9%	18%	30%	23%	15%	5%	1	
16	Does ESLSE MMTS Has quality information system?	Count	5	30	50	21	21	11	138	3.41
		Percent	4%	22%	36%	15%	15%	8%	1	
17	Does ESLSE MMTS Has efficient and reliable cargo tracking system?	Count	7	21	55	28	18	9	138	3.41
		Percent	5%	15%	40%	20%	13%	7%	1	
Communication and Information(MMTS)										
18	Does ESLSE MMTS Provision of timely response to customer complaint?	Count	11	25	51	35	14	2	138	3.16
		Percent	8%	18%	37%	25%	10%	2%	1	
19	Does ESLSE MMTS Provision of timely response to cargo claims?	Count	11	16	67	30	12	2	138	3.16
		Percent	8%	11%	49%	22%	9%	1%	1	
20	Does ESLSE MMTS Has cargo loss or damage records?	Count	7	16	80	18	15	2	138	3.17
		Percent	5%	12%	58%	13%	11%	1%	1	

Source: Field Survey (2020)

That 91% of the respondents have believed that their current MTO provides accurate documentation with a standard deviation SD= 1.166.66.7% of the respondents have been satisfied with the transit time provided by their current MTO with Standard deviation of SD = 1.457,60.1% of the respondents believe that their current MTO offers reliable schedules with standard deviation of 1.46, 50% of the respondents have been satisfied with their current MTO's special cargo handling capability with standard deviation of SD = 1.54,60% of the respondents have been dissatisfied with the availability of booking space capability.

Of their current MTO with standard deviation of SD = 1.398,60% of the respondents have been dissatisfied with the frequency of schedule offered by their current MTO with a standard deviation of SD =1.522. While 73% of the respondents are satisfied with the arrangement of inland transport service offered by their current MTO with Standard deviation of = 1.483,68.3%

of the respondents believe that their current MTO offers satisfactory warehousing services with standard deviation of SD 1.830,53.4% of the respondents have been satisfied with their current MTO's customs clearance capability with standard deviation of SD = 1.441,53.3% of the respondents have been dissatisfied with the current MTO service coverage for their logistics and transport needs with standard deviation of SD = 1.743, 70% of the respondents are dissatisfied with their current MTO's level of tariff flexibility with standard deviation of SD = 1.754,71.7% of the respondents have been dissatisfied with their current MTO's flexibility of payment capability with standard deviation of SD = 1.463.

With respect to facilities 65% of the respondents have been satisfied with their current MTO' safe handling of their cargoes with standard deviation of SD = 1.750,56.6% of the respondents have been dissatisfied with the advance notice of delay service capability of their current MTO with standard deviation of SD = 1.745,61.7% of the respondents have been dissatisfied with their current MTO's quality of data transmission with standard deviation of SD = 1.672,60% of the respondents are dissatisfied with their Current MTO's cargo tracking capability with standard deviation of SD = 1.568,63.3% of the respondents feel dissatisfied with their MTO's response to customer compliant with standard deviation of SD = 1.467,68.3% of the respondents have felt dissatisfied with their current MTO's response to cargo claims with standard deviation of SD = 1.369,68.3% of the respondent are dissatisfied with their current MTO' capacity in understanding customers need with standard deviation of SD = 1.513.

Over all out of the 20 the multimodal transport services the importers respond on 12 items that they are dissatisfied on the level of their current MTO's service. While they remain neutral on 1 item and they are satisfied on the remaining 7 measurement items. However, the standard deviation of (SD) of their satisfaction with the service is reasonably high, indicating varying levels of satisfaction from person-to-person.

4.8 Qualitative Respondents for Interviews & Open end Questions

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

Table 4.6: Responses of Qualitative Questions

Strength	Weaknesses
Modjo	
• As it is a new port, it renders a good service. • It has good machinery, warehouse, checking place and suitable working area. • In Modjo terminal, container clearing is quick. • The ports give online service and work up to 10pm. • The port has good security and follow-up for goods. • The pot has strong interest for improving the working conditions into modernized way. • It has cooperative and responsible management and employment handling is also good. • It saves foreign currency that could have been charged at Djibouti port. • The port quickly prepares containers for checking. • Increase truck supply and implement the rail transport operation. • Connecting the main rail line to dry ports and start operation.	• Lack of skilled manpower and machinery like fork lift, crane and generators, gate door, containers and offices. • Don't provide on time information. As a result customer pay more storage cost. • Lack of coordination between the dry port and customs. • Lack of clearances of warehouse tariff (gimit) and network problem. • Poor networking system. • They have long and boring working process. • Lack of employees interest and fairness to serve the customers quickly since they are corrupted and unethical • The employee of the port doesn't respect the working time. • Containers are not quickly ready the for the next shipment. • Lack of quick response for customer compliant. • Waiting long time to pay taxes and related costs. • No enough space for parking for customers vehicle. • The problem of time

	management. • The employees are not willing to take responsibility and give decision. • Delay of goods transfer from Djibouti to Mojo port due to lack of freight transportation of the port. • The absence of one windows service. • Lack of enough reception space for customers service and suitable toilet. • Lack of Banking service in the port. . .
kaliti	

• The location of the port is one of the good parts. • The containers are timely prepared for checking • Good time management • It prepares container timely • The straggle of the organization is good for giving quality service and fulfilling machineries. • Save the foreign currency that pay for storage at Djibouti ports.	• There is problem in loading and unloading process in this port. • Shortage of container putting place, warehouse and machineries like fork lift, crane and generators. • There is no one window service. • Warehouse is not suitable for checking because the place is unclean. • When the machine is unworked the organization is not respond quickly. • There is not suitable office for work because the checking place and the office are so far. • The organization not gives full and timely information when the goods are arrived at the port. • The containers are not timely ready for the next shipment.

Source: Field Survey (2020)

The result founded regarding 'Service provided' indicated above that the dry port operational performance and created user's dissatisfaction, which is strictly need improvement.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATION

Introduction

The final chapter of the thesis mainly contains conclusion and recommendation. The conclusion part generalize the entire thesis while the recommendation part suggest some ideas on the practical performance and challenges that faced on multimodal transport operation service in Ethiopian Shipping and Logistics Service Enterprise.

Thus, the chapter is organized in to two sections as section 5.1 conclusions and section 5.2 recommendations.

5.1Conclusion

The effect of multimodal Transport service (MMTS) in terms of contributing and improving business performance have been found to be ineffective and inefficient from the Ethiopian importers perspective, which contradicts the theories in the literature review.

Furthermore, as the dry port is a key logistics channel to the country it contributes to overall poor logistics performance of the country due to delays. The poor infrastructural facility of the dry port has not helped the enterprise to succeed what it has planned to achieve. The poor information communication technology system, unavailability of internal and external software based integrated and networked system were the major reasons explained by the managements of the problem prevailing. Moreover, attention should be given to improve the level of service providing and procedures at customs authority and service should be simplified and computerized for the benefit of the country. As per the findings of the research it is possible to conclude that the excessive procedures and too many clearing documents requirement and the manual system by customs offices generally has worsen the role of customs office to the success of dry port operation management practice so far.

In general, multimodal transport service provided, infrastructure and equipment are significant key derivers of overall performance in Ethiopian Shipping and Logistics service Enterprise.

5.2 Recommendations

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

- Efficient operational management is critical for eliminating avoidable delays and enhancing predictability in custom clearance. Coordination among government control agencies will remain essential in trade facilitation efforts.
- The port operation is dependable on the effort of human power beside machinery should employ adequate staffs in all sections. Furthermore, it is important for the port to provide training to the pot staffs so as to improve their skill and to update them with recent Knowledge and technology in the port sector including the management Knowledge.

  In general, multimodal transport operation service strongly associated with the reliability of supply chains and the predictability of service delivery for importers and exporters.To this end, the role of every stakeholder in the sector has to be further investigated and detail and planned work in required in terms of alleviating problems identified in this study and also the role of research studies to identify knowledge gap and solution to the problems are critical and timely issues.

  Since the present study is at micro level, it can be suggested that further study has to be carried out at macro /national level to comprehend the effect of multimodal transport service on customers satisfaction in Ethiopia to come up with a consolidated and representative policy measures that can comprehensively improve the effect positively.

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Appendix 1

Questionnaire

Dear Sir/Madam,

I am a graduate student of School of Commerce, Logistics and Supply Chain Management. I am conducting a research about **"Assessing the Practice of Multimodal Transportation Operation Service in ESLSE"**, which I had chosen as a topic to conduct research on it for my master's project.

Hence, I request you kindly to fill up this questionnaire which will be of immense help in my study. Please take a look at the required information and try to answer correctly and accurately.

I thank you for your valuable time and efforts and I want you to know that the information you provide will only be used for academic purpose.

Yours Sincerely,

Abebe Debolaw

Part I: Respondent's profile

1. What type of Industry do you belong to?

1. Automotive

2.Chemical	11.Construction
3.Electrical appliance	12.Electronic technology
	13.Information technology
4.Industrial Machine	14.Opitcal products
	15.Printing
5.Medicine/health	16.Toys

17.Service industries

6.Plastic products
18.If Others

7.Textile and clothing

8.Watches Clocks
Others

9.Whole sale/retail

10.Biotechnology

2. What type of Company do you belong to?

1. Limited Company

2. Share Company

3. Partnership

4. Joint Venture

5. Sole proprietorship

6. If Other, please specify:_____

3. What is your company's total number of employees (including full-time & part-time employees)?

1.Less than 50
2. 51-99
3.100-199
4.200-499
5.500 -999
6.1000 more

4. For how long has your company been operating in the business?

1).Less than 2 Years
2).2-5 Years
3).5-7 Years
4).7-10 Years
5).Over 10 Years

5. What is the value of your company's material assets (in million Birr)?

1).Less than 5
2).05-9
3).10-19
4).20-49
5).50-99
6).Over 100

6. What was your company's annual total import value in 2019(in million Birr)?

1.Less than 5
2.6-9
3.10-19
4.20-49
5.50-99
6.Over 100

7. What is your position in company?

1.Senior Management
2.Middle Management
3.Front-Line Manager
4.Front-Line Staff
5.Other

Part II: **Survey on Multimodal Transport Service Items**

DIRECTION: This part of the questionnaire intends to find your Expectation/Opinion towards the Multimodal Transport Service of ESLSE. Please show the extent to which you think ESLSE 'should' possess the following features. In this paper the five dimensions and their respective attributes of the model are expressed using a Six-point Likert scale in the following manner:

1= Strongly disagree 2= disagree 3=Moderate Disagreed 4 = Moderate agreed 5= agree and 6= strongly agree

		1	2	3	4	5	6
	Multimodal Transport Service						
1	has accurate documentation						
2	has efficient transit time						
3	has reliable schedule						
4	has special cargo handling equipment						
5	regular availability of booking space						
6	Has frequent schedule						
7	Provision of inland transport arrangement						
8	Provision of warehousing service						
9	Provision of dependable customs clearance						
10	Has effective service coverage						
11	Has flexible tariff						
12	Has flexible Payment mode						
13	Has cargo safety						
14	Notifying delays in advance						
15	Has quality information system						
16	Has efficient and reliable cargo tracking system						
17	Provision of timely response to customer complaint						
18	Provision of timely response to cargo claims						
19	Has cargo loss or damage records						
20	Understanding customers need						

Part III LEVEL OF CUSTOMER SATISFACTION ON Multimodal Transport Service of ESLSE.

OPEN ENDED QUESTIIONS

What should be done to improve customer satisfaction at ESLSE? Write briefly

_____

_____

_____

If you have any additional comments with regards to ESLSE's service quality please feel free to qualify them in the space below

_____

_____

_____

Thank you for your kind cooperation and taking your time to fill this questionnaire!!!

Please fill free to contact me for further information at any time through;

Thank you, in advance for your cooperation and timely response. Sincerely yours!!!!!!

Addis Ababa University School of Commerce

Logistics and Supply Chain Management

Part IV Interview Questionnaires

To Mr, /Mrs,/Ms.,_____

First of all I would like to express my deepest gratitude to you for your voluntaries to spend your precious time with me. The main purpose of these interview questionnaires is to collect primary information to conduct a research on the "Assessing the Practice of Multimodal Transportation Operation Service in ESLSE", which is only for academic purpose. Therefore, I request you to answer all the questions to the best of your information.

Thank you, in advance for your cooperation and timely response.

Part I Background information.

1- Name_____
2- Sex_____
3- Name of Organization_____
4- Work Position _____
5- Work Experience _____

Part II-Main Questions:

1-What problem did you face while running a business with ESLSE Multimodal transport service in relation to?

a) Economic factors
b) Social factors
c) Legal and administrative factors

2. What major opportunities and challenges that service provided by ESLSE dry ports at Modjo and Kaliti?

3. How to solve the above problems?

4. What measure did you take to solve the problem?

5. Do you think that there is reasonable cargo handling charge and arrange enough storage days free of payment?

6. How do the physical infrastructure and equipment are helping the efficient cargo handling process?

-ICT infrastructure and use.

-Warehouse availability storage capacity.

-Safety and Security of cargo handling process.

Thank you again.

Annex-1 Respondents profile descriptive Statistics Analysis

	Types of industry	Types of Company	Company experience in the business	Value of Company Assets
Valid	138	138	138	138
Missing	0	0	0	0

	Statistics	
	Value of Company annual total import (in Million birr)	Position in the Company
Valid	138	138
Missing	0	0

Frequency Table

Types of Industry

	Types of Industry	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Automotive parts and Components	15	10.87	10.90	10.90
	Electrical appliance	12	8.70	8.70	19.60
	Industrial Machine	19	13.77	13.80	33.40
	Medicine/health	14	10.14	10.20	43.60
	Plastic products	11	7.97	8.00	51.60
	Textile and clothing	5	3.62	3.60	55.20
	Whole sale/retail	14	10.14	10.10	65.30
	Biotechnology	6	4.35	4.35	69.65
	Construction	5	3.62	3.60	73.25
	Electronic technology	2	1.45	1.45	74.70
	Information technology Printing	5	3.62	3.60	78.30
	Printing	9	6.52	6.50	84.80
	Service industries	9	6.52	6.50	91.30
	Others	12	8.70	8.70	100.00
	Total	138	100	100	

Types of Company

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Limited Company	64	46.4	46.40	46.40
	Share Company	30	21.7	21.70	68.10
	Partnership	5	3.6	3.60	71.70
	Joint Venture	7	5.1	5.10	76.80
	Sole proprietorship	29	21.0	21.00	97.80
	Others	3	2.2	2.20	100.00
	Total	138	100.00	100.00	

Total Company employees (par-time full-time)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 50	71	51	52	52
	50-99	9	7	7	59
	100-199	9	7	7	66
	200-499	15	11	11	77
	1000 or more	32	23	23	100
	Total	138	99	100	

Company experience in the business

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 2 Years	11	8	8	8
	2-5 Years	22	16	16	24
	5-7 Years	25	18	18	42
	7-10 Years	31	22	22	64
	Over 10 Years	49	36	36	100
	Total	138	100	100	

Value of company assets (in million birr)

		Frequency	Percent	Valid Percent	Cumulative Percent
valid	Less than 15	44	31.9	32	32
	15-29	30	21.7	22	54
	30-49	7	5.1	5	59
	50-99	9	6.5	6	65
	100 or above	48	34.8	35	100
	Total	138	100	100	

Value of Company annual total import (in Million birr)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 5	25	18.1	18	18
	05--9	18	13.0	13	31
	10--19	21	15.2	15	46
	20-49	25	18.1	18	64
	50-99	19	13.8	14	78
	Over 100	30	22	22	100
	Total	138	100.0	100	

Position in the company

Table 9: Types of respondent business by industry

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Senior Management	85	61.6	61.6	61.6
	Middle Management	28	20.3	20.3	81.9
	Front-Line Manager	9	6.5	6.5	88.4
	Front-Line Staff	7	5.1	5.1	93.5
	Other	9	6.5	6.5	100
	Total	138	100	100	

Annex-2 descriptive Statistics analysis of MMTS

Frequencies
Variables=MMTS1,MMTS2,MMTS3,MMTS4,MMTS5,MMTS6,MMTS7,MMTS8,MMTS9,
MMTS10,MMTS11,
MMTS12,MMTS13,MMTS14,MMTS15,MMTS16,MMTS17,MMTS18,MMTS19
,MMTS20,

	Has accurate documentation	Has efficient transit time	Has reliable schedule	Has special cargo handling equipment	Regular availability of booking space
N Valid	138	138	138	138	138
Missing	0	0	0	0	0

	Has frequent schedule	Provision of inland transport arrangement	Provision of warehousing service	Provision of dependable customs Clearance	Has effective service coverage
N Valid	138	138	138	138	138
Missing	0	0	0	0	0

	Has flexible tariff	Has flexible payment mode	Has Cargo safely	Notifying delays in advance	Has quality information system
N Valid	138	138	138	138	138
Missing	0	0	0	0	0

	Has efficient and reliable cargo tracking system	Provision of timely response to customer complaint	provision of timely response to cargo claims	Has cargo loss or damage records	Understanding Customers need
N Valid	138	138	138	138	138
Missing	0	0	0	0	0

Frequency Table

has accurate documentation

		Frequency	Percent	Valid Percent	Cumulative percent
Valid	Strongly disagree	2	1.449	1	1
	disagree	2	1.449	2	3
	moderately disagree	8	5.797	6	9
	moderately agree	62	44.928	45	54
	Agree	46	33.333	33	87
	Strongly agree	18	13.043	13	100
	Total	138	100	100	

has efficient transit time

		Frequency	Percent	Valid Percent	Cumulative percent
Valid	Strongly disagree	2	1.4	1	1
	disagree	5	3.6	4	5
	moderately disagree	39	28.3	28	33
	moderately agree	44	31.9	32	65
	Agree	41	29.7	30	95
	Strongly agree	7	5.1	5	100
	Total	138	100	100	

has reliable schedule

		Frequency	Percent	Valid Percent	Cumulative percent
Valid	Strongly disagree	2	1.4	1	1
	disagree	9	6.5	7	8
	moderately disagree	44	31.9	32	40
	moderately agree	44	31.9	32	72
	Agree	2	1.4	1	73
	Strongly agree	37	26.8	27	100
	Total	138	100	100	

has special cargo handling equipment

		Frequency	Percent	Valid Percent	Cumulative percent
Valid	Strongly disagree	2	1.4	1	1
	disagree	9	6.5	7	8
	moderately disagree	58	42.0	42	50
	moderately agree	32	23.2	23	73
	Agree	30	21.7	22	95
	Strongly agree	7	5.1	5	100
	Total	138	100	100	

regular availability of booking space

		Frequency	Percent	Valid Percent	Cumulative percent
Valid	Strongly disagree	7	5.1	5	5
	disagree	7	5.1	5	10
	moderately disagree	71	51.4	51	61
	moderately agree	37	26.8	27	88
	Agree	14	10.1	10	98
	Strongly agree	2	1.4	2	100
	Total	138	100	100	

Has frequent schedule

		Frequency	Percent	Valid Percent	Cumulative percent
Valid	Strongly disagree	2	1.4	2	2
	disagree	14	10.1	10	12
	moderately disagree	66	47.8	48	60
	moderately agree	28	20.3	20	80
	Agree	21	15.2	15	95
	Strongly agree	7	5.1	5	100
	Total	138	100	100	

Provision of inland transport arrangement

		Frequency	Percent	Valid Percent	Cumulative percent
Valid	Strongly disagree	2	1.4	2	2
	disagree	7	5.1	5	7
	moderately disagree	28	20.3	20	27
	moderately agree	32	23.2	23	50
	Agree	62	44.9	45	95
	Strongly agree	7	5.1	5	100
	Total	138	100	100	

Provision of warehousing service

		Frequency	Percent	Valid Percent	Cumulative percent
Valid	Strongly disagree	7	5.1	5	5
	disagree	14	10.1	10	15
	moderately disagree	23	16.7	17	32
	moderately agree	18	13.0	13	45
	Agree	58	42.0	42	87
	Strongly agree	18	13.0	13	100
	Total	138	100	100	

Provision of dependable customs clearance

		Frequency	Percent	Valid Percent	Cumulative percent
Valid	Strongly disagree	2	1.4	1	1
	disagree	16	11.6	12	13
	moderately disagree	46	33.3	33	46
	moderately agree	30	21.7	22	68
	Agree	37	26.8	27	95
	Strongly agree	7	5.1	5	100
	Total	138	100.0	100	

Has effective service coverage

		Frequency	Percent	Valid Percent	Cumulative percent
Valid	Strongly disagree	2	1.4	1	1
	disagree	7	5.1	5	6
	moderately disagree	64	46.4	46	52
	moderately agree	37	26.8	27	79
	Agree	23	16.7	17	96
	Strongly agree	5	3.6	4	100
	Total	138	100	100	

Has flexible tariff

		Frequency	Percent	Valid Percent	Cumulative percent
Valid	Strongly disagree	14	10.1	10	10
	disagree	51	37.0	37	47
	moderately disagree	32	23.2	23	70
	moderately agree	11	8.0	8	78
	Agree	30	21.7	22	100
	Total	138	100	100	

Has flexible Payment mode

		Frequency	Percent	Valid Percent	Cumulative percent
Valid	Strongly disagree	16	11.6	12	12
	disagree	48	34.8	35	47
	moderately disagree	35	25.4	25	72
	moderately agree	12	8.7	8	80
	Agree	25	18.1	18	98
	Strongly agree	2	1.4	2	100
	Total	138	100	100	

Has cargo safety

		Frequency	Percent	Valid Percent	Cumulative percent
Valid	disagree	2	1.4	2	2
	moderately disagree	46	33.3	33	35
	moderately agree	21	15.2	15	50
	Agree	62	44.9	45	95
	Strongly agree	7	5.1	5	100
	Total	138	100.0	100	

Notifying delays in advance

		Frequency	Percent	Valid Percent	Cumulative percent
Valid	Strongly disagree	12	8.7	9	9
	disagree	25	18.1	18	27
	moderately disagree	41	29.7	30	57
	moderately agree	32	23.2	23	80
	Agree	21	15.2	15	95
	Strongly agree	7	5.1	5	100
	Total	138	100.0	100	

Has quality information system

		Frequency	Percent	Valid Percent	Cumulative percent
Valid	Strongly disagree	5	3.6	4	4
	disagree	30	21.7	22	26
	moderately disagree	50	36.2	36	62
	moderately agree	21	15.2	15	77
	Agree	21	15.2	15	92
	Strongly agree	11	8.0	8	100
	Total	138	100.0	100	

Has efficient and reliable cargo tracking system

		Frequency	Percent	Valid Percent	Cumulative percent
Valid	Strongly disagree	7	5.1	5	5
	disagree	21	15.2	15	20
	moderately disagree	55	39.9	40	60
	moderately agree	28	20.3	20	80
	Agree	18	13.0	13	93
	Strongly agree	9	6.5	7	100
	Total	138	100.0	100	

Provision of timely response to customer complaint

		Frequency	Percent	Valid Percent	Cumulative percent
Valid	Strongly disagree	11	8.0	8	8
	disagree	25	18.1	18	26
	moderately disagree	51	37.0	37	63
	moderately agree	35	25.4	25	88
	Agree	14	10.1	10	98
	Strongly agree	2	1.4	2	100
	Total	138	100.0	100	

Provision of timely response to cargo claims

		Frequency	Percent	Valid Percent	Cumulative percent
Valid	Strongly disagree	11	8.0	8	8
	disagree	16	11.6	11	19
	moderately disagree	67	48.6	49	68
	moderately agree	30	21.7	22	90
	Agree	12	8.7	9	99
	Strongly agree	2	1.4	1	100
	Total	138	100.0	100	

Has cargo loss or damage records

		Frequency	Percent	Valid Percent	Cumulative percent
Valid	Strongly disagree	7	5.1	5	5
	disagree	16	11.6	12	17
	moderately disagree	80	58.0	58	75
	moderately agree	18	13.0	13	88
	Agree	15	10.9	11	99
	Strongly agree	2	1.4	1	100
	Total	138	100.00	100	

Understanding customers need

		Frequency	Percent	Valid Percent	Cumulative percent
Valid	Strongly disagree	21	15.2	15	15
	disagree	32	23.2	23	38
	moderately disagree	41	29.7	30	68
	moderately agree	25	18.1	18	86
	Agree	14	10.1	10	96
	Strongly agree	5	3.6	4	100
	Total	138	100.0	100	

Source: Field Survey (2020)