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Assessment on the Contribution of Inland Port and Terminal Development for Ethiopian Logistics sector: The Case of Ethiopian Shipping and Logistics Service Enterprise (A research report submitted for partial fulfillment of MA in Logistics and supply chain Management.)

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This is to certify that the thesis entitled as “Assessment of Inland port and Terminal Development Contribution for Ethiopian Logistics Sector: The case of Modjo Inland Port and Terminal of Ethiopian Shipping and Logistics Service Enterprise” prepared by Mr. Abebe Haile for submission to Addis Ababa University school of commerce (AAU SC), department of logistics and supply chain management in partial fulfillment of the requirements for the Degree of Master of Arts in Logistics and Supply chain Management, conforms with the regulation of the university and meets the accepted standards with respect to originality and quality.

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Declaration

I hereby declare that the thesis entitled as “Assessment of Inland port and Terminal Development Contribution for Ethiopian Logistics Sector: The case of Modjo Inland Port and Terminal of Ethiopian Shipping and Logistics Service Enterprise” is my own original work of research study, and has not been presented for a degree of any other university and that all sources of material used for the thesis have been appropriately acknowledged.

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This is to confirm that the above declaration made by the candidate is accurate and truthful to the best of my knowledge.

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List of Acronyms and Abbreviation

COVID-19	Corona Viruses Infectious Diseases-19
DEA	Data Envelopment Analysis
ESLSE	Ethiopian Shipping and Logistics Services Enterprises
FDRE	Federal Democratic Republic of Ethiopia
LLDCs	Landlocked Developing Countries LPI Logistics Performance
LLCs	Landlocked Countries
MAA	Maritime Affairs Authority
NLS	National Logistics Strategy
SPSS	Statistical Package for Social Sciences
TEU	Twenty foot Equivalent Unit
UNCTAD	United Nations Conference on Trade and Development
UN DESA	United Nation Department of Economic and Social Affairs
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UN-OHRLLS	United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States
WB	World Bank

ANNEX

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Abstract

The main intention of this research study is to assess the Inland Port and Terminal Development Contribution for the Logistics Industry of the Country (Ethiopia). The Case of Ethiopian Shipping and Logistics Service Enterprise Modjo port and terminal. The Inland Port and Terminal (Dry Port) defined as a place where located in heartland serves as seaport that customer services, custom clearances, consolidation, warehousing, container stuffing/unstuffing, storage, inventory control, freight forwarding & repair facilities provided.

The research study utilized cross-sectional research design (mixed research approach) that both qualitative and quantitative data used for analysis. As a target population of the research study 225 permanent employees of the Modjo Dry Port and Terminal of the Enterprise nominated from which 144 sample sizes determined through stratified and purposive sampling methods based on the research objectives, with 95% confidence interval.

The researcher used both primary and secondary data for the research study. The data collection have been made for the primary data through questioner & structured interview with the port and terminal employees' and the secondary data derived from articles reports journal data sources. The quantitative collected data analyzed by using SPSS (20 version) statistical tools.

The research study revealed that the inland port and terminal development contribution found substantial for Ethiopian logistics industry enhancement and serve as simplification gears for major import/export goods flows of the country. The research study findings identified that in Modjo dry port and terminal it has been witnessed the unavailability of sufficient working materials (such as port equipment, trucks, etc.), lack of skilled manpower and low level to computerized system that have lagging effects on daily port operations of the inland port and terminal. Based on the research finding, recommendation suggested for alleviation of the problems.

KEYWORDS: Landlocked countries, Trade facilitation, Logistics Supply chain,
Unimodal & Multimodal Transportation,

CHAPTER ONE

INTRODUCTION

1.1. BACK GROUND OF THE STUDY

As originally conceived, the term 'dry port' was defined as an inland terminal to and from which shipping lines could issue their bills of lading, with the concept being initially envisaged as applicable to all types of cargoes (UNCTAD, 1982). In both theory and practice, however, the concept has evolved not only to be closely associated with the rapid expansion of containerization and related changes in cargo handling (UNCTAD, 1991), but also to be applied in a variety of different contexts having the common characteristic of relating simply to 'a place inland that fulfills original port functions' (Cullinane and Wilmsmeier, 2011).

Dry ports could be inland terminals within a country that has a gateway port or they could be located in adjacent land-locked countries in the hinterland of one or more sea ports. The concept came into wide spread use in conjunction with containerization and this is the context in which the term is used here. Dry Port or Inland Clearance Depot (ICD) also defined as: "A common user facility with public authority status, equipped with fixed installations and offering services for handling and temporary storage of any kind of goods (including containers) carried under customs transit by any applicable mode of transport, placed under customs control and with customs and other agencies competent to clear goods for home use, warehousing, temporary admissions, re-export, temporary storage for onward transit and outright export." (UNCTAD, 2002; quoted by Abdurezak Mussema, 2016)

It has been learned that dry port concept were established in relation to the development of maritime trade quantity, cargo types and the escalation of loading capacity of vessels that bring about congestion at seaports that stemmed from incompetency to handle import and export cargoes in regular manner. In addition, the congestion of seaports creates a long dwelling time of cargos, extended waiting time of vessels & trucks. The periodical growth of bulk cargos & containerized cargo flows that caused congestion & prolonged dwell time for containers at the main sea ports initiates the dry port concepts to alleviate seaport congestion related problem & take advantage of dry ports at hinterland adjacent to seaports; the trans-ocean vessels started to call at single hub port while feeder vessels, haulages, trucks and trains connected to many smaller inland or dry ports (Monios, 2011).

The development theory of dry port or inland terminal stated as resulted from the continues growth of containerization and intermodal transport that faced challenges of overcrowding at seaports theoretically, known as Outside-In development (sea-driven e.g. port authorities,

terminal operators), contrasting with Inside-Out development (land-driven e.g. rail operators or public bodies). As some of arguments said that it is through over time the inland terminal development begins as a market-driven process from the outside in, but once regional authorities realize the potential benefits for their regions of such developments, they begin to pursue development from the inside out, seeking actively to capture maritime flows (Monios, 2011).

The implementation of a dry port in the seaport's hinterland can enable the seaport to increase its terminal capacity and therefore manage the problem of lack of space. With the development of global multimodal supply chains, dry ports have been assumed increasing importance to suit the need for market development, seamless integration and closer collaboration between the different participants of the supply chain and transport network (Lee and Kim, 2003, quoted by Abdurezak Mussema , 2016).

However, many land locked developing countries continuously face the challenge of physical isolation, supply chain related barriers from then sea and the high costs of trading with the rest of the world (UNECFA, 2011). Landlockedness refers to the geographical situation of a country without direct access to the sea (Arvis, et al. 2014; quoted by Abdurezak Mussema , 2016). There are 44 landlocked countries in the world and of these, the United Nations lists 32 as landlocked developing countries (LLDCs) that are low and middle-income countries based on the World Bank country classification with a population of nearly 440 million (quoted by Abdurezak Mussema , 2016).

With current trends in reduction in maritime transport cost and more advanced logistics technology that compensates for the handicap of intercontinental distances, lack of direct sea-access presents growing challenges to the global integration and growth prospects of many landlocked developing countries. The problem mostly affects the poorest countries: 20 out of 54 low-income economies are landlocked, with a majority of them in Sub-Saharan Africa (Arvis et al, 2007), one of which is Ethiopia. As one of the landlocked country in East Africa, Ethiopia face the challenge of physical isolation, supply chain related barriers from the sea and the high costs of trading with the rest of the world (UNECFA, 2011).

As a landlocked country, Ethiopia is dependent on port of Djibouti & has established its trade route along the Ethio-Djibouti corridor as main outlet to the sea port for its export and import trade. Due to the existing circumstances the country is depending mainly on port Djibouti where monopolistic port charges Practiced and it became unbearably high for Ethiopian import and export goods. In order to counter these challenges associated with land

locked-ness, and monopolistic port charges of Djibouti port is the major motivating factor for Ethiopia establishment of Inland port and terminal to take the advantage of dry ports of the country. The problems of freight transit coast, safety of freights and freight delays of import cargo at the port of Djibouti that consequently, being the reasons for confiscated of import cargo by the Djibouti government is the major driving force for the establishment of multi-modal transportation system. This research, therefore, made an effort to assess the contribution of inland port and terminal development for the logistics industry of the country based on the practices of Modjo Dry Port and Terminal of Ethiopian Shipping and Logistics Enterprise.

1.2. BACK GROUND OF THE ENTERPRISE

Ethiopian Shipping and Logistic Services Enterprise (ESLSE) is government owned development enterprise established under a Council of Ministers Regulation number 255/2012 dated November, 21, 2012 to provide effective efficient and economical multimodal door to door services which enhance sustainable economic growth and development of the country by merging four in dependently operating government owned or public enterprise previously known as The Ethiopian Shipping Lines(ESL),The Ethiopian Maritime and Transit Service(EMTS),The Dry Port Service Enterprise(DPSE),and Comet Transport Enterprise(CTE).

Based on above diversified and immense responsibility shouldered on the enterprise to facilitate world class effective and efficient import and export trade through provides:-

- An Ocean Transport through three routes far east, Indian and sub- continent, Black sea &Mediterranean services by its currently owned fleet of Nine Multi-Purpose Carrier (MPC) and two Oil chemical tanker (MT) vessels,
- Freight forwarding facilities with its own high and low bed heavy trucks from and to port of Djibouti,
- Port and terminal services along its eight Seven Inland Port and Terminal branch offices which are located in different geographical strategic places of the country.

Ethiopian shipping and logistics service enterprise is a government own Modjo Branch office of the Enterprise to some extent in its operation especially in sea transport is monopoly. Even though, the enterprise is monopoly in the local market it has many competitors in globally. The cope up with the global competition the enterprise gave due attention to customer focused marketing. Most of the importer and exporter of the country trade route is in Djibouti Port, through the Ports of: Gulf and Indian sub-Continent, China,

Korea, Japan, Singapore, South Africa, and Indonesia with own ships as well as via slot chartering of major global carriers. The enterprise inland port and terminal accomplish the following logistical activities: Inland transportation service; CFS services; Container (empty) depot services; Container maintenance, repair and cleaning; Forwarding (incl. Custom clearance & documentation service); Warehouse and distribution services. To accomplish these activities under mentioned key logistics resources are required: Dry port facilities and terminals; Warehouses; Trucks / trailers; handling equipment: Reach stackers / RTGs, Forklifts / empty handlers, Terminal tractor / chassis and professional staffs.

1.3. STATEMENT OF THE PROBLEM

Ethiopia is a landlocked country with a land area of about 1.13 million sq. km and a population of about 112 million in midyear, 2019 (world population projection, 2019 data booklet UN DESA); this event occurred following the withdrawal of Eritrea in 1991.

According to Vienna Program of Action (VPOA) for Landlocked Developing Countries in 2014–2024, the significance of the inland port and terminals located in land locked countries, like Ethiopia, serving as main outlet linkage to the sea ports that serves as an economic tool for minimizing challenges to maritime transport access and promoting economic growth and competitiveness of the country. They play a pivotal role as means of foreign currency expenditure saving, Import/Export trade facilitation, safety and security for its export and import cargo. Currently there are 44 landlocked countries in the world and a new program has been devised to support their transit transport services the UN-OHRLLS is implementing a 10 years program namely, Vienna Program of Action (VPOA) for Landlocked Developing Countries in 2014–2024.

As a landlocked country, Ethiopia face the challenge of physical isolation, supply chain related barriers from the sea and the high costs of trading with the rest of the world (UNECFA, 2011). According to World Bank (2018), Ethiopia has registered an accelerated and consistent economic growth in recent years. This economic growth has brought about a rapid increase in volume and type of the country's import–export trade.

It is been obvious that modern logistics system plays an important role in enabling a rapid economic growth of a country so as to ensure sustainable development. However, the Ethiopia's logistics systems are still at the early stage of development compared with the global best practices, and have not adequately facilitated the operation of the country's international trade in competitive way. This is why the logistics performance indicators (LPI)

measured by the World Bank (2016) have shown that Ethiopia has been one of the least performing countries in the world (FDRE NLS, 2019). This has been, particularly, characterized by high freight transit time, longer cargo dwell time as well as ship's turnaround time in ports. The acute capacity limitation has hindered the accommodation of the increased trade cargo flows. Based on the indicators (LPI, 2016) in 2014 and 2016 Ethiopia's logistics performance had been one of the lowest performing countries in trade logistics i.e., 126th out of 160 countries in LPI rank . From the data it has been noted that while the logistics performance of many countries has shown improvement, Ethiopia's performance has deteriorated on the contrast. It is not only the lowest, but it is far behind relative to competing and peer group of countries logistics performance in light manufacturing. Based on WB recent LPI survey (i.e. 2012–2018) aggregated LPI rank, Ethiopia's position has declined from 126th to 131th (FDRE NLS, 2019).

By taking the above ground into account, Ethiopian Government has recognized that poor logistic performance as a major impediment, and has considered the improvement of this enabling service as a core perspective of the country's economic development. A comprehensive National Logistics Strategy, 2019 has, thus, been recently developed for implementation in order to address the shortcomings, and transform the country's trade logistics sector. And believed to transform fundamentally the country's trade logistics sector and produce a radical positive impact on the Country's foreign trade proceedings upon its effective implementation.

Ethiopia's foreign trade volume has also increased over the past years, in line with the growth trend of the global trade. In 1991, the Country's foreign trade was 1.3 Million tons and in 2018 it reached 12.5million tons (FDRE NLS, 2019). The development of the country's logistics service has not, however, matched the demand of the trade. Poor infrastructure, inadequate transport service, limitations in trade financing, inefficient transit and corridor services, cumbersome customs procedures and non-deployment of trained human resource and very low ranking against world logistics performance indicators depict that the country's logistics sector is utterly underdeveloped. This has become one of the hindrances to attract investment and a bottleneck for trade competitiveness of the country. Therefore, in order to ease the flows of export and import trading as well as to reduce some problems faced in the transit countries: Djibouti, Sudan, Kenya and Somalia the Government of Ethiopia gives prior concern to the sector and hence has established its own Inland Port and Terminal Enterprise i.e. Ethiopian Shipping & Logistics Service Enterprise (ESLSE).

The Enterprise (i.e. ESLSE), is stated owned and has the responsibility to run export and import logistics activities of the country via maritime and land transport. To carry out its main logistics activities, the Enterprise had established seven Inland Port and Terminal branch offices at different geographical strategic places which are recognized as the key link to trade –corridors of the country to provide effective and efficient port and terminal logistics services. These geographical strategic places are: Modjo, Semera, Kombolcha, Dire Dawa, Mekele, Gelan and Kality (Addis Ababa). In addition to the above, the Enterprise has recently built and inaugurated another port & terminal branch office at Woreta, South Gonder which located in Amhara Regional State to deliver port operational services since the beginning of 2020.

The research take into account the existing logistics flows of the country which depends on Djibouti as main outlet of trade and hence the Enterprise has established its dry port along trade corridor for its export and import of the country. This researcher, although, has focused on one of the Enterprise’s major inland port branch office (i.e. Modjo Dry Port and Terminal. The researcher, therefore, has outlined some constraints that hinder the country’s trade to be competitive in the global market that lag the Enterprise to realize and achieve its objectives effectively, particularly in attaining economic advantages to Logistics Industry of the country, such as road transport from/to port of Djibouti being burdensome to trucks as the existing road constructed in poor quality, poor security prevalence to transport cargoes by road, complexity of cargoes loading and unloading process, the terminal development and prepared for operation which makes the terminal incapable to manage the ever growing volume of import/export cargoes, staff members might lack some awareness on their vital contributions to the final port and terminal operation outcome, ICT infrastructure are not fully computerized to facilitate dry port operations, and the existing of poor operational integration between Custom Authority and Modjo dry port and terminal office. Therefore, the researcher made an effort to assess, discuss and analyze the above mentioned gaps and addresses possible alternatives that used to alleviate the problems.

1.4 RESEARCH QUESTIONS

The research questions of the study were:

1. What are the major contributions of Inland Port and Terminal for a country economic development?
2. What are the main implications of inland port and terminal development to operate the logistics flows of the country smoothly?

3. What is the logistics performance index (LPI) of the Enterprise's inland port and terminal activities?
4. Does the Enterprise employees' (i.e. work at Modjo port terminal branch office) have some awareness on the assigned port operation that contribute for economic development of the country?
5. What major dry port operational challenges exist in Mojo Inland port and Terminal?
6. What cargo (container) flows trends have been seen at Mojo port and Terminal for the past five fiscal years?

1.5. RESEARCH OBJECTIVES

1.5.1. General Objective:

The general objective of this research is to analyze the contribution of the Inland port and terminal development for Ethiopian Logistics Industry based on Modjo Port and Terminal performance.

1.5.2. Specific Objective:

The specific objectives of the study are:

1. To identify some contribution of Inland port and terminal for the country economic development
2. To detect main implication of inland port and terminal development to operate the logistics flows of the country smoothly
3. To evaluate the logistics performance index of the Enterprise's inland port and terminal activities
4. To appraise the awareness of employees' (of Modjo port terminal branch office) as skilled manpower who have required competence on the assigned port operation that contribute for economic development of the country
5. To identify major dry port operational problems of Modjo Inland port and terminal of the Enterprise

1.6. Significance of the study

The study is significantly worthwhile to indicate or point out the contribution of the Inland port and terminal development to the Logistics Industry of the country. The research tries to analyze its economic benefits in line to the volume of operation, capacity to fulfill the objective of the Enterprise, and by selecting Modjo Port and Terminal Branch Office as convenient

location for the study. In addition, it enables to identify the challenges & the gap to be considering for efficient and effective service provision, & the possible solution to alleviate the identified problems. Also it provides new insight to other researchers in this area.

1.7. Scope of the study

This study is delimited to assess the contribution of Inland port and terminal development to Ethiopia Logistics Industry based on one of Inland port and terminal branch of the enterprise, namely Mojo port and terminal branch office in which the major import/export cargo of the country handle and also other logistics and custom clearance service provided.

1.8. Limitation of the study

The limitations of the study were the notorious COVID-19 epidemic diseases that restrict the physical distance of individuals and affect the movement the people; besides the scarcity of reference material that obstruct the researcher to collect more information on the subject under study.

THE CHAPTER TWO

REVIEW OF RELATED LITERATURE

A review of existing literature revealed that articles on contribution of Inland port and terminal development for a country logistics industry are inadequate. However, the Inland port and terminal development concepts are well developed and are adequately available in the body of literature reviewed. In this review the researcher explores theoretical and practical review of experiences related to Inland ports and terminal development and in particular their contribution for a country logistics industry and to establish the significance of dry ports as a solution for the challenges of LLDCs tried to give a summary of the review.

2.1 Definition and Function of Dry Ports

2.1.1 Definition of the term dry port

Many scholars define the term dry port in different ways. For instance, UNCTAD (1991) define dry port as:

“An inland terminal, to which shipping companies issue their own import bills of lading for import cargoes, assuming full responsibility of costs, conditions; and from which shipping companies issue their own bills of lading for export cargo’s.

Dry ports could be inland terminals within a country that has a gateway port or they could be located in adjacent land-locked countries in the hinterland of one or more sea ports. The concept came into wide spread use in conjunction with containerization and this is the context in which the term is used here UNCTAD (1991).

As in the works of Abdurezak Mussema (2016) stated that, Dry Port or Inland Clearance Depot (ICD) also defined as: “ A common user facility with public authority status, equipped with fixed installations and offering services for handling and temporary storage of any kind of goods (including containers) carried under customs transit by any applicable mode of transport, placed under customs control and with customs and other agencies competent to clear goods for home use, warehousing, temporary admissions, re-export, temporary storage for onward transit and outright export.”

As Charuka, Blessing (2014) reviewed, Leveque and Roso (2002) gave the following dry port definition:

“A dry port is an inland intermodal terminal directly connected to seaport(s) with high capacity transport mean(s), where customers can leave/pick up their standardized units as if directly to a seaport.”

Roso et al. (2009) also define dry port as; “an inland intermodal terminal directly connected to seaport(s) with high capacity transport mean(s), where customers can leave/pick up their standardized units as if directly to a seaport” (quoted by Abdurezak Mussema , 2016)

Abdurezak Mussema, (2016) define dry ports as place where located inland from sea ports but are linked directly to the sea port(s) or, in the case of international land movements, are in contact with the sources of imports and destinations of exports. Dry ports may be used whether a country has sea ports or is land-locked, but only surface modes of transport are involved in giving access to them. From the above definition it has been learned that the concept dry port gives emphasis to customers who can leave or pick up their goods as if directly at seaport and concludes that a dry port is an extension of the seaport. Simply stated, dry ports are specific sites to which imports and exports can be consigned for inspection by customs and which can be specified as the origin or destination of goods in transit accompanied by documentation such as the combined transport bill of lading or multi-modal transport document.

2.1.2 Function of dry port

As Charuka, Blessing (2014) quoted the works of Roso (2008) and others have been recognized the importance of dry ports through extensive research on the functions and benefits of dry ports as part of a logistics system. For instance, dry ports relieve seaports by shifting some of the activities initially done at the seaport to the dry port thereby relieving the seaport of congestion.

Dadvar et al. (2010) conducted a feasibility of dry ports in LLCs and concluded that dry ports reduce truck distances and improve trade (Dadvar et al., 2010, p33, quoted in Charuka, Blessing (2014). Dry ports may be used whether a country has sea ports or is landlocked, but only surface modes of transport are involved in giving access to them. A dry port can be understood as an inland setting with cargo-handling

facilities to allow several functions to carry out, for example, cargo consolidation and distribution, temporary storage of containers, custom clearance, connection between different transport modes, allowing agglomeration of institutions (both private and public) which facilitates the interactions between different stakeholders along the supply chain, etc. (Ng and Gujar, 2009; quoted in Charuka, Blessing (2014).

In general, a dry port conducts functions very similar to contemporary seaports, especially its role as the distributional nodal points along intermodal supply chains (Meersman, et al. 2005; quoted in Charuka, Blessing (2014). As a crucial part of the international transportation systems, ports are not solely independent and natural area for the transfer of physical goods, but also a systematic element of (often multimodal) logistical supply chain (Gujar, 2011; quoted in Charuka, Blessing (2014).

Therefore, the role of a dry port within this system is becoming particularly important. Due to the roles of dry ports in the coordination of materials and information flows; minimization of costs; as well as reliable cargo handling which is becoming crucial as a functional part of the global logistics and supply chain management. The benefits and potential benefits of dry ports are summarized by UNCTAD (1991) as follows:

- Increased trade flows: beneficial to a region or to the country as a whole.
- Lower door-to-door freight rates: the consolidation of consignments and the greater use of containerization can contribute significantly to the introduction of lower through rates.
- Containerization offers numerous advantages.
- Avoidance of clearing and forwarding agents' fees at sea ports: These fees may be completely avoided where a dry port allows the use of combined transport bills of lading or multi-modal transport documents. This is so when such documents are issued by a shipping line because the shipping line takes responsibility for the passage of goods through the maritime port. Hence the importer or exporter does not need to employ a clearing and forwarding agent.
- Avoidance of storage, demurrage and late documentation fees: In traditional transit systems, goods are frequently held up at maritime ports or at land borders owing to the absence of documentation (such as ocean bills of lading

or commercial invoices), minor irregularities in existing documentation, prepayment of handling charges in foreign currency, lapse of a bond, non-availability of onward transport, etc. in all such circumstances, storage charges beyond the permitted free periods allowed may accrue, or demurrage charges and late documentation fees may arise.

- With a dry port and combined transport bills of lading, customs inspection at the maritime ports and at the borders of transit countries should be unnecessary or at least greatly minimized and many of the usual causes of delay at maritime ports will be removed.
- Storage costs, demurrage and late documentation fees will thus not occur.
- Better utilization of capacity: A dry port can reduce empty rail wagon or truck movements by acting as a consolidation center for return loads of export cargo. The consignment increase in load factor may enable some savings to be made in overall transport costs.
- Greater use of containers: the establishment of a dry port with container-handling facilities can encourage greater use of containers.
- In containerization cargo is carried in boxes of standard dimensions allows these containers to be handled mechanically, transferred from one mode of transport to another efficiently and without disturbing the actual cargo inside; owing to high unit volume and weight handled per move, the productivity of handling equipment and throughputs is many times greater than if the same volumes of cargo were handled in break-bulk fashion.
- This advantage, coupled with standardization of the dimensions of containers, has revolutionized general cargo transport and handling methods.
- Lower customs staff costs: As dry ports allow customs clearance to be concentrated at a few sites, it may be possible to effects the same volume of clearance with reduced customs involvement, especially where a dry port is accessed by two or more gateway ports.
- Benefits to sea ports: apart from lowering congestion, the establishment of dry ports also results in reduced handling of goods at related maritime ports.
- There is a reduction in demand for storage space owing to faster onward transit, saving in both capital costs of providing handling equipment and warehousing as well as in equipment maintenance costs.

- With greater containerization of transit cargos, maritime ports also gain the advantage of higher berth throughputs, thus reducing the cost per unit of cargo handled.
- Improved communications: Simple, rapid transfer of documentation and information, fundamental to efficient cargo transit, may be achieved by linking the introduction of computerized freight tracking or customs clearance to the provision of a dry port.

2.3. Theoretical & Empirical Literature Review

2.3.1 Theoretical Literature Review

As cited in Abdurezak Mussema, 2016 works; Ports have always had an important role in the development of national and international trade of countries, currently challenged by globalization, with implications for sustained economic development of their regions (Gaur, 2005). Globalization, emerged from trade growth between continents, regions and countries, has led to an expansion of global sea trade with huge impacts for ports. Increasing competition between transport modes and growing capacity per unit of transport demand for higher performance level in ports, which largely depend on their characteristics, such as infrastructure, equipment, governance structure and integration in logistic networks (Caldeirinha et al. 2011; quoted by Abdurezak Mussema, 2016). With the development of global multimodal supply chains, dry ports have been assumed increasing importance to suit the need for market development, smooth integration and closer collaboration between the different participants of the supply chain and transport network. Thus, it is a natural outcome for the ports to extend the services to locations situated further hinterland by either patronizing, forming strategic alliances or buying out existing dry ports so as to optimize the supply chain (Lee and Kim, 2003; quoted by Abdurezak Mussema, 2016). The ability of countries to deliver and/or receive goods and services on time and at the lowest possible cost is a key determinant of integration into the world economy today. Logistics services which include activities required for the transportation, storage and handling of production inputs and finished products from producers to consumers (or intermediary producer), play a critical role in international trade (Caldeirinha et al. 2011; quoted by Abdurezak Mussema, 2016). Consequently, the efficient supply of logistics services helps to facilitate international trade. Hence, the more timely, reliable and efficient the

logistics supply chain, the more efficiently and reliably goods can be delivered from the point of production to the point of consumption (Tilahun, 2014).

Thus as inland logistics centers, dry ports are playing an increasingly pivotal role in the multimodal transport network that sustains economic activity by delivering key inputs to local enterprises and facilitating their exports of raw materials, semi-manufactured products, and finished goods (Sanchez et al., 2003;quoted by Abdurezak Mussema,2016).In a competitive environment, the performance of a container terminal is determined by several factors, such as the market of the region where it is located, the physical and organizational capacity, the integration in the logistic networks, the level of competition, maritime and inland accessibilities, the type of handling equipment used at the quay and parking areas, the liner shipping services and inland networks to which they are connected (Tongzon & Heng, 2005;quoted by Abdurezak Mussema,2016).

As Abdurezak Mussema, 2016 reviewed, Port performance measurement is a challenging issue for most ports. The increased use of containerization and supply chains, the development of new production-distribution consumption systems and increased specialization of the different port markets have all affected port organization management and operation (Notteboom and Rodrigue, 2005). Understanding the levels of performance achieved is at the core of the strategy of port authorities and operators, in order to deploy strategies that address the needs of port users, increase competitiveness, and thus market shares (quoted by Abdurezak Mussema, 2016).

As cited in Abdurezak Mussema, 2016 works, according to Khalid & Richard (2004) measures of port efficiency or performance indicators use a diverse range of techniques for assessment and analysis. UNCTAD (1982) suggests two categories of port performance indicators: macro performance indicators quantifying aggregate port impacts on economic activity, and micro performance indicators evaluating input/output ratio measurements of port operations. According to Khalid and Richard (2004) there are many ways of measuring port efficiency or productivity, which could be categorized in to three broad categories which are: physical indicators, factor productivity indicators, and economic and financial indicators. Physical indicators generally refer to time measures and are mainly concerned with the ship (e.g. ship turnaround time, ship waiting time, berth occupancy rate, working time at berth). Sometimes, co-ordination with land modes of transport is measured,

e.g. cargo dwell time or the time elapsed between cargos being unloaded from a ship until it leaves the port. Factor productivity indicators also tend to focus on the maritime side of the port, for example to measure both labor and capital required to load and unload goods from a ship. Similarly, economic and financial indicators are usually related to the sea access, for example, operating surplus or total income and expenditure related to gross registered tons (GRT) or net registered tons (NRT), or charge per twenty foot equivalent unit (TEU).

As quoted by Abdurezak Mussema, 2016, most port authorities and operators have made significant infrastructure investments in order to reduce operational costs and improve service quality, which are important factors that influence terminal performance (Cullinane and Wang, 2009). Furthermore, investments in inland accesses are very important to expand the hinterland and contribute to improve port performance. Inland accessibility and terminal hinterland are driven by transport costs, alternative modes, capacity and quality of inland connections and transport service quality, as well as integration on the main land transport networks or at the crossroads of inland trade routes.

Moreover, as quoted by Abdurezak Mussema, 2016, De Langen (2004) argued that coordination between the active players of both hinterland network and port is necessary. The port service quality depends on the performance of many players, including port operators, freight forwarders, container operators and port authority and that influences the overall port performance. Port terminals increasingly seek to improve service quality and hinterland connectivity in order to meet the logistic network demands (Notteboom and Winkelmanns, 2004; quoted by Abdurezak Mussema, 2016). Besides improving the service quality, ports and terminals should also contribute to improve competitiveness and performance of the supply chains in which they are integrated (Tongzon et al., 2009). Due to the intermodal nature of the container transport network, terminals must necessarily be an efficient and effective connection point between different transportation modes (quoted by Abdurezak Mussema, 2016).

2.3.2 Empirical Literature Review

As Abdurezak Mussema, 2016 reviewed; according to Sanchez et al. (2003) ports are a major determinant of shipping costs, proving the importance and the strong impact of efficiency on unit costs and competitiveness. Caldirinahaet.al,2011; on their study

they focus on analyzing the impact of characterizing factors on the port performance, using operational, financial and efficiency indicators (quoted by Abdurezak Mussema,2016). Considering the multidimensional nature of port performance, the study aims to analyze which characterizing factors are relevant and what measure the relationships. The study employed Data Envelopment Analysis (DEA), statistics of factor analysis and linear regression methods based on a sample of 43 European ports and the results of this study indicate the existence of a relationship between performance and several variables that characterize the port. Additionally, they also confirm the impact of location, governance, size, infrastructure, specialization, logistic integration and maritime services in the ports operational and financial performance and efficiency.

Nyema (2014) assess factors influencing container terminals efficiency with a case study of the Mombasa Entry Port using a descriptive survey design (quoted by Abdurezak Mussema, 2016). This study revealed that factors such as inadequate cargo handling equipment, reducing berth times and delays of container ships, dwell time, container cargo and truck turnaround time, custom clearance, limited storage capacity, poor multi-modal connections to hinterland and infrastructure directly influencing container terminal efficiency. Balciet.al. (2014) studied determinants of dry bulk port selection and analyses factors considered by shippers and forwarders in selection of ports using exploratory survey method and the result indicates that physical and technical structure of port, cargo handling speed, handling cost, storage facilities, location, customer relations, port reliability and hinterland connection are found to be important factors in determining the performance of ports (quoted by Abdurezak Mussema, 2016).

Ruto and Datche (2015) study logistical factors influencing port performance taking Kenya port Authority as a case study (quoted by Abdurezak Mussema, 2016). The study use survey research design and employs descriptive statistics analysis and summaries the causes of poor performance in the port of Mombasa according to the findings are: lengthy customs clearing procedures, rapid growth of container trade, frequent break down of Kenya Revenue Authority (KRA) and Kenya Ports Authority (KPA), IT Systems, slow gate out process and slow container off-take to Container Freight Station, inadequate yard capacity and lengthy KRA clearing procedures, poor yard planning and in adequate usage of IT in yard planning, poor working corporate culture by the corporate staff and poor hinterland connectivity.

Abdurezak Mussema, 2016 quoted that; Tongzon (1995) tried to specify some factors that could influence port efficiency. He focused on determinants of port throughput, including as key parameters the location of the port, the frequency of ship calls, port charges, the economic activity and the terminal efficiency (which is in turn affected by container mix, the work practices, the crane efficiency and the vessel size and cargo exchange). The study employed multiple regression models and the result showed that terminal efficiency, frequency of ship calls and economic activities are important factors in influencing port performance.

Yeo et al. (2008) in their study tried to identify and evaluate the competitiveness of major ports in Korea and China and their study identifies the components influencing their competitiveness and presents a structure for evaluating them (quoted by Abdurezak Mussema,2016). Based on the literature related to port selection and competition, a regional survey of shipping companies and owners employed factor analysis to reveal that port service, hinterland condition, availability, convenience, logistics cost, regional center and connectivity are the determining factors in these regions. As cited by Abdurezak Mussema, 2016; Rajasekar and Deo (2014) tried to identify the determinant factors for port performance of major ports in India during 1993 – 2011. For identifying the factors panel data models like pooled ordinary least square method, fixed effect model and random effect model are used. The results of the study indicated that berth throughput, operating expenses, number of employees, cargo equipment's and idle time showed significant effect on port performance. Scholars experimented with several perceptions of performance, with user's perception emerging as part of the relevant debate in the recent past.

Ng (2006) asserted that, targeting the container ports in Northern Europe, shipping Modjo Branch office of the Enterprise considered the effectiveness of port, geographical location, and service quality more important than the cost of port (quoted by Abdurezak Mussema,2016). Also, Ng (2006) proposed that individual groups of port users showed different priority ranks for the importance of the select factors. Besides this, this study points out the fact that the select factors for port depend on the qualitative factors such as reliability, proximity, frequency, security, and reputation and cost factors.

Panayides and Song (2009) also identified information systems, communication and informal relations in the supply chain as essential to performance, productivity and competitiveness of supply chains and port networks (quoted by Abdurezak

Mussema,2016). Information and communication systems can improve the efficiency of supply chain operations contributing to achieve its purposes (Cachon and Fisher, 2000). Furthermore, information sharing is regarded as an effective way to contribute to improve container terminal integration in the supply chains. It allows companies to improve safety, reliability in a faster synchronized process with impacts in terms of costs and service quality (Zhao et al., 2002; quoted by Abdurezak Mussema, 2016) because information systems avoid duplication of documents, maintain data integrity along the transport chain and reduce costs.

As cited by Abdurezak Mussema, 2016; Turner et al. (2004) examined the impact of hinterland and maritime accessibilities on performance and Gaur (2005) identified factors that affect the terminal performance, including maritime access and hinterland connectivity. In general, the performance of a port has a multivariable behavior. According to Brooks and Pallis (2008) port performance research can be divided into effectiveness research and efficiency research. Efficiency has been noted as ‘doing things right’ while effectiveness is ‘doing the right things’. The right things are those that are important to the customer. If a negative and significant gap exists between the importance of those right things and the performance of them, dissatisfaction is the byproduct. In combination, these two port performance components also provide government policy-makers with the essential feedback for assessing the governance structure of ports in meeting national strategic objectives.

2.4 Challenges faced by landlocked country

As Charuka,Blessing (2014) work noted that, LLDCs may face numerous challenges when implementing dry ports. Firstly, the dry port might increase transport costs in the logistics chain if charges are too high or institutional barriers are not revised, resulting in operational inefficiencies. Inefficiencies eventually decrease the total throughput, leading to dry port failure.

LLDCs must minimize both physical and non-physical barriers to trade. If not, the dry port may fail to attract customers and promote the modal shift of cargo from road to rail. Therefore, the quality of institutions is import for dry port success.

In addition, a dry port may fail to generate the critical volumes of cargo required to be a viable dry port as revealed by Roso et al. (2004). Roso asserted that the dry port throughput should not fall below half the minimum annual volume of 20,000 TEU; i.e., 10,000 TEU. If it does, then the dry port will have problems of viability (Roso

et al., 2004). Moreover, to be viable, a dry port must generate volumes sufficient to provide a daily train service (quoted by Charuka, Blessing (2014)).

If a dry port is not initially strategically located because of say political reasons, it may end up being a white elephant. Ritten (1998) expressed that a key challenge is that future shipments that will pass through the dry port cannot be pre-determined with certainty so as to establish the viability of the dry port (as cited in Roso, 2008; quoted in Charuka, Blessing (2014)).

The possible challenges for LLDCs also include the following:

1. Long distance between dry port and sea port may result in poor synchronization of services between the two supply chain nodes (Beresford et al., 2012).
2. Shippers may have low confidence in dry port reliability and efficiency from the onset, sabotaging the system. For this reason, a rigorous marketing plan is needed for the success of the dry port. Promotional activities must ensure coordination between dry port and seaport.
3. Road transport operators may fear losing their jobs, particularly cross-border truck drivers (Beresford et al., 2012).
4. Fewer private logistic players may be willing to partner government initiatives on dry port projects.
5. Poor infrastructure and logistics at dry ports will eventually result in long lead times in the supply chain.
6. When a dry port is located inside a landlocked country, there may be no direct agreement to allow direct transit of trains between States, as is the case in SADC at the time of writing. Kunaka (2013) pointed out that trains may have to change locomotives at borders causing significant delays (Kunaka, 2013, p. 90).
7. Exports from LLCs are typically bulk in nature whereas imports are value added commodities. This complicated the nature of trade imbalances.
8. Other challenges are associated with security. Security is a prerequisite of a dry port. A dry port houses valuable goods for export or import or goods temporarily stored for transshipment or break bulk for re-export. Consequently, security is required (UNCTAD, 1991). A suitable level of security has to be provided. The level of security should be similar in nature

to the International Ships and Ports Security Code (ISPS Code) requirements for seaports.

2.4.1 Logistics Performance Reports of Landlocked Countries

According to MAA (2018), there are 44 landlocked countries in the world and a new program has been devised to support their transit transport services. At present time, the UN-OHRLLS is implementing a 10 years program namely, Vienna Program of Action (VPOA) for Landlocked Developing Countries in 2014–2024. The responsible body organized to oversee the implementation of the VPOA has published an assessment report on landlocked countries transit transport systems. According to this report, progress has been observed on Ethiopia's transit transport system in terms of the development of road, logistics facilities and other related infrastructures, and establishing bilateral agreements with coastal neighbors on port utilization. While the government made subsequent efforts, the evaluation report shows that there is still a wide gap when compared with the expected results.

Like many landlocked countries, Ethiopia faces challenges with access to maritime transport. The primary challenge is that Ethiopian import and exporters travel long distances in order to reach seaports in neighboring countries. Long distances to seaport result in high transport costs driven by complex logistics. Consequently, high transport costs have negative impacts on shippers in both export and import businesses as fewer traders will be able to operate. This results in reduced trade-led economic growth.

2.4.2. World Economic Forum

Competitiveness is the ability of a nation to create and maintain an environment that sustains more value creation for its enterprises and more prosperity for its people. World Economic Forum measures the competitiveness of global economies using the global competitiveness index. According to this four-point index measurement, Ethiopia has scored low performance under different pillars (MAA, 2018)

2.4.3. Summary on Global Reports

According to MAA (2018), under global logistics performance indicators by utilizing LPI, landlocked countries logistics performance indicators, and global competitiveness index, Ethiopia has scored very low performance in all respects.

2.4.4. Logistics Cost and Time in Ethiopia

Cost, time and service reliability are the three key indicators of the logistics system. To analyze the country's logistics system and to have a complete understanding of its performance, import and export trade activities have been classified under five main processes & further analysis was undertaken to identify the problems and corresponding causes (MAA, 2018). The following sections present different findings that are derived from detailed data analysis.

❖ Import and Export Cargo Flows

The country annual import cargos have reached 14 million tons. This amount can be classified as;

- Containerized: 3.2 million metric tons.....which is 23%
- Dry bulk.....4.0 million tons..... which is 28%
- Petroleum products.... 4.1 million tons..... which is 29%
- Steel and other general cargoes: 2.9 million tons, which is about 20%

Ethiopia's export cargo has reached 2 million tons annually, with an estimated annual export cargo of 65,000 containers or 1.3 million tons through the port of Djibouti. With regards to analyzing import cargoes logistics time and cost, relatively broader analysis for containerized cargo, and brief data analysis for other cargoes in accordance with their operational characteristics have presented as follows.

❖ Logistics Time

There are several factors that determine logistics time including, transport system, modes of transport, and origin and destination of cargo. Logistics time is the average time required to perform multiple functions in the transport process. Lead time to import cargo to Ethiopia was analyzed by taking the time from issuing a purchase order by importers to delivery of the goods to final destination. Lead time for export cargo has been computed by considering average time from export preparation to shipment of cargoes at the destination seaport. This is the standard measure of logistics time applied in several countries. The same practice was followed to analyze Ethiopia's import/export logistics time. The analysis is presented as follows.

❖ Import Cargo Containerized Cargo

Lead-time for Import

Lead time to import refers to the time necessary to accomplish all functions required to import goods. These include time taken to obtain foreign currency bank permit, L/C opening and sending to exporters, shipment preparation by the exporter, delivery of cargoes onboard ships at the port of loading, maritime transport from the port of loading to the port of discharge, cargo handling operations at the destination port, inland transport, and customs clearance.

Though the lead time includes the time required by exporters for shipment preparation and delivery to the port of loading, this process has not been considered, because this process is similar for all origins (quoted by MAA, 2018). During this period, foreign currency permit from a bank and port dwell time makeup the largest share (65%). This is extremely higher than any other international standard. Even, it is double than that of Eastern Africa countries.

MAA (2018) revealed that; on average 78 days from shipment preparation at the port of loading to shipment delivery to the port of discharge. Following the discharging operation, it takes on average 42 days to deliver cargo to the consignee. This transit time considers time from the beginning of cargo clearing process at the destination port (Djibouti) by the importer to shipment delivery to the consignee. For unimodal transport, the transit time includes completion of the seaport formalities, customs clearing, land transport, customs clearing and shipment delivery. Under multimodal transport, the transit time includes the time required to complete seaport formalities, land transport to inland dry ports, customs and port clearance by importers and shipment delivery to the consignee.

In the work of Charuka, Blessing (2014) noted that, Arvis, Raballand and Marteau (2007) discussed the logistics and supply chain reliability aspects of being landlocked and established that despite the tremendous reduction in maritime transport cost and advancement logistics technology that reduces transport costs, lack of direct sea-access is a major challenge for the growth and development of LLDCs (Arvis, Raballand, & Marteau, 2007, p. 3).

Likewise Charuka, Blessing (2014) quoted that, Arvis, et al. (2012) explained the detrimental effect of high logistics costs to the competitiveness of developing landlocked countries in world markets. The authors clarified that the combination of long distances and poor logistics systems is unattractive for trade. To compound this, rent-seeking activities along the corridors make logistics highly complex and

unpredictable (Arvis et al., 2012). And, on average LLDCs trade 30% less than coastal States and pay 50% extra in transport costs (p. 5). It is true also in the case of Ethiopia where transport costs are at least 50% higher than those of their coastal neighbors (Arvis, et al., 2007; quoted by Charuka, Blessing, 2014).

World Bank (2008) stated that high transportation costs for LLCs are a product of longer distances to seaports coupled with increased transit time, multiple border clearances and delays. The World Bank (2008) confirmed that the time taken to travel from the seaport to the destination is usually double for landlocked countries when compared to coastal countries. Moreover, being landlocked adds four days to exports and nine days to imports. Consequently, goods destined for landlocked countries stay longer in transit and at intermediate nodes than those bound for coastal states (quoted by Charuka, Blessing (2014).

Carmignani (2012) discussed that the curse of being landlocked and discovered that isolation from global markets affects economic development (quoted by Charuka, Blessing (2014). The overall conclusion was that landlockedness reduces international trade flows and hence economic development. This is also attributable to bad policy issues and poor institutional quality (Carmignani, 2012 p.3).

As Charuka, Blessing, (2014) quoted, Faye et al. (2003) conducted a case study that analyzed the challenges facing landlocked developing countries focusing on political relations and infrastructure. The authors explained that high transportation costs present LLDCs with a distinct disadvantage when compared to their coastal neighbors, particularly when competing in global markets (p. 8). Moreover, LLDCs are dependent on the transit and infrastructure levels of their neighbors, which may be weak. In addition, bad political relations with coastal neighbors present LLCs with unpleasant conditions. Worse still, civil war in coastal countries may close transit routes (Faye et al., 2003 P. 8).

Arvis et al. (2012) wrote that supply chain uncertainty is predominantly a problematic issue for shippers in LLDCs due to increase lead times. Increased lead times in turn result in high inventory costs arising from stockholding and in-transit inventory costs that eventually inflate the final cost of products on the market. In-transit delays also arise from road tolls; weigh bridges and lengthy delays at border posts (Arvis et al., 2012). They also explained that landlocked countries have long

transits and can only trade through the transit systems of their coastal neighbors (quoted by Charuka, Blessing, 2014).

2.4.5. Drivers of dry port development

As Charuka, Blessing 2014 quoted, the development and success of dry port requires the involvement and participation of all stakeholders (Roso, 2008; Monios, 2010; Dry port Project, 2010). The Dry port Project (2010) explained that public-private partnerships should be effectively integrated to ensure the success of the entire project (Dry port Project, 2010). Also, Jaržemskis and Vasiliauskas (2007) supported that dry ports should work in harmony with the seaport and hinterland markets to achieve efficiency (Jaržemskis & Vasiliauskas, 2007; quoted by Charuka, Blessing, 2014).

Ng et al. (2013) expressed international trade as a driver for dry port development. The authors explained that the rapid expansion of international trade and development of multimodal supply chains has triggered seaports to respond to the developments by investing in dry ports in order to control the supply chain (Ng et al., 2013; quoted by Charuka, Blessing, 2014). Supporting this, Chandrakant (2011), in his essay on dry ports explained that the fast-paced growth in international trade between countries has triggered exhaustion of port facilities and incapacity to handle huge trade volumes. Hence dry ports were developed to support seaport logistics (Ng et al., 2013; Chandrakant, 2011 quoted by Charuka, Blessing, 2014). Rodrigue and Notteboom (2014) explained that capacity issues are the main drivers for dry port development. In this view, dry ports become an indispensable solution to the challenges of both seaports and inland destinations (Rodrigue & Notteboom, 2014, p. 21, quoted by Charuka, Blessing, 2014).

Monios (2012) presented a paper on the increasing role of dry ports in hinterland locations. The author suggests that seaports are under pressure to innovate and cope with capacity constraints, competition and developments in logistics and supply chain management (Monios, 2012, p. 13; quoted by Charuka, Blessing, 2014).

UNESCAP (2013) claimed that dry ports play a pivotal role to integrate modes of transport, reduce border-crossing and transit delays and facilitate the use of energy-efficient and sustainable transport. Moreover, dry ports can work as seaports in LLCs thereby improving competitiveness. In addition, dry ports create new opportunities and address specific needs of landlocked countries (UNESCAP, 2013).

Moreover, dry ports can principally carry out all the functions and value-added services of a seaport necessary for shipping and forwarding of cargoes. It also explained that one of the primary purposes of a dry port is to promote the modal shift of freight from road onto more environmentally sustainable modes such as rail and inland waterways (Dry port Project, 2012, p. 3&39; quoted by Charuka, Blessing, 2014).

The African Bank (2010) discussed the development of African hub ports and explained that dry ports reduce container dwell time at seaports by moving them by rail to inland locations (p.191). The African Bank report affirmed the UNESCAP report that dry ports open opportunities for private investment in transportation.

Roso, Woxenius, and Lumsden (2008), explained the dry port concept and analyzed three types of dry ports namely close-range, mid-range and distant dry ports. The authors explained many benefits that can be derived from dry ports which are beneficial to all stakeholders. Importantly, the authors identified rail as the denominator that acts as a high capacity mode between the seaport and the dry port (quoted by Charuka, Blessing, 2014).

Also Kunaka (2013) analyzed different stages of dry port development in Africa and presented case studies on African dry ports. The author explained that empty trips associated with road transport may be reduced by dry ports while at the same time empty container redeployment is optimized. Also he mentioned that shipping lines and logistics players, such as the Bolloré African Logistics, have made great strides in dry ports and inland logistics (quoted by Charuka, Blessing, 2014). Therefore, it is logical for landlocked countries to take advantage of dry ports to develop and improve their trade and competitiveness.

2.5 Factors influence the Development of dry port development

As cited in Charuka, Blessing, 2014 works the following factors and trends in shipping and transport logistics influence the development of dry ports.

2.5.1 International trade

International trade demand maritime transport for effective shipping service. This has led seaports to respond to the development of dry ports.

2.5.2 Seaports and global terminal operators

Capacity challenges at seaports are the main driver for dry port development. Port incapacities are induced by rapid growth in trade. Therefore, seaports, terminal operators and third part logistics operators initiate dry port development.

2.5.3 Road congestion

Road transport dominates freight transport to seaports. This is mainly because of the flexibility of trucks to handle intermodal transport units, offer door-to-door delivery service.

2.5.4 Environmental Concerns

The emission of pollutants like carbon dioxide (CO₂), nitrogen oxide (NO₂) and other hydrocarbons (HCs) significantly impacts on the environment. This poses a threat to the health of people, animals and the environment. The emissions from road transport are five times more than rail transport.

2.5.5 Containerization and standardization

Born in 1957, containerization subsequently led to the standardization of cargo transport units for multimodal transportation to inland destinations (Dry port Project, 2009). The unitization and containerization of seaborne cargo led to increased cargo handling efficiency. Containerization facilitated development of dry ports and inspired rapid growth of door to door delivery services.

2.5.6 Globalization of supply chains.

Globalization has transformed seaports into value added logistics hubs. This logistics hub has increased demand for sea transport and indeed modern ports are attracting demand from their hinterlands by offering shippers value added services.

2.5.7 Modal shift from road to rail and inland waterways.

Most ports have shifted from traditional road to rail and inland waterway transport. The benefits are substantial and include achieving economies of scale and reduced transport costs since rail transport costs less per kilo meter when compared to road transport (UNCTAD, 2011). Moreover, environmental objectives are achieved by reducing carbon emissions and contributing towards green logistics.

2.5.8 Government Initiatives

Governments play an important role in formulating policy and regulatory controls to facilitate dry port development. The most important driver for LLDCs is the quest to minimize transport costs and improve overland logistics and supply chain

efficiency. Consequently, when governments venture into dry ports, they achieve both economic and social benefits since dry ports improve trade and also create jobs.

2.6 Types and benefits of dry ports

Roso et al., (2004) identified three types of dry ports namely short range, medium range and distant dry ports. In their assessment of distant dry ports, Beresford et al. (2009) further identify two more types of dry ports namely city dry ports and border dry ports. City dry port refers to dry ports located in cities far away from the seaport. City dry ports, by virtue of long distance from seaport require substantial amounts of investment. Moreover, long distance to seaport may result in poor synchronization between seaport and dry port. The major functions of border dry ports are transshipment and customs clearance service (quoted by Charuka, Blessing, 2014).

As the work of Charuka, Blessing noted that, border dry ports act as multimodal centers providing freight distribution to many cities in the hinterlands (Beresford et al., 2012). A border dry port must also serve the following purposes:

- Work synchronously with the seaport through the connectivity of an efficient mass means of transport.
- Extend the hinterland of shipping companies. Evidently, the new generation of dry ports is managed by shipping lines, terminal operators and third party. An example of this function is in Ethiopia where Ethiopian Shipping Lines is responsible for the cargo operations at Modjo dry port.
- Consolidate container flows and redistribute cargo considering both full container loads (FCL) and less-than container load (LCL) services. Resultantly, dry ports can significantly reduce empty container movement between seaport and hinterland by approximately 30 % (TransBaltic, 2012, p. 21).
- Facilitate regional economic integration through regional trade.

2.7 Dry port governance and policies

Regarding the governance & policies of the dry ports in the works of Charuka, Blessing (2014) mentioned that, it is not uncommon to have public ownership and private operation on a common user basis (UNCTAD, 1991). Usually, a dry port requires regional agreements between two or more countries through bilateral, trilateral or multilateral agreements. UNCTAD emphasizes that the whole system

should avoid the exploitation of dry port resources by exclusive parties and the creation of cartels.

Governance can either be public governance, private governance or public-private partnerships. Each model and funding method has its advantages and disadvantages. The private sector normally does not invest in infrastructure because of the huge capital cost involved. Therefore, the government has the obligation to develop dry ports while the private sector assumes operations under concession. Therefore, a number of policies from various sectors influence their development and operation. These include transportation and trade facilitation policy, multimodal transport policy, land policy and environment policy to name a few (quoted by Charuka, Blessing (2014).

In short, dry port development should be done in liaison with all stakeholders in LLCs and the neighboring coastal States. This is vital to ensure satisfactorily formulated policies effective for the development, management and efficient operation of dry ports. Moreover, effective implementation of international conventions and regional agreements on transport and trade facilitation are helpful (Delmas Marketing, 2011). Roso (2008) explained that a number of factors and actors influence the development and success of dry ports. The author outlines the actors in dry port investment as seaports, shipping lines, shippers, rail operators, road operators and society. The factors that affect dry ports are infrastructure, land use, regulation and environment.

2.8 Dry Ports in East Africa

As cited in the work of Sara Habtu 2018, traditionally, dry ports development and expansion was linked to economic growth and increase in volume of trade. The growth in the volume of trade turned such regions or places into the centers of attraction (Grishi, 2010). Key South East Asian ports like Singapore, Hong Kong, Mumbai and Shanghai are a classic example. Continuous rise in trade resulted in a rapid rise in demand for port services, of which failure to meet capacity needs created inefficiency and operational bottlenecks. Challenges to expansion in original sea ports included limited land or high cost of land, together with the high cost of relocating people and compensations for the destroyed property to pave way for port expansion. Many nations beginning with the most developed and industrialized established dry ports as a solution. Mombasa and Dares Salaam Sea ports found in Kenya

and Tanzania respectively are the current gate ways to East Africa from the Indian Ocean, although at hinterland Sea port in Lamu (Kenya).

Although East Africa lags behind Europe and as in terms of volume of trade and port development, it has not been an exception to the above assertion. For example, According to the China State Council's Information office white paper (2013), between 2000 and 2013, trade volume between China's and Africa increased rapidly from about \$10.5 Bn.to\$200Bn.This increase in trade together with impressive economic growth figures averaging5% per annum in the region impacted on the operations of ports because of a sharp rise in cargo(containers) and rise in demand for port related services. Andrew Roberts (2013) reported that as the trade and economic growth figures in East Africa increased, Seaport activities, traffic jam and congestion in creased at Mombasa Sea port too. For example, from2005to2008, imports at Mombasa port grew at an annual rate of9.7%(liquid bulk), 11.5% containerized cargo and at 23% (dry bulk).This implies that as trade and economic growth increased, the need for port services also increased and due to limitations in expansion of existing sea ports, investment in dry ports was required and this trend has led to recent investment in dry ports in East Africa. According to the Shippers Council of East Africa, (2013), Mombasa, the busiest container terminal in East Africa saw container volume increaseby25%inthe first half of 2012 alone, and handled an estimated 840,000 TEU in 2013 from about700, 000 TEUs the previous year.

2.9 Dry Port in Ethiopia

Ethiopia is one of the landlocked countries located at horn of Africa with more than 100 million populations. The country confronted with landlockedness challenges of lack of direct access of seaport, hindrance from global trade participation and dependency on the neighboring country seaport for import/export trade of the country that results high costs of trading with the rest of the world as of the withdrawal of Eretria. Because of these constraints the country became dependent on port of Djibouti as home seaport and establishes a trade route along Ethio-Djibouti corridor as main outlet to the seaport for its export/import. Yet, the port of Djibouti institute monopolistic port charges Practiced that exceedingly expensive to tolerate for Ethiopian import and export goods. Because of this problem Ethiopia motivated for establishment of own inland port and terminal to alleviate landlockedness related challenges and monopolistic port charges Djibouti and achieve the benefits of dry ports of the country (quoted by Charuka, 2014;).

Hence, Ethiopia commences development of its own inland port and terminal as mechanism for alleviation of landlockedness related challenges through optimization of dry port advantages. For

Ethiopia, as a landlocked country, dry ports serve as mitigation tools to the problems of freight transit cost, safety of freights and freight delays of import cargo at the port of Djibouti that consequently, being the reasons for confiscation of import cargo by the Djibouti government. Besides, they serve to save foreign currency from seaport expenses at Djibouti, to handle the customs inspections, documentation of cargo and packaging for import and export.

Accordingly, Ethiopian Shipping & Logistics Service Enterprise, under the government ownership, is assigned to shoulder the responsibility to run export and import logistics activities of the country via maritime and land transport through developing inland port and terminal facilities. Based on its responsibility shouldered by the government, ESLSE has established eight Inland Port and Terminal branch offices at different geographical strategic places which are recognized as the key link to trade - corridors of the country to provide effective and efficient port and terminal logistics services. These geographical strategic places are: Modjo 73Km east, Semera 580Km north, Kombolcha 380Km north, Dire Dawa 317Km east, Mekele 780Km north, Gelan 25Km east, Kality (Addis Ababa) and recently built and inaugurated inland port & terminal branch office at Woreta, South Gondar which is located in Amhara Regional State to deliver port operational services from the beginning of 2009 (quoted by Sara Habtu, 2018).

2.9.1 Modjo dry port, Ethiopia

The Modjo Inland port and terminal which is located 75 Km South East of the capital city Addis Ababa, Ethiopia having the size of about 63 hectares of land & situated near town of Modjo at coordinates of 8° 37' North and 39° 39' East between the town of Debereset and Adama. As mentioned here in above, the Modjo port and terminal was established with a cost of 20 million birr on a 63 hectare plot by the ESLSE. The port and terminal officially opened in 2010 with the objective to handle import/export cargo traffic to and from the seaport in order to reduce logistics costs by consolidating traffic in regional centers (Modjo Dry Port Master Plan, 2009).

2.10 Assessment of Ethiopia's Logistics Industry performance

The Logistics Industry contribution of a country is Provision of efficient and effective flow of goods, services and information that makes a country's import/export trade competitive in global market & serves to improve the quality of lives of citizen through alleviation of poverty. As a landlocked country, Ethiopia, face challenges of landlockedness such as physical isolation, supply chain related barriers from the sea and the high costs of trading with the rest of the world. Therefore, it is mandatory maintaining high performing trade corridors to the country's trade competitiveness. However, based on Global Institutions Reports, the country's logistics systems,

still at the early stage of development compared with the global best practices, and have not adequately enabled the country's international trade competitiveness (quoted by MAA, 2018). Above mentioned trade logistics service problem has been recognized by the government of Ethiopian as a major impediment, and considered as enabling key for improvement of this service as a core perspective of the country's economic development. Thus, a comprehensive National Logistics Strategy (NLS), has been developed for implementation in order to address the shortcomings, and transform the country's trade logistics sector (quoted by MAA, 2018).

2.10.1 Logistics Performance Based on Global Institutions Reports

The following international reports stated the status of Ethiopia's logistics system and its performance.

2.10.2 Logistics Performance Index – World Bank Group

Based on the World Bank (WB) measurement of the performances of international trade logistics of various countries by applying its standards known as the Logistics Performance Index (LPI) survey of every two years, serves as mechanism to initiate numerous policy reforms and development of strategies by providing relevant information for policy makers, private executives and any other stakeholders about the abilities of countries to manage logistics operations in the global business environment. According to this report, Ethiopia's status in LPI has been compared with the world's top performer country i.e., Germany and landlocked countries with poor logistics performance, As the comparison, under the six LPI components with selected countries, result shows that the Ethiopia's 2016 logistics performance found to be the poorest logistics performance of 126th out of 160 countries in 2014 and 2016. While the logistics performance of many countries has shown improvement, Ethiopia's performance has deteriorated on the contrast. And Ethiopia's logistics performance relative to competing and peer group of countries in light manufacturing is not only the lowest, but it is far behind. As a result, of 2016 LPI has used as a recent report for the analysis. However, based on 2012–2018 aggregated LPI rank, Ethiopia's position has declined from 126th to 131th (quoted by MAA, 2018).

2.10.3 Logistics Performance Reports of Landlocked Countries

According, the UN-OHRLLS that plan an implementation of 10 years program (known as VPA), for the current 44 Landlocked Developing Countries in 2014–2043; has been observed on Ethiopia's transit transport system in terms of the development of road, logistics facilities and other related infrastructures, and establishing bilateral agreements with coastal neighbors on port utilization. While the government made subsequent efforts, the evaluation report shows that there is still a wide gap when compared with the expected results (mentioned by MAA, 2018).

2.10.5 Summary on Global Reports

As per the global reports summary, the Ethiopia logistics performance compared using landlocked countries logistics performance indicators, and global competitiveness index, and found that has scored very low performance in all respects (MAA, 2018).

2.10.6 Logistics Cost and Time in Ethiopia

Ethiopia's export cargo has reached 2 million tons annually, with an estimated annual export cargo of 65,000 containers or 1.3 million tons through the port of Djibouti. There are several factors that determine logistics time including, transport system, modes of transport, and origin and destination of cargo. Logistics time is the average time required to perform multiple functions in the transport process. Lead time to import cargo to Ethiopia was analyzed by taking the time from issuing a purchase order by importers to delivery of the goods to final destination. Lead time for export cargo has been computed by considering average time from export preparation to shipment of cargoes at the destination seaport. This is the standard measure of logistics time applied in several countries (MAA, 2018). The same practice was followed to analyze Ethiopia's import/export logistics time. Accordingly, it is found that takes on average four months to import cargo into Ethiopia under the current logistics system. During this period, foreign currency permit from a bank and port dwell time makeup the largest share (65%). This is extremely higher than any other international standard. Even, it is double than that of Eastern Africa countries.

Moreover, it takes on average 78 days from shipment preparation at the port of loading to shipment delivery to the port of discharge. Following the discharging operation, it takes on average 42 days to deliver cargo to the consignee. This transit time considers time from the beginning of cargo clearing process at the destination port (Djibouti) by the importer to shipment delivery to the consignee. For unimodal transport, the transit time includes completion of the seaport formalities, customs clearing, land transport, customs clearing and shipment delivery. Under multimodal transport, the transit time includes the time required to complete seaport formalities, land transport to inland dry ports, customs and port clearance by importers and shipment delivery to the consignee. In terms of containerized general cargo, port dwell time at the port of Djibouti is 37 days and 59 days at Modjo dry port (quoted by MAA, 2018).

⇒ Dry Bulk Cargo

Dry bulk cargo includes fertilizer, wheat, grain, coal, and sugar which is about 4 million tons per year. This has a 28 percent share of the country's import trade. Out of the country's total dry bulk cargo import, over 80% is procured by the government. However, the government procurement system for dry bulk cargo is imposing a negative impact on the country's logistics system. Based

on an overall assessment, the total cost of this shipment has been estimated to be 6 billion Ethiopian birr per annum. Logistics cost is on average 103 USD per ton. The cost category includes: Shipping at sea: (29%*\$30/ton), Port service: (20%*\$21/ton), Road Tran & sport: (51%*\$52/ton).

Thus, the government annual logistics cost of dry bulk cargo is 257.5 million USD or 5.6 billion Ethiopian Birr. The cost does not include cargo value and other logistics costs. The average duration of a ship at anchorage was 15 days; occasionally the duration may extend to over a 2–3 months. The lead-time for this cargo is not consistent; sometimes it takes up to six months. It is also difficult to compare the lead-time, shipping time and port dwell time with other similar bulk cargo since the country's logistics performance is at a very low level. The main cause for this problem is lack of coordinated and integrated planning and management of information, finance and cargo at the national level (quoted by MAA, 2018).

⇒ **Petroleum Products**

Ethiopia's import of petroleum products i.e., fuel import through the port of Djibouti reached 4.1 million tons per year. The main problems on the transit of this cargo include; Inadequate & Expensive cargo handling capacity in Port of Djibouti, Excessive ship demurrage and theft. Regarding the high value and unique nature of this cargo, it is essential to provide facilities and a secured transportation system that will solve the problems related to shipping at sea, port handling capacity limitations and inefficient operations (quoted by MAA, 2018).

⇒ **Steel and Other general cargo**

The average dwell time for steel and other general cargo is above 30 days. This not only results in unnecessary additional costs, but it also affects the quality of cargo, especially it has a negative effect on steel quality. Some of the main causes for long dwell times include; Importers financial shortage, Market searching after cargoes arrival at port, & Lack of follow-up (quoted by MAA, 2018).

⇒ **Truck millage per year**

Increasing cargo trucks mileage per year will increase the likelihood of speeding up freights shipments from ports. Since cargo trucks in Ethiopia cover on average merely 60,000–80,000 KM per year, it is difficult to pick up cargo on-time.

Logistics time and cost to export, especially in terms of export products and manufacturing inputs, have shown that the country's logistics cost and time have been higher compared to those of competitive countries. The following three major reasons have been identified as major sources of this problem are: Small volume and fragmented shipments (economies of scale), longer

distance to sea, & inefficient logistics performance. The required time and cost to export such products using the available infrastructures makes the country non- competitive. In addition, the current performance rate of stuffing export cargo into containers in Ethiopia is only 33 percent. This has led the country to incur costs in foreign currency and also make the system inefficient (quoted by MAA, 2018).

2.11 Logistics Performance Assessment and Findings

As quoted by MAA, 2018, in the earlier parts of this study, data analysis has been carried out on the national logistics performance of Ethiopia with specific emphasis to logistics time and cost. This has been derived as an excerpt from a detailed study on logistics problems (diagnosis report). In the problem analysis of this strategy document, the time and cost required for each process has been estimated. Further comparative analysis has also been carried out in comparison with logistics costs and time of East African countries and other countries of the World. During each process, the problems, causes of problems and effects were analyzed. The findings showed that the country's overall logistics performance indicators in terms of time and cost are found at very low level compared to international standards. Relative to average logistics performance of countries found in East Africa, Ethiopia has scored more than twice higher in most performance indicators. The causes for the country's lower logistics performance are identified. Based on the analysis of these problems, the NLS need to address the fundamental problems to bring about profound positive effects and those which require special attention are identified, as here under.

2.11.1 Trade and Finance System

As it has been shown on the analysis of transit time and the total time and cost required importing, trade and finance system has 65% share of the process of importing cargo into the country. Regarding to port dwell time, the cargo dwell time is 10 times higher than the average global standard (average 3 days). Though there are different factors for cargo long dwell time, the key problem is the trade and finance system. For instance, the current practice of bulk cargo import is almost equivalent to using vessels as a warehouse. The major causes of this problem are difficulties of coordinating disparate importers with fragmented operations and a shortage of supply of foreign currency. Regarding cargo dwell time on seaports and dry ports, the practice of using containers for storage is mainly related to the trading and finance system more than transport logistics.

The country's trading and finance system has been identified as one of the key problems. The negative effect of the country's trading and finance system on logistics performance goes beyond the above mentioned, it has made the import trading system extensive to incur unnecessary

additional operations. Thus, transforming the trade and finance system has a significant role in creating an effective and responsive logistics system.

2.11.2 Excessive and Cumbersome Transit and Customs Procedures

There are several regulators and service providers participating in the process of importing and exporting cargo from origin to destination. These are freight forwarders, shipping companies, port terminal operators, and customs authorities of both Ethiopia and transit countries, border control and other related agencies. These agencies perform under major challenges characterized by large number of documents and payments; time-consuming processes; lack of adequate facilities, equipment, and manpower at the required level; and above all lack of coordination among the sector players. The time required to deliver cargo at inland destinations include procedures of releasing cargo at seaport, inland haulage and clearance at inland customs appear minimal on paper, but the process actually takes longer time due to complex customs procedures and related systems.

2.11.3 Poor Quality and Low Competence of Logistics Service Providers

One of the main challenges for different government organizations engaged in regulating the logistics sector is lack of institutional capacity to lead the sector based on knowledge and skills. In addition, the private logistics service providing companies including port and terminal operators have also challenges of shortage of appropriate qualified professionals. In this regard, integrated operations are required between customs clearing agents, freight forwarders, ship agents, transitors and ship agents in Djibouti. Though different institutions are providing training and qualification programs, these programs are disintegrated and incompatible with the required trade logistics performance of the country. This has hindered the ability of various supervising organizations from achieving the desired results at a satisfactory level. The intermittent and inconsistent training provided for customs clearing agents has been one of the main reasons for an acute shortage of professionals. This has created opportunities for fewer customs clearing agents to operate at higher service charges (quoted by MAA, 2018).

2.11.4 Logistics Infrastructure Deficit and Management Problem

For effective and efficient logistics system requires adequate infrastructure development. In this regard, earlier diagnosis reports showed several gaps and shortcomings related to: transport supply and management problem, road condition, status of logistics centers, port facilities, stuffing materials, port handling equipment, & the use of modern information technology and related infrastructures.

2.11.6 Logistics Service Providers & Regulators gaps on Institutionalization & capacity

Logistics service providers and various government organizations engaged in regulation and controlling have institutional organization and capacity shortcomings in leading the sector with the relevant knowledge and skills. There is no also legal basis for horizontal coordination and effective integration among logistics institutions. The shortage of qualified logistics professionals in the private and government sectors, and domestic and seaport logistics service providers has been identified as one of the quagmires in the logistics sector.

2.12. Chapter summary

The review of literature has revealed challenges facing by LLCs in general and Ethiopia as an LLC in particular. Subsequently, literature on dry ports demonstrated different types and functions of dry ports, and examples of established dry ports were analyzed. In addition, argue on the assessment of Ethiopian's logistics industry performance based on global institution reports. The researcher learned from the literature that trade facilitation aims to improve efficiency by improving clearance systems and transaction costs.

Dry ports expand this notion by reducing truck distances, transport costs, improving overland logistics and providing a spectrum of benefits for different stakeholders. The analysis of existing dry ports revealed transshipment and customs clearance as two important functions of dry ports.

2.13. Conceptual Frame Work of the study

Dependent variable of the study is Mojo port and terminal development. Independent variables are Terminal Development, volume of containers port machinery, trucks, skilled manpower, operational process, office facilities, safety and security

The conceptual Frame of the study is outlined here under.

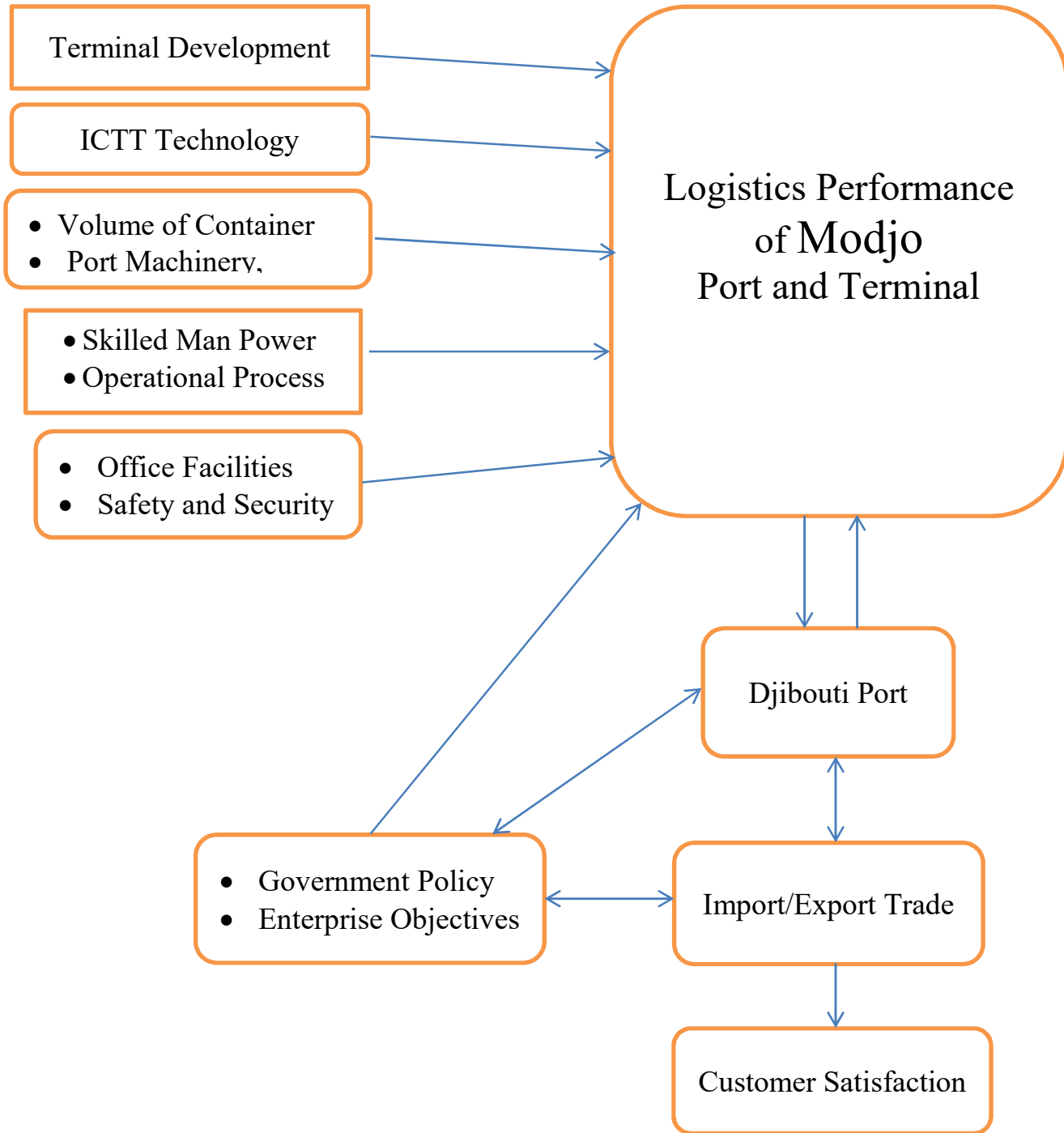


Figure 2.1 Conceptual Frame Work of the Research Study

CHAPTER THREE

RESEARCH METHODOLOGY

3. Method and Data Collection Instrument

3.1. Description of the study Area

The research study conducted on the Mojo Inland port and Terminals Branch office of the enterprise that located 73Km east of the Addis Ababa, and where 80% of the Import/Export cargos, having origin or destination, dry port terminal service and customs duties finalized.

3.2. Research Approach

The study applies mixed research approach since the researcher analyzed both qualitative and quantitative data.

3.3. Research Design

The research design can be consider as the road map of a research that depicts the ways how the study going to be conducted. It displays how the major parts of the research are executed step by step based on the research purpose. This study utilized cross-sectional research design, & mixed research approach (qualitative and quantitative data), and survey method research design to do the research.

3.4. Population and Sample of the research study

The target population of the study was 225 permanent employees of Mojo Inland port and terminal of the enterprise. The study employed stratified and purposive sampling methods based on research objectives.

To determine sample size of the study, the researcher applied the following Slovin's sampling size determination formula.

Solovin's Formula..... No. of Sample= $N / (1+N (e)^2)$

Where No is sample size of the study, N is population of the study, e^2 is confidence interval

No. of sample is = $225 / (1+225(0.05)^2) = 144$ (i.e. Margins of error 5%) at 95% confidence level.

3.5. Data Source and Types

The Data's were collected from both primary and secondary sources using questionnaire, structured interview and written documents related to the research. The respondent categories for primary source were the enterprise Port and terminal service sector staff members specifically working in Modjo Inland port & terminal branch office of the Enterprise.

The researcher used both primary and secondary types of data. The primary data collection made through questionnaire and structured interview with the enterprise Port and terminal service sector staff members specifically working in Modjo Inland port and terminal branch office of the Enterprise.

The researcher used secondary data derived from books, reports, journals, articles, conference papers, business reports and other secondary data source. The Secondary data are crucial for validity and reliability of the research studies beside their advantage of being less cost & minimum effort requirement.

3.6. Ethical Consideration

According to Belmont Report (1974) the three basic ethical principles relevant to research involving human subjects, Respects for persons, Beneficence and Justice. Accordingly, in this research, the researcher adheres to all the ethical & legal issue & handles it professionally. Things such as confidentiality, respect of the respondents right to participate or quite the research at any point is protected.

3.7. Data Analysis

The data analysis is done based on the nature of the data gathered through discussion for qualitative information and with questionnaire for quantitative data. Finally, collected quantitative data were interpreted by using SPSS (20 version) statistical tools; tables, graphs used to simplify the information.

❖ Variables of the study

- **Terminal Development;** it includes Size of the Port and terminal premises, Port and terminal Infrastructure, availability of storage capacity and access to port premises in the port and terminal for pick-up and delivery (gate congestion), connectivity to road network and quality of IT infrastructure and internet service.
- **Volume of Containers;** it includes the volume of import/export cargo containers used to staffing/unstaffing different types of cargos,

- **Port Machinery;** it includes those port machineries such as reach stackers, forklifts cargo lifting equipment etc. that used to move cargos from/to heavy duty cargo trucks and trailers in the port and terminals.
- **Trucks;** it includes heavy duty high/low bed tracks used to transport import/export cargos from-to port of Djibouti or Inland port and terminals.
- **Skilled Manpower;** it includes those professional employees of the Modjo inland port and terminal who fulfill required competency for the port and terminal job specification.
- **Operational Process;** it includes effective and efficient import/export cargo delivery port terminal operational process, , speed of customs procedures, transparency of charges and customs clearance procedure and provision of adequate, on-time information for customers.
- **Office Facilities;** includes availability of office furniture and fixture, conducive working condition and/or environment
- **Safety and Security;** it includes provision of adequate protection for cargoes from damage, wastage and thefts in the port and terminal or while transporting from to port of Djibouti.

3.8. Reliability of Data Analysis

The reliability of data analysis of the study is indicated in below table.

Reliability Statistics	
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items
0.917794969	0.913278908

CHAPTER FOUR

4. DATA ANALYSIS AND PRESENTATION

In this section data that were collected using questionnaires, interview and document review are presented. The data were vital to assess the contribution of inland port and terminal for logistics flows of Ethiopia, discuss the practice of port and terminal management at Modjo Port and Terminal Branch of ESLSE as well as identify key challenges of the sector under study.

4.1. Demographic Characteristics of the Respondents

The researcher distributes 144 questionnaires for sampled employees, however only 141 sample employees returned the questionnaires. Accordingly 97.92% achieved; based on this the reliability statistics is 0.9178 Cronbach's Alpha.

4.1.1. Sex-Age Composition of the Respondents

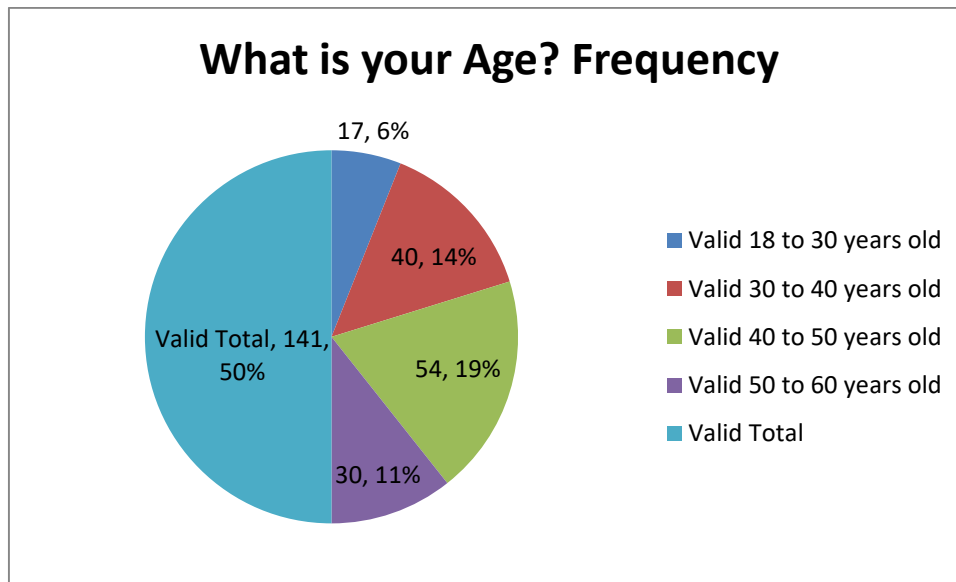
The respondents for this research are those who employed in the Modjo Branch office of the Enterprise on permanent base. In order to be more representative, 141 employees were selected randomly. The research includes both male and female workers responses’.

Table 4.1.1 Sex composition of the Respondents

What is your gender?					
	Description	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	86	61	61	61
	Female	55	39	39	100
	Total	141	100	100	

As shown in the above table 4.1.2 majority of the respondents (61%) were male, while the rest (39%) were female.

Graph 4.1.2 Age composition of the Respondents

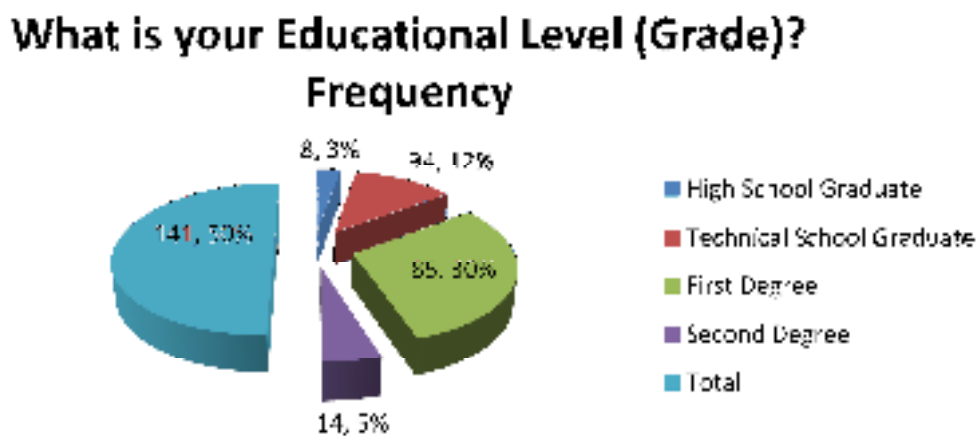


From the above graph 4.1, it could be stated that the age of 38.3% of the respondents were between 40 – 50 years, the percentage of those respondents whose age found between 18-30 years was 12.1%, the percentage of those respondents whose age found between 30-40 years was 28.4%, and the percentage of those respondents whose age found between 50-60 years was 21.3%. From the above data it could be stated that 78.7% of the Modjo port and terminal branch office of the Enterprise workers are young and adult people.

4.1.3. Educational Level of the Respondents

The research considers that country origin of the respondents as one of an important factor in the management and service provision of the Modjo Branch office of the Enterprise. Based on this, questions were presented for respondents to state their educational level.

Graph 4.2 Educational levels of the Respondents



As indicated in the above graph 4.2 educational level of the majority of respondents is first degree i.e. 60.3%, 24.1% of the respondents said that their educational level is technical school graduate (diploma level), 9.9% of the respondents said that their educational level is second degree, while the rest 5.7% are high school graduate. From the above data it could be stated that majority (i.e. 90%) of the Modjo Branch office of the Enterprise workers' educational level are above high school graduate.

4.1.3. Work Experience of the Respondents

The research also takes into accounts that work experience of respondents as an important factor to evaluate the port and terminal operational performance. Based on this, question was presented for respondents to state their work experience at Modjo Branch office of the Enterprise.

Table 4.2 Work Experience of the Respondents

What is your work experience i.e. service year in the Enterprise?					
	Description	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 5 years	48	34	34	34
	From 5 to 10 years	23	16.3	16.3	50.4
	From 11 to 15 years	30	21.3	21.3	71.6
	Above 15 years	40	28.4	28.4	100
	Total	141	100	100	

As indicated in the above table 4.2, the majority respondents-workers- (i.e. 34.0%) work from below 5 years, some respondents stated that (i.e. 28.4%) above 15 years, 21.3% of respondents stated that they work for 11 to 15 years, 16.3%of respondents said that they work in the Modjo Branch office of the Enterprise from 5 to 10 years. From the above data it could be stated that the majority respondents are senior staffs.

4.1.4. Respondents' job position –responsibility in the Enterprise

The research considers that job position –responsibility- of the respondents as one of an important factor to analyze the effect of inland port and terminal development such as Modjo Branch office of the Enterprise to the economic growth of the country. Based on this, question was presented for respondents to state their job position.

Table 4.3 Job position-responsibility- of the Respondents

What is your Position/Responsibility in the Enterprise?					
	Description	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Coordinator/Manager	14	9.9	9.9	9.9
	Supervisor	35	24.8	24.8	34.8
	Officer	92	65.2	65.2	100
	Total	141	100	100	

As shown in the above table 4.3, it could be stated that majority of the respondents' (i.e. 65.2%) job position is officer position. From similar table, it could be stated that 24.8% of respondents job position is supervisory, 9.9%of respondents job position is coordinator/manager. From the above data it could be stated that the majority respondents i.e. workers of the Modjo Branch office of the Enterprise are officers (professional level) and supervisory (administrative level).

4.2. Respondents attitude on the contribution of inland port and terminal toward logistics flows of the country

4.2.1. About the significance of inland port and terminal development

❖ The role of inland port and terminal to Ethiopia

As indicated in the following Graph 4.3 & table 4.4 below, based on the respondents' opinions the majority respondents (62.4%) claimed that inland port and terminal serves as means of saving foreign currency of the country (that is 33.3% of the respondents strongly agree and 29.1% of the respondents agree); while 37.6% of the respondents disapproved that the establishment of inland port and terminal serves as means of saving foreign currency of the country. From this similar graph & table, the study also assessed that whether or not the establishment of inland port and terminal help the facilitation of import/export trade of the country. Based on the respondents' opinions the majority respondents (84.4%) claimed that the establishment of inland port and terminal help the facilitation of import/export trade of the country (i.e. 43.3% of the respondents strongly agree and 41.1% of the respondents agree); but some 15.6% disclaimed that the role of trade facilitation of inland port. From the above data we can said that employees have same awareness as the Inland port & terminal serves as means of saving foreign currency of the country, See annex 2.

Graph 4.3- It serves as means of saving foreign currency of the country

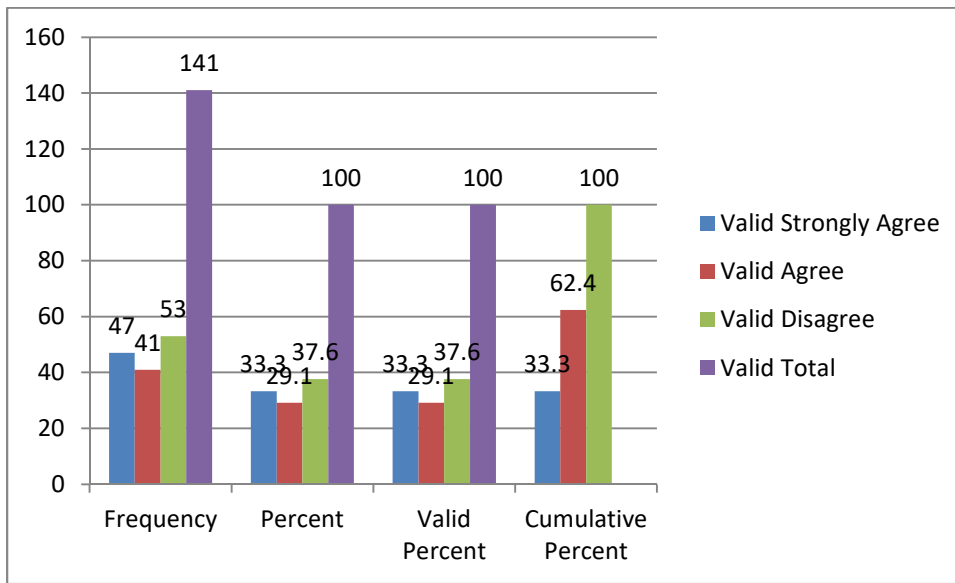


Table 4.4 Respondents' attitude towards contribution of inland port and terminal

It provides import/export trade facilitation					
	Description	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	61	43.3	43.3	43.3
	Agree	58	41.1	41.1	84.4
	Disagree	22	15.6	15.6	100
	Mean = 1.72				
	S.D = 0.718				
	Total		141	100	100
Improve import/export cargo safety and security					
	Description	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	43	30.5	30.5	30.5
	Agree	82	58.2	58.2	88.7
	Disagree	16	11.3	11.3	100
	Mean = 1.81				
	S.D = 0.620				
	Total		141	100	100

From the above similar graph 4.3 & table 4.4, the study also assessed that whether or not the establishment of inland port and terminal help to improve the safety and security of import/export cargo of the country. Based on the respondents' opinions the majority respondents (88.7%) ascertained that the establishment of inland port and terminal help to improve safety and security of import/export cargo flows of the country (i.e. 30.5% of the respondents strongly agree and 58.2% of the respondents agree); but some 11.3% disclaimed that the inland port hardly improve the safety flows of country trade.

❖ Cargo handling capacity, Dwelling time at Djibouti Port

As shown in the following table 4.5 below, based on the respondents' opinions the majority respondents (60.3%) claimed that inland port and terminal enable to increase cargo handling capacity of the country (that is 26.2% of the respondents strongly agree and 34% of the respondents agree); while 39.7% of the respondents disapproved that the capability to increase cargo handling because of inland port and terminal.

From this similar table 4.5, the study also assessed that whether or not the establishment of inland port and terminal help the facilitation of import/export cargo customs clearance process. Based on respondents' opinions the majority respondents (77.3%) claimed that the establishment of inland port and terminal help the facilitation of import/export cargo customs clearance process of the country (i.e. 31.2% of the respondents strongly agree and 46.1% of the respondents agree); but some 27.7% disclaimed that the role of inland port in customs clearance process.

Table 4.5 Respondents' attitude toward inland port and terminal

Frequency Table					
Increase Cargo Handling Capacity					
	Description	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	37	26.2	26.2	26.2
	Agree	48	34.1	34.1	60.3
	Disagree	25	17.7	17.7	78
	Strongly Disagree	31	22	22	100
	Mean = 2.35				
	S.D = 1.096				
	Total		141	100	100
Facilitate Cargo Custom Clearance Process					
Valid	Description	Frequency	Percent	Valid Percent	Cumulative Percent

	Strongly Agree	44	31.2	31.2	31.2
	Agree	65	46.1	46.1	77.3
	Disagree	32	22.7	22.7	100
	Mean = 1.91				
	S.D = 0.732				
	Total	141	100	100	100
Reduce Import/Export Cargo Dwelling Time at Port of Djibouti					
Valid	Description	Frequency	Percent	Valid Percent	Cumulative Percent
	Strongly Agree	20	14.2	14.2	14.2
	Agree	82	58.1	58.1	72.3
	Disagree	39	27.7	27.7	100
	Mean = 2.13				
	S.D = 0.635				
	Total	141	100	100	100

As indicated in the following table 4.6 above, based on the respondents' opinions the majority respondents (72.3%) claimed that inland port and terminal enable to reduce import/export cargo dwelling time at Djibouti Port (that is 14.2% of the respondents strongly agree and 58.1% of the respondents agree); while 27.7% of the respondents disapproved that the inland port and terminal might brought reduction of dwelling time.

❖ Djibouti port congestion, maritime cost condition

As shown in the following table 4.8 below, the study also assessed that whether or not the establishment of inland port and terminal enable to minimize Djibouti Port containers/cargoes congestion. Based on respondents' opinions the majority respondents (61.7%) claimed that the establishment of inland port and terminal help enable to minimize Djibouti Port containers/cargoes congestion (i.e. 20.6% of the respondents strongly agree and 41.1% of the respondents agree); but some 38.3% disclaimed the fact that the establishment of inland port in the country minimize the existence of cargoes congestion at Djibouti Port.

From this similar table 4.8 below, based on the respondents' opinions the majority respondents (61.7%) claimed that inland port and terminal minimize maritime transportation cost (that is 20.6% of the respondents strongly agree and 41.1% of the respondents agree); while 38.3% of the respondents stated on that inland port and terminal couldn't minimize cost of transportation.

Table 4.6 Respondents' attitude toward minimization of Djibouti Port congestion

Frequency Table					
Minimize Djibouti Port Congestion					
Valid	Description	Frequency	Percent	Valid Percent	Cumulative Percent
	Strongly Agree	29	20.6	20.6	20.6
	Agree	58	41.1	41.1	61.7
	Disagree	23	16.3	16.3	78
	Strongly Disagree	31	22	22	100
	Mean = 2.40				
	S.D = 1.048				
	Total	141	100	100	
Minimize Maritime Transportation Cost					
Valid	Description	Frequency	Percent	Valid Percent	Cumulative Percent
	Strongly Agree	26	18.4	18.4	18.4
	Agree	55	39	39	57.4
	Disagree	29	20.6	20.6	78
	Strongly Disagree	31	22	22	100
	Mean = 2.46				
	S.D = 1.032				
	Total	141	100	100	

4.3. About Modjo dry port and terminal its space and capacity

❖ Modjo dry port and terminal size and capacity

As shown in the following graph 4.4 & table 4.7 below, the study also assessed that whether or not the establishment of Modjo dry port and terminal the size of the terminal is capable to handle the arrived/departed container (container space relationship). Based on respondents' opinions the majority respondents (89.6%) claimed that the establishment of Modjo dry inland port and terminal has adequate size (space) to handle containers/cargoes (i.e. 28.4% of the respondents strongly agree and 54.6% of the respondents agree); but some 17% disclaimed that the available space size is limited. From this similar table 4.9 below, based on the respondents' opinions the

majority respondents (59.6%) claimed that the establishment of Modjo inland port and terminal make possible to minimize container demurrage payment (that is 33.3% of the respondents strongly agree and 26.2% of the respondents agree); while 40.4% of the respondents disagree on that dry port and terminal could minimize demurrage cost.

Graph 4.4 Respondents 'attitude toward Modjo dry port capacity, demurrage cost

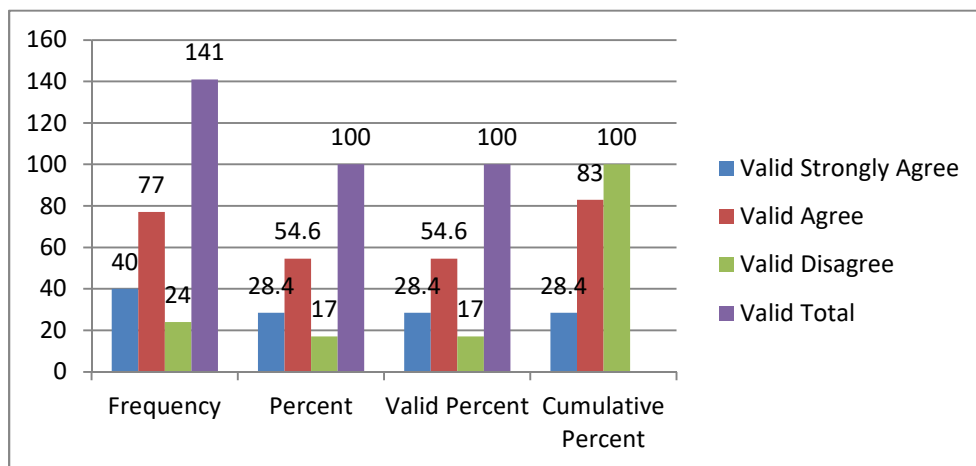


Table 4.7 Respondents 'attitude toward Modjo dry port capacity, demurrage cost

Frequency Table					
Minimize Container demurrage payment					
	Description	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	47	33.3	33.3	33.3
	Agree	37	26.2	26.2	59.6
	Disagree	57	40.4	40.4	100
	Mean = 2.07				
	S.D = 0.859				
	Total	141	100	100	

❖ Placement of containers/cargoes at the terminal area

As shown in the following table 4.10 below, the study also assessed that whether or not the placement of containers/cargoes used systematic approach at Modjo Port and Terminal. Based on respondents' opinions the majority respondents (76.6%) claimed that containers/cargoes placed systematically i.e. whether it get in/ get out from the terminal (i.e. 57.4% of the respondents strongly agree and 19.1% of the respondents agree); but some 23.4% disclaimed that the existing container/cargoes placement as random.

From this similar table 4.8 below, based on the respondents' opinions the most of the respondents (49.6%) claimed that the establishment of inland port and terminal reduce prolonged dwell time at

Djibouti Port (that is 11.3% of the respondents strongly agree and 38.3% of the respondents agree); while the majority 50.4% of the respondents stated that Modjo dry port and terminal couldn't reduce prolonged dwell time at Djibouti Port.

Table 4.8 Respondents' attitude toward placement of container at Modjo Terminal

Frequency Table						
Reduce prolonged dwell time at Djibouti port						
	Description	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	Strongly Agree	16	11.3	11.3	11.3	
	Agree	54	38.3	38.3	49.6	
	Disagree	71	50.4	50.4	100	
	Mean = 2.39					
	S.D = 0.684					
	Total	141	100	100	100	
	Containers are placed in systematic approach at the terminal area					
	Description	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	Strongly Agree	81	57.4	57.4	57.4	
	Agree	27	19.2	19.2	76.6	
	Disagree	33	23.4	23.4	100	
	Mean = 1.66					
	S.D = 0.835					
	Total	141	100	100	100	

❖ Consolidated full/empty container storage

As shown in the following table 4.9 below, the study also assessed that whether or not the establishment of inland port and terminal enable to consolidated full/empty container storage. Based on respondents' opinions the majority respondents (76.6%) claimed that the establishment of inland port and terminal help enable to consolidated full/empty container storage. (i.e. 42.6% of the respondents strongly agree and 34% of the respondents agree); but some 23.4% disclaimed the fact that inland port has role to consolidated full/empty container storage.

From this similar table 4.9 below, based on the respondents' opinions the majority respondents (76.6%) claimed that inland port and terminal facilitate container staffing/un staffing activities (that is 42.6% of the respondents strongly agree and 34% of the respondents agree); while 23.4% of the respondents disagree on the facilitation of inland port and terminal.

Table 4.9 Respondents' attitude toward container facilitation of inland port and terminal

Frequency Table					
Consolidated Full/Empty Container Storage					
Valid	Description	Frequency	Percent	Valid Percent	Cumulative Percent
	Strongly Agree	60	42.6	42.6	42.6
	Agree	48	34	34	76.6
	Disagree	33	23.4	23.4	100
	Mean = 1.81				
	S.D = 0.792				
	Total	141	100	100	
Container Staffing/unstaffing Facilitation					
Valid	Description	Frequency	Percent	Valid Percent	Cumulative Percent
	Strongly Agree	60	42.6	42.6	42.6
	Agree	48	34	34	76.6
	Disagree	33	23.4	23.4	100
	Mean = 1.81				
	S.D = 0.792				
	Total	141	100	100	

4.4. About the availability of Port Machinery, and heavy duty truck

❖ Sufficient numbers of port machinery

The study has assessed whether various, adequate number of port machineries (equipment's) and heavy duty trucks available at Modjo dry port and terminal which enable to facilitate the stuffing/un staffing operational activities. As indicated in table 4.10 below, the majority respondents (71.63%) claimed that the availability of various and adequate number of port machineries (i.e. 52.48% of the respondents strongly agree and 19.15% of the respondents agree); but some 28.47% stated that the existing port equipment's are inadequate.

From this similar table 4.10 below, the majority respondents (66.67%) claimed that the loading/unloading capacity of the port machineries/equipment's meeting the standard measurement (that is 35.46% of the respondents strongly agree and 31.21% of the respondents

agree); while 33.33% of the respondents confirmed that the existing port machineries work below standard.

Table 4.10 Respondents' attitude toward port machinery functionality

Frequency Table						
Sufficient Numbers of Port Machinery are Available as Required						
	Description	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	Strongly Agree	74	52.48	52.48	52.48	
	Agree	27	19.15	19.15	71.63	
	Disagree	40	28.37	28.37	100	
	Mean = 1.76					
	S.D = 0.869					
	Total		141	100	100	
	The Loading/unloading Capacity of the Port Machineries meeting the Standardization					
	Description	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	Strongly Agree	50	35.46	35.46	35.46	
	Agree	44	31.21	31.21	66.67	
	Disagree	47	33.33	33.33	100	
	Mean = 1.98					
	S.D = 0.832					
	Total		141	100	100	

❖ **Sufficient numbers of heavy duty trucks**

As indicated in table 4.11 below, the majority respondents (56.74%) claimed that the availability of adequate number of heavy duty trucks (i.e. 21.28% of the respondents strongly agree and 35.46% of the respondents agree); but some 43.26% stated that the existing vehicles are inadequate. From this similar table 4.11 below, the majority respondents (43.26%) claimed that the idle time and down time of the port machineries/equipment's are minimal i.e. working in standard condition (that is 14.18% of the respondents strongly agree and 29.08% of the respondents agree); while the majority (56.74% of the respondents) confirmed that there is idle time and down time that is port machineries work below standard.

Table 4.11 Respondents' attitude toward availability of trucks

Frequency Table					
The Idle and Down Time of the Port Machineries is Minimal					
Valid	Description	Frequency	Percent	Valid Percent	Cumulative Percent
	Strongly Agree	20	14.18	14.18	14.18
	Agree	41	29.08	29.08	43.26
	Disagree	73	51.77	51.77	95.04
	Strongly Disagree	7	4.96	4.96	100
	Mean = 2.48				
	S.D = 0.798				
	Total	141	100	100	
Adequate Cargo Loading Truck Availability					
Valid	Description	Frequency	Percent	Valid Percent	Cumulative Percent
	Strongly Agree	30	21.28	21.28	21.28
	Agree	50	35.46	35.46	56.74
	Disagree	54	38.3	38.3	95.04
	Strongly Disagree	7	4.96	4.96	100
	Mean = 2.27				
	S.D = 0.853				
	Total	141	100	100	

❖ Functionality of Trucks and workshops

The researcher also has assessed the functionality of trucks and maintenance workshops. As indicated in table 4.12 below, some respondents (39.01%) claimed that the breaking/ defunct ion down time of the cargo trucks is minimal (i.e. 10.64% of the respondents strongly agree and 28.37% of the respondents agree); but majority 60.99% respondents stated that breaking/ defunct ion down time of the cargo trucks as maximum.

From this similar table 4.12 below, most of respondents (46.10%) claimed that the Port machinery/trucks repair and maintenance service provided by own (in-house garage); while the

majority (53.90% of the respondents) disapproved that the functionality of workshops in providing good maintenance service.

Table 4.12 Respondents' attitude toward functionality of trucks and workshop

Frequency Table						
Breaking/ Defunction Down Time of the Cargo Trucks is minimal						
	Description	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	Strongly Agree	15	10.64	10.64	10.64	
	Agree	40	28.37	28.37	39.01	
	Disagree	38	26.95	26.95	65.96	
	Strongly Disagree	48	34.04	34.04	100	
	Mean=2.84					
	S.D=1.016					
	Total		141	100	100	
Port Machinery/Trucks Repair and Maintenance Service provided by own (in-house garage)						
	Description	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	Agree	65	46.1	46.1	46.1	
	Disagree	28	19.86	19.86	65.96	
	Strongly Disagree	48	34.04	34.04	100	
	Mean=2.88					
	S.D=0.890					
	Total		141	100	100	

4.5 About Skilled Manpower Performance at Modjo Branch Office

As shown in the following graph 4.5 & table 4.13 below, the study also assessed that whether or not the Modjo dry port and terminal has fulfilled the required manpower to carry on its day to day operation. Based on some respondents' opinions (39%) there are adequate skilled manpower at Modjo port and terminal; but the majority respondents (61%) confirmed that skilled manpower has not fulfilled as required. Similarly some respondents (43.97%) claimed that employees are dedicated to their job; while the majority (56.03%) respondents stated that employees' dedication as low. As indicated in graph 4.5 & table 4.13 below, based on the majority (53.19%) some respondents' opinions performance level of employees' stated as high, while some (46.81%) respondents stated that employees' performance level as low.

Graph 4.5 Respondents' attitude toward manpower requirement, and performance level

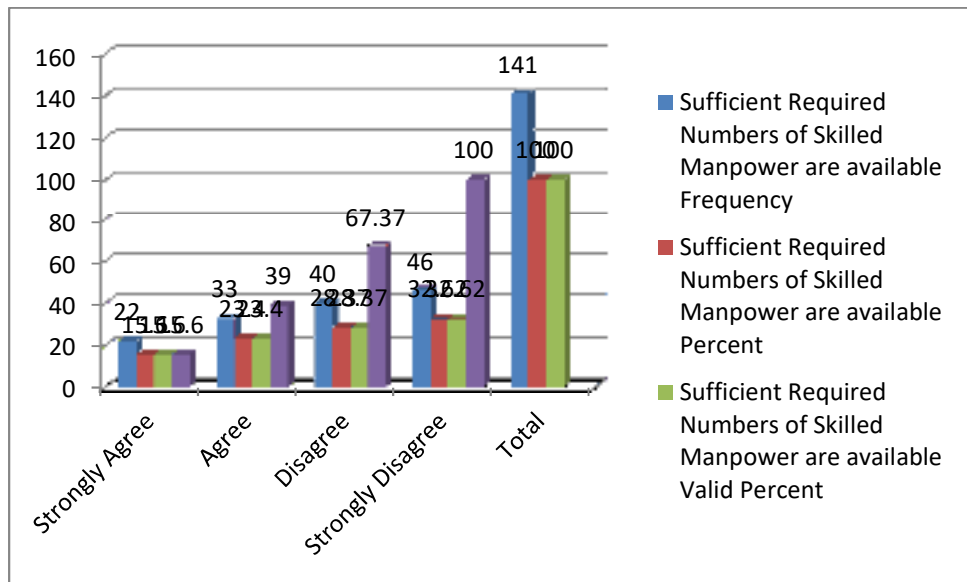


Table 4.13 Respondents' attitude toward manpower requirement, and performance level

Frequency Table						
The Staff Members are Dedicated to their Jobs						
	Description	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	Strongly Agree	15	10.64	10.64	10.64	
	Agree	47	33.33	33.33	43.97	
	Disagree	25	17.73	17.73	61.7	
	Strongly Disagree	54	38.3	38.3	100	
	Mean= 2.84					
	S.D= 1.060					
	Total		141	100	100	
Level of performance ability of the Employee is High						
	Description	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	Strongly Agree	5	3.55	3.55	3.55	
	Agree	70	49.65	49.65	53.19	
	Disagree	51	36.17	36.17	89.36	
	Strongly Disagree	15	10.64	10.64	100	
	Mean= 2.54					
	S.D= 0.732					
	Total		141	100	100	

4.6. About Modjo Dry Port Service Delivery -Operational Process

❖ Effectiveness of the port and terminal service provision

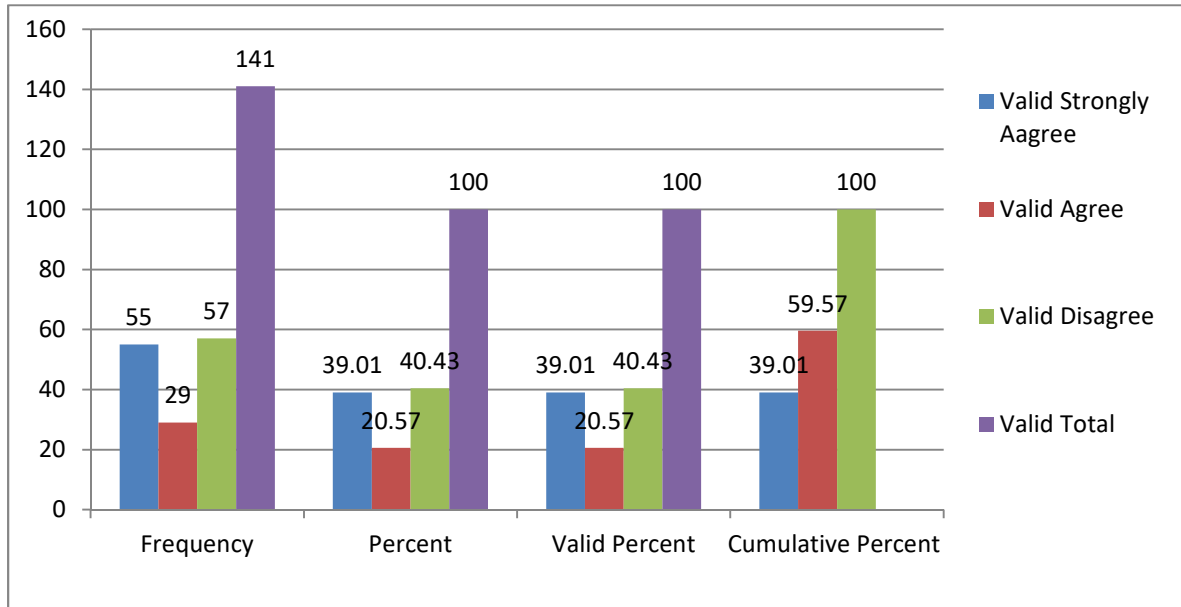
As shown in the following table 4.14 & graph 4.5 below, the study also assessed that whether or not the Modjo dry port and terminal provide effective port and terminal service to its customers on its day to day operation. Based on some respondents' opinions, some respondents stated that (29.08%) Modjo dry port and terminal provide effective port and terminal service to its customers; but the majority respondents (70.92%) confirmed that dry port service provision as ineffective. Similarly some respondents (31.21%) claimed that port service delivered timely; while the majority (68.79%) respondents disagreed on the fact prevalence of timely service provision. As indicated in table 4.14 & graph 4.5 below, based on the majority (59.57%) respondents' opinions dry port and terminal has advantage by reducing operational cost to customer, while some (40.43%) respondents disagreed on this premise.

Table 4.14 Respondents' attitude toward Modjo port and terminal service provision

Frequency Table					
Effectiveness of the Port and Terminal Service Provision					
Valid	Description	Frequency	Percent	Valid Percent	Cumulative percent
	Strongly Agree	3	2.13	2.13	2.13
	Agree	38	26.95	26.95	29.08
	Disagree	62	43.97	43.97	73.05
	Strongly Disagree	38	26.95	26.95	100
	Mean= 3.12				
	S.D= 0.741				
	Total	141	100	100	
Timely service provision					
Valid	Description	Frequency	Percent	Valid Percent	Cumulative percent
	Strongly Agree	3	2.13	2.13	2.13
	Agree	41	29.08	29.08	31.21
	Disagree	45	31.91	31.91	63.12
	Strongly Disagree	52	36.88	36.88	100
	Mean= 3.22				
	S.D= 0.803				
	Total	141	100	100	

Graph 4.6 Respondents' attitude toward Modjo port and terminal service provision

Reduction of operational Cost



❖ **Integration of dry port**

As shown in the following table 4.15 below, the study also assessed that whether or not the inland port and terminal integrated by network. Based on respondents' opinions the majority respondents (68.09%) claimed that inland port and terminal integrated by network (i.e. 62.41% of the respondents strongly agree and 5.67% of the respondents agree); but some 31.91% disclaimed the existence of integrated work at Modjo dry port and terminal.

From this similar table 4.15 below, based on the respondents' opinions the majority respondents (68.09%) claimed that Modjo port and terminal has done its activities with customs authority during cargoes clearance processes (that is 57.45% of the respondents strongly agree and 10.64% of the respondents agree); while 31.91% of the respondents disagreed on this premise.

Table 4.15 Respondents' attitude toward integration of dry port operation

Frequency Table					
Integration with internal functions through networks					
Valid	Description	Frequency	Percent	Valid Percent	Cumulative Percent
	Strongly Agree	88	62.41	62.41	62.41
	Agree	8	5.67	5.67	68.09
	Disagree	45	31.91	31.91	100
	Mean= 1.70				
	S.D= 0.925				
	Total	141	100	100	
	Extent of interaction between custom clearance processes				
Valid	Description	Frequency	Percent	Valid Percent	Cumulative Percent
	Strongly Agree	81	57.45	57.45	57.45
	Agree	15	10.64	10.64	68.09
	Disagree	45	31.91	31.91	100
	Mean= 1.74				
	S.D= 0.913				
	Total	141	100	100	

4.7. About Office Facilities of Modjo Dry Port

As shown in the following table 4.16 below, the study also assessed that whether or not Modjo dry port and terminal has good working environment. Based on respondents' opinions the majority respondents (59.57%) claimed that working place /building as conducive (i.e. 39.01% of the respondents strongly agree and 20.56% of the respondents agree); but some 40.42% disclaimed the conduciveness of the working place. Similarly the majority respondents 68.09% confirmed that the working environment of the port as conducive, but the rest 31.91% didn't consider it as conducive.

Table 4.16 Respondents' attitude toward working environment of Modjo port and terminal

Frequency					
Conducive Working Place/Building					
Valid	Description	Frequency	Percent	Valid Percent	Cumulative Percent
	Strongly Agree	55	39.0071	39.01	39.01
	Agree	29	20.5674	20.56	59.57
	Disagree	57	40.4255	40.42	100
	Mean= 2.01				
	S.D= 0.894				
	Total	141	100	100	
Conducive Working Environments					
Valid	Description	Frequency	Percent	Valid Percent	Cumulative Percent
	Strongly Agree	64	45.39	45.39	45.39
	Agree	32	22.7	22.7	68.09
	Disagree	45	31.91	31.91	100
	Mean= 1.87				
	S.D= 0.872				
	Total	141	100	100	

4.8. About Modjo Dry Port Safety and Security

As shown in the following table 4.17 below, the study also assessed that whether or not Modjo dry port and terminal has provide good security and safety to customers' cargoes. Based on respondents' opinions the majority respondents (68.09%) claimed that dry port and terminal has provide good security and safety to customers' cargoes (i.e. 57.45% of the respondents strongly agree and 10.64% of the respondents agree); but some 31.91% disclaimed the existence of good security. From this similar table 4.17 below, based on the respondents' opinions the majority respondents (59.57%) claimed that port gate control/inspection of Modjo port and terminal is effectively working (that is 39.01% of the respondents strongly agree and 20.57% of the respondents agree);

Table 4.17 Respondents' attitude toward cargo securing utilities/facilities and port gate

Control/Inspection

Frequency Table						
Cargo Securing Utilities/Facilities						
	Description	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	Strongly Agree	81	57.45	57.45	57.45	
	Agree	15	10.64	10.64	68.09	
	Disagree	45	31.91	31.91	100	
	Mean= 1.74					
	S.D= 0.913					
	Total		141	100	100	
	Port Gate Control/Inspection					
	Description	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	Strongly Agree	55	39.01	39.01	39.01	
	Agree	29	20.57	20.57	59.57	
	Disagree	57	40.43	40.43	100	
	Mean= 2.01					
	S.D= 0.894					
	Total		141	100	100	

4.9. About ICT Technology of Modjo Dry Port

As indicated in the following table 4.18 below, the study also assessed that whether or not Modjo dry port and terminal has utilized information technology application effectively. Based on respondents' opinions the majority respondents (68.09%) claimed that in Modjo dry port and terminal operational activities are integrated with computer network and its level of IT based automated operational process is high (i.e. 62.41% of the respondents strongly agree and 5.67% of the respondents agree); while some respondents (37.59%) stated the available network as low.

From this similar table 4.18 below, based on the respondents' opinions the majority respondents (59.57%) claimed that internet facility availability/access in Modjo port and terminal is good (that is 39.01% of the respondents strongly agree and 20.57% of the respondents agree); while 40.43% of the respondents stated the availability/ access as low.

Table 4.18 Respondents' attitude toward ICT

Frequency Table					
The Level of IT Based Automated Operational Process					
Valid	Description	Frequency	Percent	Valid Percent	Cumulative Percent
	Strongly Agree	88	62.41	62.41	62.41
	Agree	8	5.67	5.67	68.09
	Disagree	45	31.91	31.91	100
	Mean= 1.70				
	S.D= 0.925				
	Total	141	100	100	
Internet Facility Availability/Access					
Valid	Description	Frequency	Percent	Valid Percent	Cumulative Percive
	Strongly Agree	55	39.01	39.01	39.01
	Agree	29	20.57	20.57	59.57
	Disagree	57	40.43	40.43	100
	Mean= 2.01				
	S.D= 0.894				
	Total	141	100	100	

CHAPTER FIVE

5. SUMMARY OF FINDING, CONCLUSION AND RECOMMENDATION

5.1. Summary of the Research finding

5.1.1. Demographic and Educational backgrounds of the respondents

- From the data it has been learned that the demographic characteristics of the respondents found that majority of the respondents were male, while the rest were female. From similar table, it could be stated that the age of 38.3% of the respondents were between 40 – 50 years, the percentage of those respondents whose age found between 18 - 30 years was 12.1%, the percentage of those respondents whose age found between 30-40 years was 28.4%, and the percentage of those respondents whose age found between 50-60 years was 21.3%. From the above data it could be stated that most of the Modjo Branch office of the Enterprise workers i.e. 78.7% are young and adult people.
- The 60.3% of the respondents educational level is first degree , 24.1% of the respondents said that their educational level is technical school graduate (diploma level), 9.9% of the respondents said that their educational level is second degree, while the rest 5.7% are high school graduate. From the above data it could be stated that 90% of the Modjo Branch office of the Enterprise workers' educational level are above high school graduate.
- The working experience of respondents found that 34.0% of respondents working experience is below 5 years, 16.3% of the respondents said that they work in the Modjo Branch office of the Enterprise from 5 to 10 years, 28.4% of the respondents working experience is above 15 years, 21.3% of respondents indicated that they work for 11 to 15 years,. From the above data it could be stated that the majority respondents are senior staffs. Furthermore 65.2% of the respondents' job position is officer position. Similarly, it could be stated that 24.8% of respondent's job position is supervisory, and 9.9% of the respondent's job position is coordinator/manager. From the above data it could be stated that the majority respondent workers of the Modjo Branch office of the Enterprise are officers (professional level) and supervisory (administrative level).

5.1.2. The role of inland port and terminal to Ethiopia

- Based on the respondents' opinions, 62.4% of the v respondents claimed that inland port and terminal serves as means of saving foreign currency of the country (that is 33.3% of the respondents strongly agree and 29.1% of the respondents agree); while 37.6% of the respondents disapproved that the establishment of inland port and terminal serves as means of saving foreign currency of the country. The study made an assessment on whether or not the

establishment of inland port and terminal help the facilitation of import/export trade of the country. Based on the respondents' opinions, 84.4% of the respondents claimed that the establishment of inland port and terminal help the facilitation of import/export trade of the country (i.e. 43.3% of the respondents strongly agree and 41.1% of the respondents agree); while 15.6% of the respondents disclaimed that the role of trade facilitation of inland port. The study also assessed that whether or not the establishment of inland port and terminal help to improve the safety and security of import/export cargo of the country. Based on the respondents' opinions, 88.7% of the respondents ascertained that the establishment of inland port and terminal help to improve safety and security of import/export cargo flows of the country (i.e. 30.5% of the respondents strongly agree and 58.2% of the respondents agree); whereas 11.3% of respondents disclaimed that the inland port hardly improve the safety flows of country trade.

❖ **Cargo handling capacity, Dwelling time at Djibouti Port**

Based on the respondents' opinions on Cargo handling capacity of Modjo port and terminal, 60.3% of the respondents claimed that inland port and terminal enable to increase cargo handling capacity of the country (that is 26.2% of the respondents strongly agree and 34% of the respondents agree); while 39.7% of the respondents disapproved that the capability to increase cargo handling because of inland port and terminal. The study also assessed that whether or not the establishment of inland port and terminal help the facilitation of import/export cargo customs clearance process. Based on respondents' opinions the 77.3% of the respondents claimed that the establishment of inland port and terminal help the facilitation of import/export cargo customs clearance process of the country (i.e. 31.2% of the respondents strongly agree and 46.1% of the respondents agree); whereas 27.7% of respondents disclaimed that the role of inland port in customs clearance process. As the respondents' opinions the 72.3% of the respondents claimed that inland port and terminal enable to reduce import/export cargo dwelling time at Djibouti Port (that is 14.2% of the respondents strongly agree and 58.1% of the respondents agree); while 27.7% of the respondents disapproved that the inland port and terminal might brought reduction of dwelling time.

❖ **Djibouti port congestion, maritime cost condition**

Based the study assessment on whether or not the establishment of inland port and terminal enable to minimize Djibouti Port containers/cargoes congestion. The 61.7% of the respondents claimed that the establishment of inland port and terminal help enable to minimize Djibouti Port containers/cargoes congestion (i.e. 20.6% of the respondents strongly agree and 41.1% of the respondents agree); but 38.3% of the respondents disclaimed the fact that the establishment of

inland port in the country minimize the existence of cargoes congestion at Djibouti Port. As per the study assessment on maritime transportation cost minimization, 61.7% of the respondent claimed that inland port and terminal minimize maritime transportation cost (that is 20.6% of the respondents strongly agree and 41.1% of the respondents agree); while 38.3% of the respondents stated on that inland port and terminal couldn't minimize cost of transportation.

❖ **Modjo dry port and terminal size and capacity**

As study assessments on whether or not the establishment of Modjo dry port and terminal the size of the terminal is capable to handle the arrived/departed container (container space relationship). 89.6% of the respondents claimed that the establishment of Modjo dry inland port and terminal has adequate size (space) to handle containers/cargoes (i.e. 28.4% of the respondents strongly agree and 54.6% of the respondents agree); while 17% of respondents disclaimed that the available space size is limited. Based on the respondents' opinions on container demurrage payment minimization, 59.6% of the respondents claimed that the establishment of Modjo inland port and terminal make possible to minimize container demurrage payment (that is 33.3% of the respondents strongly agree and 26.2% of the respondents agree); while 40.4% of the respondents disagree on that dry port and terminal could minimize demurrage cost.

❖ **Placement of containers/cargoes at the terminal area**

The study also assessed that whether or not the placement of containers/cargoes used systematic approach at Modjo Port and Terminal. Based on respondents' opinions, 76.6% of the respondents claimed that containers/cargoes placed systematically i.e. whether it get in/ get out from the terminal (i.e. 57.4% of the respondents strongly agree and 19.1% of the respondents agree); whereas 23.4% of respondents disclaimed that the existing container/cargoes placement as random. Based on the respondents' opinions regarding reduction of prolonged dwell time at Djibouti Port, 49.6% of the respondents claimed that the establishment of inland port and terminal reduce prolonged dwell time at Djibouti Port (that is 11.3% of the respondents strongly agree and 38.3% of the respondents agree); while 50.4% of the respondents stated that Modjo dry port and terminal couldn't reduce prolonged dwell time at Djibouti Port.

❖ **Consolidated full/empty container storage**

The assessment of the study on whether or not the establishment of inland port and terminal enable to consolidated full/empty container storage. Based on respondents' opinions, 76.6% of the respondents claimed that the establishment of inland port and terminal help enable to consolidated full/empty container storage. (i.e.42.6% of the respondents strongly agree and 34% of the respondents agree); while 23.4% of respondents disclaimed the fact that inland port has role to

consolidated full/empty container storage. Based on the respondents' opinions, 76.6% of the respondents claimed that inland port and terminal facilitate container staffing/unstaffing activities (that is 42.6% of the respondents strongly agree and 34% of the respondents agree); while 23.4% of the respondents disagree on the facilitation of inland port and terminal.

❖ **Sufficient numbers of port machinery**

The study has assessed whether various, adequate number of port machineries (equipment's) and heavy duty trucks available at Modjo dry port and terminal which enable to facilitate the stuffing/un staffing operational activities. Below, 71.63% of the respondents claimed that the availability of various and adequate number of port machineries (i.e. 52.48% of the respondents strongly agree and 19.15% of the respondents agree); but 28.47% stated that the existing port equipment's are inadequate. From the study 66.67% of the respondents (claimed that the loading/unloading capacity of the port machineries/equipment's meeting the standard measurement (that is 35.46% of the respondents strongly agree and 31.21% of the respondents agree); while 33.33% of the respondents confirmed that the existing port machineries work below standard.

❖ **Sufficient numbers of heavy duty trucks**

Based 56.74% of the respondents (claimed that the availability of adequate number of heavy duty trucks (i.e. 21.28% of the respondents strongly agree and 35.46% of the respondents agree); but 43.26% of respondents stated that the existing vehicles are inadequate. In addition, 43.26% the of respondents claimed that the idle time and down time of the port machineries/equipment's are minimal i.e. working in standard condition (that is 14.18% of the respondents strongly agree and 29.08% of the respondents agree); while 56.74% of the respondents confirmed that there is idle time and down time that is port machineries work below standard.

❖ **Functionality of Trucks and workshops**

The researcher also has assessed the functionality of trucks and maintenance workshops. Accordingly, 39.01% of the respondents claimed that the breaking/ de-function down time of the cargo trucks is minimal (i.e. 10.64% of the respondents strongly agree and 28.37% of the respondents agree); whereas 60.99% of respondents stated that breaking/ de-function down time of the cargo trucks as maximum. According to 46.10% of the respondents claimed that the Port machinery/trucks repair and maintenance service provided by own (in-house garage); while the y 53.90% of the respondents disapproved that the functionality of workshops in providing good maintenance service

5.1.3. About Skilled Manpower Performance at Modjo Branch Office

As the assessment of the study indicate that whether or not the Modjo dry port and terminal has fulfilled the required manpower to carry on its day to day operation. As per 39% of the respondents' opinions there are adequate skilled manpower at Modjo port and terminal; while the 61% of respondents confirmed that skilled manpower has not fulfilled as required. Similarly 43.97% of the respondents claimed that employees are dedicated to their job; while 56.03% of respondents stated that employees' dedication as low. Based on 53.19% of the respondents' opinions performance level of employees' stated as high, while 46.81% respondents stated that employees' performance level as low.

5.1.4. About Modjo Dry Port Service Delivery -Operational Process

❖ Effectiveness of the port and terminal service provision

The study assessed whether or not the Modjo dry port and terminal provide effective port and terminal service to its customers on its day to day operation. Based on 29.08% of the respondents' opinions, stated that Modjo dry port and terminal provides effective port and terminal service to its customers; whereas 70.92% respondents confirmed that dry port service provision as ineffective. Similarly 31.21% of the respondents claimed that port service delivered timely; while 68.79% of respondents disagreed on the fact prevalence of timely service provision. Based on 59.57% of the respondents' opinions dry port and terminal has advantage by reducing operational cost to customer, while 40.43% of respondents disagreed on this premise.

❖ Integration of dry port

Regarding the integration of the dry port the study also assessed that whether or not the inland port and terminal integrated by network. Based on 68.09% of the respondents' opinions, they claimed that inland port and terminal integrated by network (i.e. 62.41% of the respondents strongly agree and 5.67% of the respondents agree); while 31.91% of respondents disclaimed the existence of integrated work at Modjo dry port and terminal. Based on 68.09% of the respondents' opinions the Modjo port and terminal has done its activities with customs authority during cargoes clearance processes (that is 57.45% of the respondents strongly agree and 10.64% of the respondents agree); while 31.91% of the respondents disagreed on this premise.

5.1.5. About Office Facilities of Modjo Dry Port

As per the study assessment on the office facilities whether or not Modjo dry port and terminal has good working environment. Based on respondents' opinions 59.57% of the respondents claimed that working place /building as conducive (i.e. 39.01% of the respondents strongly agree

and 20.56% of the respondents agree); however 40.42% of the respondents disclaimed the conduciveness of the working place. Similarly, 68.09% of the respondents confirmed that the working environment of the port as conducive, while 31.91% of the respondents didn't consider it as conducive. Based on 61.7% of the respondents' opinions the inland port and terminal development minimize maritime transportation cost (that is 20.6% of the respondents strongly agree and 41.1% of the respondents agree); while 38.3% of the respondents disagree on that inland port and terminal couldn't minimize cost of transportation.

5.1.6. About Modjo Dry Port Safety and Security

As the study also assessed, whether or not Modjo dry port and terminal has provide good security and safety to customers' cargoes. Based on 68.09% of the respondents' opinions the inland port and terminal has provide good security and safety to customers' cargoes (i.e. 57.45% of the respondents strongly agree and 10.64% of the respondents agree); whereas 31.91% of the respondents disclaimed the existence of good security. Based on 59.57% of the respondents opinions the inland port and terminal gate control/inspection of Modjo port and terminal is effectively working (that is 39.01% of the respondents strongly agree and 20.57% of the respondents agree); while 40.43% of the respondents disagreed on the effectiveness of port gate control/inspection.

5.1.7. About ICT Technology of Modjo Dry Port

As per the assessment of study, the Modjo dry port and terminal whether or not utilized information technology application effectively. The 68.09% of respondents claimed that in Modjo dry port and terminal operational activities are integrated with computer network and its level of IT based automated operational process is high (i.e. 62.41% of the respondents strongly agree and 5.67% of the respondents agree); while 37.59% of the respondents stated the available network as low. Based on 59.57% of the respondents' opinions the internet facility availability/access in Modjo port and terminal is good (that is 39.01% of the respondents strongly agree and 20.57% of the respondents agree); while 40.43% of the respondents stated the availability/ access as low.

5.2. CONCLUSION

The research starts by introduction of the concept of sea and hinterland ports. Discuss the significance and benefits of dry port for global trade participation and economic growth of a country, then present the challenge of landlocked countries in general and the Ethiopian landlockedness related challenges in particular. Accordingly, the significance of the inland port and terminals located in land locked countries, like Ethiopia, serving as main outlet linkage to the sea ports that serves as an economic tool for minimizing challenges to maritime transport access and promoting economic growth and competitiveness of the country. They play a pivotal role as means of foreign currency expenditure saving, Import/Export trade facilitation, safety and security for its export and import cargo,

5.2.1. The role of inland port and terminal to Ethiopia

- As per the majority respondents, it could be concluded that inland port and terminal is believed that serves as means of saving foreign currency of the country, while some of the respondents disapproved it.
- The establishment of inland port and terminal believed by majority of the respondents helps facilitation of import/export trade of the country. But some disclaimed the role of trade facilitation of inland port.
- The majority respondents conclude that the establishment of inland port and terminal believed to improve the safety and security of import/export cargo of the country while, some of them disclaimed the inland port hardly improvement for the safety flows of country trade.

❖ Cargo handling capacity, Dwelling time at Djibouti Port

- As the majority conclude that the establishment of inland port and terminal enable to increase cargo handling capacity of the country and help the facilitation of import/export cargo customs clearance process import/export cargo customs clearance process of the country .But some disprove the role of the port.
- It could be concluded, as the majority of respondents that the inland port and terminal enable to reduce import/export cargo dwelling time at Djibouti Port; while some few the respondents disapproved that the inland port and terminal might brought reduction of dwelling time.

❖ Djibouti port congestion, maritime cost condition

Based the study assessment on whether or not the establishment of inland port and terminal enable to minimize Djibouti Port containers/cargoes congestion. The majority respondents conclude that the establishment of inland port and terminal help enable to minimize Djibouti Port containers/cargoes congestion; while some disclaimed the fact that the establishment of inland

port in the country minimize the existence of cargoes congestion at Djibouti Port and minimize maritime transportation cost, while others says couldn't minimize cost of transportation.

❖ Modjo dry port and terminal size and capacity

It is concluded by the majority respondents that the establishment of Modjo dry port and terminal the size of the terminal is capable to handle the arrived/departed container (container space relationship).but some disclaimed that the available space size is limited. Based on the majority respondents concluded that the establishment of Modjo inland port and terminal make possible to minimize container demurrage payment; while some respondents disagree on that dry port and terminal could minimize demurrage cost.

❖ Placement of containers/cargoes at the terminal area

As concluded by the majority the placement of containers/cargoes used systematic approach at Modjo Port and Terminal. But some of the respondents disclaimed that the existing container/cargoes placement as random. Some of the respondents' concluded that the establishment of inland port and terminal reduce prolonged dwell time at Djibouti Port; while the majority of the respondents stated that Modjo dry port and terminal couldn't reduce prolonged dwell time at Djibouti Port.

❖ Consolidated full/empty container storage

It could be concluded, as per the majority respondents, that the establishment of inland port and terminal enable to consolidated full/empty container storage; but some disclaimed the fact that inland port has role to consolidated full/empty container storage. As the majority concludes that the inland port and terminal facilitate container staffing/unstaffing activities; while some of the respondents disagree on the facilitation of inland port and terminal.

❖ Sufficient numbers of port machinery

The majority concluded that various, adequate number of port machineries (equipment's) and heavy duty trucks available at Modjo dry port and terminal which enable to facilitate the stuffing/un staffing operational activities; but some stated that the existing port equipment's are inadequate. As the majority respondents concluded that the loading/unloading capacity of the port machineries/equipment's meeting the standard measurement; while some of respondents confirmed that the existing port machineries work below standard.

❖ Sufficient numbers of heavy duty trucks

As conclusion of the majority respondents the availability of adequate number of heavy duty trucks confirmed; but some stated that the existing vehicles are inadequate. In addition, the majority of the respondents confirmed that there is idle time and down time that dictate the port

machineries to work below standard, whereas, most of the respondents conclude that the idle time and down time of the port machineries/equipment is minimal,.

❖ Functionality of Trucks and workshops

As the majority of respondents concluded that breaking/ defunct ion down time of the cargo trucks as maximum, while few claimed that the breaking/ defunct ion down time of the cargo trucks is minimal, According to few respondents conclusion the Port machinery/trucks repair and maintenance service provided by own (in-house garage); while the majority of respondents disapproved that the functionality of own workshops in providing good maintenance service.

5.2.1. About Skilled Manpower Performance at Modjo Branch Office

As the assessment of the study indicate that whether or not the Modjo dry port and terminal has fulfilled the required manpower to carry on its day to day operation. As per some respondents' conclusion there are adequate skilled manpower at Modjo port and terminal; while the majority respondents confirmed that skilled manpower has not fulfilled as required. Similarly some respondents concluded that employees are dedicated to their job; while the majority respondents stated that employees' dedication as low. In addition, based on the majority respondents conclusion the performance level of employees' stated as high, while some of the respondents stated that employees' performance level as low.

5.2.2. About Modjo Dry Port Service Delivery -Operational Process

❖ Effectiveness of the port and terminal service provision

It could be concluded, as per the majority of the respondent's opinion, that dry port service provision as ineffective, while some of the respondents claimed the availability of effective port and terminal service provision to its customers. Similarly some of the respondents claimed that port service delivered timely; while the majority of respondents disagreed on the fact prevalence of timely service provision. According the majority of respondents' conclusion the dry port and terminal has advantage by reducing operational cost to customer, while some respondents disagreed on this premise.

❖ Integration of dry port

The majority respondents conclude that inland port and terminal integrated by network; but some disclaimed the existence of integrated work at Modjo dry port and terminal. Similarly the majority respondents conclude that Modjo port and terminal has done its activities with customs authority during cargoes clearance processes; while some of the respondents disagreed on this premise.

5.2.3. About Office Facilities of Modjo Dry Port

It could be concluded that the majority respondents confirmed that the working place /building as conducive; while some disclaimed the conduciveness of the working place. Similarly the majority respondents concluded that the working environment of the port as conducive, but some didn't consider it as conducive. Furthermore, the majority of respondents conclude that the inland port and terminal minimize maritime transportation cost; while some of the respondents disagree on that inland port and terminal couldn't minimize cost of transportation.

5.2.4. About Modjo Dry Port Safety and Security

It could be concluded that ,as majority respondent, the Modjo dry port and terminal has provide good security and safety to customers' cargoes.; but some disclaimed the existence of good security. Similarly, the majority of respondents claimed that port gate control/inspection of Modjo port and terminal is effectively working; while some of the respondents disagreed on the effectiveness of port gate control/inspection.

5.2.5. About ICT Technology of Modjo Dry Port

As per the assessment of study, the Modjo dry port and terminal whether or not utilized information technology application effectively. Based on respondents' opinions the majority respondents claimed that in Modjo dry port and terminal operational activities are integrated with computer network and its level of IT based automated operational process is high; while some of the respondents stated the available network as low. In addition, based on the study finding, it could be concluded that the available network is low. In addition, internet facility availability /access in Modjo port and terminal also low.

Generally it could be concluded that the role of inland port and terminal for Ethiopian logistics industry is vital since it serves as means of saving foreign currency of the country. Therefore, the establishment of the inland port and terminal helps the facilitation of the import/export trade of the country. Besides, it helps to improve the safety and security of import/export cargoes of the country. In addition, it enables to increase cargo handling capacity and the facilitation of import/export cargo customs clearance process in own country. Meanwhile, it also enables to reduce import/export cargo dwelling time at port of Djibouti.

However, as the research study findings discovered that in Modjo dry port and terminal it has been witnessed the unavailability of sufficient working materials (such as port equipment, trucks, etc.), lack of skilled manpower and low level to computerized system that have lagging effects on daily port and terminal operations of the Modjo dry port.

In addition to these, based on logistics performance indicators Ethiopia has been one of the least performing countries in the world. This has been, particularly, characterized by high freight transit time, longer cargo dwell time as well as ship's turnaround time in ports.

5.3. RECOMENATION

Based on conclusion of the study, the researcher suggest the following elements that should be taken as improvement of the Enterprise so as to excel the contribution of inland port and terminal for smooth follows of logistics operation of the country.

- It is advisable the Enterprise should fulfill sufficient number of port terminal machineries/equipment, heavy duty and cargo trucks are essential for facilitation of stuffing/unstuffing, loading/unloading operational activities so as to improve the logistics performance of the country.
- Since the contemporary logistics industry requires computerized service delivery, the Enterprise should highly develop its automated system and hence recruit sufficient skilled man power to operate the logistics system effectively.
- Based on the fact that, the Enterprise shouldered an immense responsibility to facilitate world class effective and efficient import and export trade that enhance sustainable economic growth and development of the country, therefore, the employees' (of Modjo port terminal branch office) awareness shall be optimized through trainings on their role in achieving the responsibility of the Enterprise.

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