

THE EFFECT OF LOGISTICS PERFORMANCE ON SERVICE DELIVERY: THE CASE OF ETHIOPIAN SHIPPING AND LOGISTICS SERVICE ENTERPRISE IN DIRE DAWA BRANCH



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A Thesis Submitted to the Department of Logistics and Supply Chain Management in Partial Fulfillment of the Requirement for the Award of Master of Arts in Logistics and Supply Chain Management

(Specialization: Logistics and Supply Chain Management)

Dire Dawa University, Dire Dawa, Ethiopia

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Dire Dawa University
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Final Thesis Approval Sheet

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DECLARATION

I hereby declare that this thesis work entitled “The effect of logistics performance on service delivery of ESLSE the case of Dire Dawa branch.” Submitted to the Department of Logistics and Supply Chain Management, Dire Dawa university; in Partial Fulfillment of the Requirements for the Award of Master Degree in Logistics and Supply Chain Management is my original work and it has not been presented to any other Institute of higher learning for a similar or other academic award. In addition, all the sources that I have used or quoted have been indicated and acknowledged my means of complete references.

Mustafe Tahir Guled

.....

Signature

.....

Date

Dire Dawa University

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LIST OF ACRONYMS

ESLSE	Ethiopian Shipping and Logistics Service Enterprise
GDP	Gross Domestic Product
ICT	Information Communication Technology
IT	Information Technology
KII	Key Informant Interviews
LP	Logistic Performance
SPSS	Statistical Package for Social Science

Abstract

The objective of this study is to assess the effect of logistics performance on service delivery of ESLSE. Specifically, the study was used non-probability method for selecting the targeted population in which each item which have relation to the study are include. By doing the same way for all the populations of exporters which is 25, importers which is 43, Transporters which is 25 total customers of 93 and 70 employ of ESLSE, (Source from ESLSE marketing department documents and human resource). This total population (163) used for administering question for Exporter, Importer, Transporter and staff members of the ESLES. Key informant Interview (KII). The primary data from employee of ESLSE and customers of ESLSE were gathered using questionnaire and interview for each. in all, 120 completed questionnaires were collected from 163 the response rate. Primary sources of data gathered from ESLSE and yearly report of the enterprise to assess their logistics performance. The data is collected through structured interviews based on questionnaire, the respondents have been approached by the data collectors at either their office or on their seals area. In order to examine the date correlation analysis were used. The data entry and analysis were conducted by using SPSS version 14.the relationship between staff competence, distribution support, logistic effectiveness, logistic efficiency, information communication technology with logistics service delivery is 0.491, 0.361, 0.0241, 0.103, 0.125,respectively,which indicate a positive correlation respectively with 1% significant level that means an improvement in those challenging factors improve the overall logistics service delivery in ESLSE organization and chi-square used to correlation analysis between customer and employee of the enterprise. It is concluded that ESLSE were less performing in their logistics performance. The findings of the study revealed that each activities of logistics performance have under performance. The study recommended for ESLSE to continuously improve their logistical performance, among other things, through strengthening and developing a good relationship with others modernize their order management practice. Furthermore, it is also advisable for them to further improve the relationship between customer and other sister company or enterprise of in a foreign country.

Keywords: *logistics performance, logistics, logistics efficiency, logistics effectiveness, (ESLSE Ethiopian shipping and logistics service enterprise)*

CHAPTER ONE

1. INTRODUCTION

1.1 Background of the Study

Logistic services provisioning is a fundamental tool for manufacturers' successful performance in terms of increased flexibility, service improvement and cost reduction; the three factors that are necessary for any company to distinguish themselves from their competitors and to compete successfully in today's market conditions. It has been suggested that logistic processes management is possible to obtain differentiated results in customer's satisfaction along with cost reduction. The same author asserts that logistics represents an important option, not only because it increases operational efficiency but because it can positively affect customer's behavioral intentions also. Logistics is increasingly playing an important role in everyday business, and becoming a major factor of differentiation in the market. In the current competitive climate there is strong pressure, on one hand, to operate in product and service differentiation, and on other hand, operate on the price factor allowing its reduction. Logistics can manage these aspects, constituting a strategic or value-creation tool Melnyk et al. (2009).

Logistics is a backbone for the global supply chains. Logistics play a key role in both micro and macro perspective. From a micro perspective, logistics service could fulfill the customer's expectations through excellent logistics service provision and from a macro perspective; it drives the economic development of a country. Worldwide, logistics has started its role as early as in the beginning of 19th century in the area of distributing farm products (Lambert, Stock, & Ellram 1998) and it continues to evolve still today. Logistics could also improve business performance through its flexibility and advanced technology application, thus leading to organizational success (Tracey, 1998). In a global supply chain context, moving goods across borders has been one of its significant roles recently. The remarkable expansion in external trade has brought higher demand for an efficient and effectiveness of logistics services (Ali, Jaafar, & Mohamad, 2008).

Ethiopian Shipping and Logistics Service Enterprise (ESLSE) is Company that is established and owned by the government to maintain the less admirable economic growth that has been registered in the country over the last several years. One of the strategic measures taken by the

Federal Government of Ethiopia is merging the former three public enterprises that have until recently been operating separately in a rather similar and interdependent maritime sub-sector namely, Ethiopian Shipping Lines SC, Maritime and Transit Services Enterprise and Dry Port Enterprise.

The Ethiopian Shipping and Logistics Services Enterprise is the result of this merger. This newly Amalgamated enterprise came into being following the issuance of Regulation by the Council of Ministers (Regulation No. 255/2011), and is vested with the huge responsibility of rendering sea transport & logistics services to the country's importers, exporters, and investors in a more effective and efficient way, by reducing transit time, cost and handoffs. Besides, a truck operating company named Comet Transport SC has recently been transferred to ESLSE following a government decree issued in the mid of (2014).

According to Debela, Fekadu Melese(2017), the constraints associated with logistics system in Ethiopia could be characterized by: underdevelopment of logistics management system, inadequate fleets of vehicles /means of transport/ for goods transport, the market possibility of the country is hampered by poor logistics system, lack of coordination of goods transport /which resulted in low load rate/, damage of goods and quality deterioration while in storage, packaging, transporting and lack of organization and management tools that are required to promote intermodal system.

Christensen et al. (2013) made influential research on shipping and logistics services, and the author posits that the notion of logistics and shipping services in early times was executed predominantly in military institutions to ensure delivery of military supplies to war fronts. Bhat (2011) explains military logistics as the design and integration of all aspects of support for the operational capability of the military forces and their equipment to ensure readiness, reliability, and efficiency.

1.2 Statement of the problem

The logistics performance of Ethiopia is characterized by lack of coordination in the chain, lack of coordination in areas of inventory planning and warehouse management, less attention on customer satisfaction, inadequate vehicles in delivery of goods to customers and also lack of coordination with transporters. In addition, Lisanza (2014) concluded that most logistics organizations in East Africa have been embracing SCM integration which has assisted them to enhance their performance; however, the study may not be applicable to other organization operating outside East African region. Lastly Ndambuki (2013) concluded that the integration of supply chain has proven to be of critical success for a company's supply chain and performance; however, the study was limited to international humanitarian organization operating in Ethiopia.

In addition, given that the subsector is markedly characterized by the lack of logistical results, these practices are greatly affecting its provision of logistics services linked to the estimation of customer needs, efficient and effective delivery, integration and collaboration in the entire supply chain, the exchange of information and informal methods and the use of specialists to carry out specific tasks along the supply chain. The qualitative data collected from the enterprise's customers affirmed the fact that, although ESLSE has improved the provision of services, there are many complaints related to poor services and inefficiency in almost all service areas. Specifically, the absence of networks, the slow service speed, the deficient treatments of the clients, the delays, etc. Any inefficiency of operations and capacity constraints can threaten the growth of the organization's service and, therefore, a pressing problem that will quickly get worse, unless a critical action is taken (Fekadu, 2013).

The recently published report (2018) by the enterprise also highlighted that the logistics system still lacks something very serious for its success. Specifically, it is believed that the best logistical practices that can be obtained through the integration of those logistic activities in the enterprise and the interaction within the organization produce a better service provision (efficient and effective). ESLSE has been monopolized for more than five decades leading the government officials and experts in the field to enshroud the advantage of being competitive, to fight for the business to grow, and overlook opening doors for local and foreign investors. Since the customer

has to use this company's sea transportation service for their imports and exports, there is constant revenue and customers are rarely lost. While the protectionism might serve certain interests of the country, the enterprise is thought to not be competitive when compared to international shipping firms (WorldBank, 2018).

Some of the key logistics practices that impact performance is related to estimation of customer needs, efficient and effective delivery, integration and collaboration throughout the supply chain, sharing of information as well as informal methods and use of specialists for performing specific jobs across the supply chain, all of these practices impact logistics performance in the institute (Fekadu et al. 2013). However, ESLSE is playing great and very important role for the development of the country, it is not doing up to the level where it is expected due to poor logistics management system and lack of coordination of goods transport, low level of development of logistics infrastructure and inadequate fleets of freight vehicles in number and status (Old aged vehicles), as well as warehouse (Fekadu *et al.* 2013). This coupled with lack of sea port resulted in poor linkage of producers (farmers) to the consumers (market) and non-competitiveness of Ethiopian goods on global market, which in turn compromised livelihood of the people and economy of the country (Fekadu *et al.* 2013).

Although many authors have written articles on the provision of logistics services and various performance indicators, there is very little literature regarding the provision of logistics services in a comprehensive manner; Covering the entire chain of operations and not just the performance to operate efficiently. For the researcher's knowledge, there is no empirical analysis conducted in this area, specifically in the transport sector. Consequently, the researcher evaluated the logistics performance on service delivery by taking ESLSE as a case study. Therefore, this study would contribute to filling the information gap, in relation to improving the provision of logistics services.

1.3 Research Questions

- What is the effect of Information and communication technology (ICT) on logistics service delivery in ESLSE?
- What is the logistic performance practice of ESLSE in terms of logistics efficiency and effectiveness and differentiation?
- What is the effect of Distribution support on logistics service delivery in ESLSE?
- What is the performance of staff competence on logistics service delivery in ESLSE?

1.4 Objectives of the study

1.4.1 General objective

The general objective of this study is to assess the effect of logistics performance on service delivery of ESLSE in the case of Dire Dawa branch.

1.4.2 Specific Objectives

The specific objectives of this study have the following details;

- To analyze the effect of Information and communication technology on logistics service delivery.
- To assess the effect of logistics performance of ESLSE in terms of logistics efficiency and effectiveness and differentiation.
- To examine the effect of Distribution support on logistics service delivery.
- To determine the performance of staff competence on logistics service delivery.

1.5 Significance of the study

The expected result of the study will be help to reveal the relationships between the proposed factors and the provision of logistics services. And also the output of this research will be contribute to betterment of ESLSE in terms of customer service, distribution support, information and communication technology, and the efficiency and effectiveness of the country's foreign trade and import of goods. Therefore, it will be a contribution to the management body of

the company to have a better image and facilitate realistic, appropriate and timely measures to improve and improve logistics management activities, specifically aimed at the effective and efficient provision of logistics services for customers. It also enlightens policy makers in the enterprise to have a glance of what is missing in the total picture of their logistics performance and take necessary directions towards improving it in the future. Moreover, it will be an initial input for those who wish to conduct further studies on this topic.

1.6 Scope of the Study

This study was delimited to evaluate the effect of logistics performance on service delivery in the ESLSE considering the enterprise's process, the competence of the personnel, the distribution support and the information technology and the communication systems of the enterprise and efficiency, effectiveness, differentiation of service. The types of customers only considered in this study are (importers, exporters and transporters) of Ethiopia Shipping and Logistic Service Enterprise. In addition, the study was restricted to the branch office of sale of logistics services of the enterprise are Ethiopian Shipping and Logistics Service Enterprise which are located in the Dire Dawa city administration and the respondents are contact in those places. Consequently, among the ESLSE departments, the study focuses on the customers of the Department of Transportation, importers, exporters and the Shipping division in the branch office of Dire Dawa.

1.7 Limitation of the Study

Even though the Enterprise has branches and customers in different parts of the country, the researcher only deals with the customers of the Enterprise and employees and management members of the Enterprise reside in Dire Dawa branch which in turn may not be representative of the overall picture of the country. As an individual researcher and a full time employee, financial and time constraints are prime limitations.

1.8 Organization of the study

The study consists of five chapters. The first chapter deals with the problem, its nature and level Objective and importance of the study briefly discussed in this chapter. The review of the related literature discussing in the second chapter. This chapter presents the conceptual frame works or a brief review of recent related studies that serve as a basis and proof to support the basic questions of the study. Chapter three addresses research methods which explain the design, sample procedures, instrument and data analysis techniques issued to achieve the purpose of the study.

Chapter four focuses on the presentations, analysis and interpretation of the data. Finally, the fifth chapter deals with conclusions and recommendations.

CHAPTER TWO

2. REVIEW OF RELATED LITERATURE

2.1 THEORETICAL REVIEW

2.1.1 Definition and concept of Logistics

The term logistics is defined by different scholars and institutions. According to Heskett, Glaskowsky and Ivie, (1973) defined Logistics as the management of all activities which facilitate movement and the coordination of supply and demand in the creation of time and place utility. According to Chartered Institute of Logistics and Transport UK, (2012) Logistics is the positioning of resource at the right time, in the right place, at the right cost, at the right quality. According to The Council of Logistics Management (1998) Logistics deals mainly with the planning, implementing and controlling the efficient and the effective flow and storage of goods from point of origin to point of consumption for the purpose of confirming the customer requirement.

According to Alan et.al (2014) Logistics is concerned with the efficient transfer of goods from the source of supply through the place of manufacture to the point of consumption in a cost-effective way while providing an acceptable service to the customer. According to Matiwas, (2013) Logistics is what happens in the supply chain. Logistics activities (customer response, inventory management, supply, transportation, and warehousing) connect and activate the objects in the supply chain. Here under are different definitions for logistics as quoted in Alan et al. (2014).

As Robb, et al. (2008) mention, since logistics deal with physical, informational and cash flow management, it is generally recognized as a major determinant of business performance, but practices particularly in terms of performance analysis, are still at the stage of being studied by professionals and academics.

2.1.2. Logistics performance and its measurement

Logistics performance (LP) is defined as ‘analysis of both effectiveness and efficiency in accomplishing a given task’ (Mentzer & Konrad, 1991). Other scholar refers LP as a metric used to quantify the efficiency and or effectiveness of an action (Neely, Gregory, & Platts, 2005). This topic continues and LP has been seen as multi-dimensional and is defined as the degree of

efficiency, effectiveness and differentiation associated with the accomplishment of activities (adapted from Fugate, Mentzer, & Stank, 2010).

Researchers have always find it difficult to define LP because organization's have multiple and frequently conflicting goals. In the context of this study, efficiency is a measure of how economically the firm's resources are utilized (Neely et al., 2005). Several critical areas in LP effectiveness as described by Langley & Holcomb (1992) are product guarantee, availability and fulfillment time. They also extended the definition of effectiveness by adding differentiation as the ability to create value for the customer through the uniqueness and distinctiveness of logistics services.

According to Yang (2011), transportation today is all about logistics in international trade. The primary task of logistics is transportation which deals with moving the products from one place to another. The international transportation of finished goods from shipper site to customer destination is essential as that applies to domestic production and transportation to domestic market. However, there is a major difference between the two operations, the goods can be out of exporter control for a more extended period, and more documentation is required. The basics activities involved in the flow of good are transportation, warehouse and inventories, all of which, as we have emphasized should be integrated into a system's approach if the number if the warehouse is increased at more places. Similarly, if an attempt is made to decrease inventory costs by reducing the number of warehouse and inventory levels, transportation cost will be going up (Brown, 1985).

Logistics performance is a strong determinant of national income and is the result of actions from a wide array of private and public actors. Understanding and decomposing the components of logistics performance is fundamental to improving the efficiency of transport systems and the quality of regulation of trade and transport. Performance measurement is to accurately assess how well your business is performing; you need to develop some quantifiable measures. Ideally, your measures clearly identify those aspects of your business processes that need improvement and those that are working well. You can also use performance measures to evaluate your company's productivity over a set period of time. According to Weekly (1995) Measurement is the first step that leads to control and eventually improvement. If you cannot measure something,

you can't understand it. If you can't understand it, you cannot control it. If you cannot control it, you cannot improve it.

According to Rose (1995) describing performance measurement activities says' it is a process that records measures, display results, subsequent actions. Performance measurement activities and processes is the issue that "performance indicators are to a large extent domain specific" (Lai et al., 2004). Hence, there is no unique subset of indicators that can be selected. Therefore, frequently the choice is company specific and orientation of the company is important. Existing literatures on performance measurement in logistics provides a large number of potential useful indicators.

Literatures on the logistic industry are in abundance in the form of survey-based empirical research and reviews of the existing literatures from user perspectives. However, it is still rare. Noted previously, the importance and complexity of logistics performance measurement has led to the development of numerous performance measurement frameworks and models by scholars Brewer and Speh 2000; Griffis, Goldsby, Cooper, and Closs, (2004). One such model developed by Fugate, Mentzer, and Stank (2010), logistics performance is supported by several other scholars who agree logistics performance is a multidimensional function of efficiency, effectiveness, and differentiation and that all can and should be "pursued simultaneously," (Fugate et. al., 2010). Thus, the model provides a useful lens from which to compare the identified body of literature (treatise) to the industry data (diffusion) in order to assess the fashion setting role of logistics scholars.

Performance measures play an important role in the management of any organization and are of particular value to logistics managers. Performance measurement is seen as an avenue for logistics managers to achieve sustainable competitive advantage by providing timely, reliable indications of both performance successes and shortcomings. Research in the area of logistics performance measurement supports this vital role of performance measures, and, furthermore, has concluded that success in the performance of logistics activities and capabilities is linked to improved organizational performance (Fugate, Mentzer, and Stank, 2010).

2.1.3. The Role of logistics performance on Service Delivery

The significance of logistics has evolved from a more passive and cost minimization oriented activity to a key success factor for firm competitiveness. More recently it has become an integral part of a firm's strategic planning process Carter et al., (2017). Logistics management (right performance) tries to have the “right product”, in the “right quantity”, at the “right place”, at the “right time”, with the “right cost”. However, balancing between total logistics cost and customer service level is essential to successful logistics Alan et al (2014). It is now also recognized that distribution and logistics can be source of competitive advantage to company by helping to achieve either least cost or by offering value in the form of positioning the product or service exactly where, when and how the customer wants it.

As logistics are increasingly expected to contribute to organizational performance, several studies have examined the influence of logistics performance operations and logistics management practices on overall company performance. Some authors, such as Zhou and Benton (2007) investigated the link between logistics management practices and distribution performance regarding reliability of service, and concluded that practices related to the distribution and sharing of information have a direct impact on performance.

Green et al. (2008), addressing the relationship between logistics practices and organizational performance in a large number of companies in the United States, concluded that logistic practices have a positive impact on business performance, namely in speed of delivery, the responsiveness and flexibility of delivery, and also influence marketing performance, which has a leverage effect on the average sales growth and business profitability. According to Roth et al. (2008) investigated the antecedents and performance results of a set of leading global companies, concluding that information technology and logistics management contribute to increased sales and profitability. More precisely, information and communication technology increased sales and logistics management increased organizational profitability.

2.1.4. Logistics customer service

The term of “logistics customer service” can be defined in various ways. Bowersox and Closes, Christopher, European Logistics Association agree that “customer services the general term used to describe the ability of an organization to address the needs of the customers at the time, at the place and in the way required by them”.

In the logistics sense, it is a service organized to provide a continuing link between the times that the order is requested and the goods are received with the objective of satisfying present customer needs and criteria and anticipating and satisfying expectations. Customer service can be viewed in one of several ways. Sometimes customer service is seen as an activity; that is, something that the organization provides. A customer service department that handles complaints, special orders, billing, etc. often evidences this aspect of customer service. Similarly, customer service can be viewed as a measure of performance. For example, if the firm can ship completed orders within 24 hours of receipt 95 percent of the time, it is providing good customer service. Unfortunately, both of these views are very narrow. In the former case, customer service activities seem to focus on resolving problems rather proactively meeting customer needs. In many retail stores, for example, the customer service department is hidden away in a far corner of the building where it serves as a place for customers to take their grievances. In the latter instance, attaining some desired level of functional performance can lead management to focus on the tasks required to meet some standard rather than the needs of the customer.

2.1.5 Warehouse

Warehousing refers to the activities involving storage of goods on a large-scale in a systematic and orderly manner and making them available conveniently when needed. Warehousing is one of the important auxiliaries to trade. It creates time utility by bridging the time gap between production and consumption of goods. According to Lambert et al. (1998) they contribute to a multitude of the company's missions, like; Achieving transportation economies (e.g. combine shipment, full-container load), achieving production economies (e.g. make-to-stock production policy), taking advantage of quality purchase discounts and forward buys, supporting the firm's customer service policies, meeting changing market conditions and uncertainties (e.g. seasonality, demand fluctuations, competition), overcoming the time and space differences that exist between producers and customers, providing temporary storage of material to be disposed or recycled (i.e. reverse logistics).

Warehouse layout is also important in achieve greater efficiencies. Minimizing travel time between picking locations can greatly improve productivity. However, to achieve this increase in efficiency, companies must develop processes to regularly monitor picking travel times and storage locations. Warehouse layout is one important factor affecting the order picking process. Caron et al, 2000 find that the warehouse layout has a considerable effect on order picking travel

distance. They point out the layout design has an effect of more than 60% on the total travel. Distance, and also find the relationship between warehouse layout and order picking travel distance (Bartholdi & Hackman, 2011). Warehouse operations that still use hard copy pick tickets find that it is not very efficient and prone to human errors. To combat this and to maximize efficiency, world class warehouse operations have adopted hand-held RF readers and printers. Companies are also introducing pick-to-light and voice recognition technology (Tsige, 2013).

A warehouse is a commercial building for buffering and storage of goods or an intermediate area for storing of raw materials or products until they are needed for production or consumption Chua and Teo (2008) cited by Haung Min study (2010).

2.1.6 Information and communication technology (ICT)

Information technology is valuable in managing and controlling the documents as well as the departments which is found main office at Addis Ababa and at Djibouti port. Other applications help optimize the number of deliveries and manage the daily distribution of containers. Additional IT applications have a more operational and short-term focus, automating activities such as inventory management, distribution, controlling of documents. By applying information technology ESLSE has been able to leverage its infrastructure, systems and processes in a more cost-effective manner. Logistics players were highly depending on the information technology (IT) and electronic data interchange Ali et al., (2008). According to Raus et al (2009) the usage of IT and EDI, could prevent criminal activities, informal payments and improve cost efficiency. Nevertheless, the transition process is required for a smooth transition from traditional to e-customs process.

The information in a supply chain can be classified in different ways; strategic or tactical; logistical or pertaining to consumers (Mentzer, 2004). Effective inter-organizational communication could be characterized by frequent, genuine and involving personal contacts between buying and selling personnel (Krause & Ellram, 1997). Lee & Whang (2000) discuss various types of shared information and their potential benefits. For example, sharing order status can improve the quality of customer service, reduce payment cycles and reduce labor cost. On the other hand, information sharing on forecast demand of products that have high demand variability is significant in assist reduce stock out and over-stocking related costs whereas

sharing information on market knowledge can help improve advertisement. While sharing information, it is important to consider the level of benefit to the users and timeliness; delayed transmission of information increases the effects of volatility afflicting the upstream level of supply chain.

2.1.7 Inventory

An inventory system is the set of policies and controls that monitor levels of inventory and determine what levels should be maintained, when stock should be replenished, and how large orders should be. According to Meng (2006) (Cited by Ebistu Alamineh 2015), inventory is one of the most expensive and important assets of many companies, representing as much as 50 percent of total invested capital. Managers have long recognized that good inventory control is crucial. On one hand, a firm can try to reduce costs by reducing on-hand inventory levels. On the other hand, customers become dissatisfied when frequent inventory stock out, occur. Thus, companies must make the balance between low and high inventory levels. As you would expect, cost minimization is the major factor in obtaining this delicate balance. Inventory is the stock of any item or resource used in an organization. Inventory includes: raw materials, finished products, component parts, supplies, and work-in-process.

2.1.8 Interrelationships between Transportation and Logistics

Transportation defined as the activities involved in shipping any goods or finished products from suppliers to a facility or to warehouses and sales locations (Kenyon and Meixell, 2011). It is included because it is a major part of the supply chain due to its power to add value to some goods by moving them from their current location to a more advantageous location. Through research, (Atos,2012; Kenyon2011) trans partition has been found to be a major factor in logistics processes.

It is mentioned in virtually all research regarding this topic and is often the main focus of articles discussing logistics. Without well-developed transportation systems, logistics could not bring its advantages into full play. Besides, a good transport system in logistics activities could provide better logistics efficiency, reduce operation cost, and promote service quality. The improvement of transportation systems needs the effort from both public and private sectors. A well-operated logistics system could increase both the competitiveness of the government and enterprises (Xiande, 2008).

According to Yang (2011), transportation today is all about logistics in international trade. The primary task of logistics is transportation which deals with moving the products from one place to another. The international transportation of finished goods from shipper site to customer destination is essential as that applies to domestic production and transportation to domestic market. However, there is a major difference between the two operations, the goods can be out of exporter control for a more extended period, and more documentation is required.

2.2 Review of Empirical Literature

Logistics is that part of the Supply Chain Management that plans, implements, and controls the efficient, effective forward and reverse flow and storage of goods, services and related information from the point of origin and the point of consumption in order to meet customer's requirements (CSCMP, 2007). The ultimate objective of logistics function is to support corporate goals by delivering products to the consumer at a time and place of his choosing. However, this objective must be balanced against the cost of providing the service. Logistics is one of the major enablers of growth and commerce activity in a country.

A key determinant of business performance nowadays is the role of the "logistics function" in ensuring the smooth flow of materials, products and information throughout a company's supply chains (Smyth, 2004). More recently, logistics has become more prominent and is recognized as a critical factor in competitive advantage (Bowersox & Closs, 2010). The logistics operations process includes the inputting, storing, transporting and distributing of physical goods. Over the years, logistics has developed from single-party logistics (self-managed) to multi-party, using logistics networks focusing on global operations.

Gacuru et al., (2015) conducted a study among logistics firm workers at Jomo Kenyatta International Airport Area on factors affecting efficiency in logistics performance of trading and distribution firms. The study descriptively analyzed information technology, competence and business to business relationship and their impact on logistics performance. The study concludes that that information technology, level of competence and business to business relationship affects the efficiency of logistics performance in trade and distribution firms. Hence, the study recommends that the logistic firms should enhance the use information technologies that are compatible with their logistics activities. Besides, the trade and distribution firms should employ a change agent to oversee the staffs of the logistics forms undergo on the job training, in order to

improve their skills and capabilities to enhance efficiency of logistics performance. It also underlined the need to exerting efforts to reach across the entire logistics industry to help streamline essential infrastructure and processes to enhance service delivery, reduce costs and improve responsiveness to customer demand in the logistics activities.

A study conducted by Larson et al., (2007) among business leaders on the impact of the perception of logistics performance on business results, found that a significant number of managers said that the perceived impact of logistics performance consisted of better performance in customer service, better inventory levels and optimization costs. Finally, a study which was conducted by Sezen (2005) argued that logistics performance can be evaluated by considering logistics costs, customer satisfaction, product availability in the market, conforming to the promised delivery dates and quantities, flexibility in all logistics activities, and efficiency in inventory management.

Gassenheimer et al (2014) conducted an empirical analysis on data obtained by mail survey from Executives to define and further measure performance with respect to logistics that resulted in identifying length of promised order cycle times for base-line/in-stock products, manufacturer's Performance in meeting promised delivery dates, fill rate on base-line/in-stock items, advance notice on shipping delays, accuracy of manufacturer in forecasting and committing to estimated Shipping dates on contract/project orders, manufacturer's adherence to special shipping instructions, and accuracy in filling orders as appropriate measures for logistical performance.

Besides, Fugate et al., (2010:14) were conceptualizing logistics performance as multidimensional construct that consisted of logistics differentiation, logistics efficiency and logistics effectiveness. To put it in other words, it seems that the most holistic study that objectively accounted the vital aspects of logistics performance is that made by Fugate et al., (2010) where the authors constructed logistics performance in terms of the dimensions of logistics effectiveness, logistics efficiency and logistics differentiation. Moreover, Fugate et.al., (2010:14) also not successful by measuring logistics performance in terms of logistics activities like transportation management, customer service management, inventory planning, supply management and warehouse management aspects; thus the present paper tries to utilize the logistics performance model from the view point of logistics activities.

2.3 Conceptual Framework

The researcher assesses the effect of Logistic performance on service delivery in terms of Logistic effectiveness, efficiency, differentiation and staff competences, distribution support, ICT. On the other hand, in this research, logistic performance measured from the external point of view using indicators of customer satisfaction as logistic service delivery indicator. The available literatures focus on effectiveness and efficiency as key dimensions of logistics performance. However, they failed to incorporate a differentiated logistical service that could be cited as part of an array of logistical functions and further considered as a major distinguishing factor for an improved organizational performance (seuring, s., & muller, m. 2008)

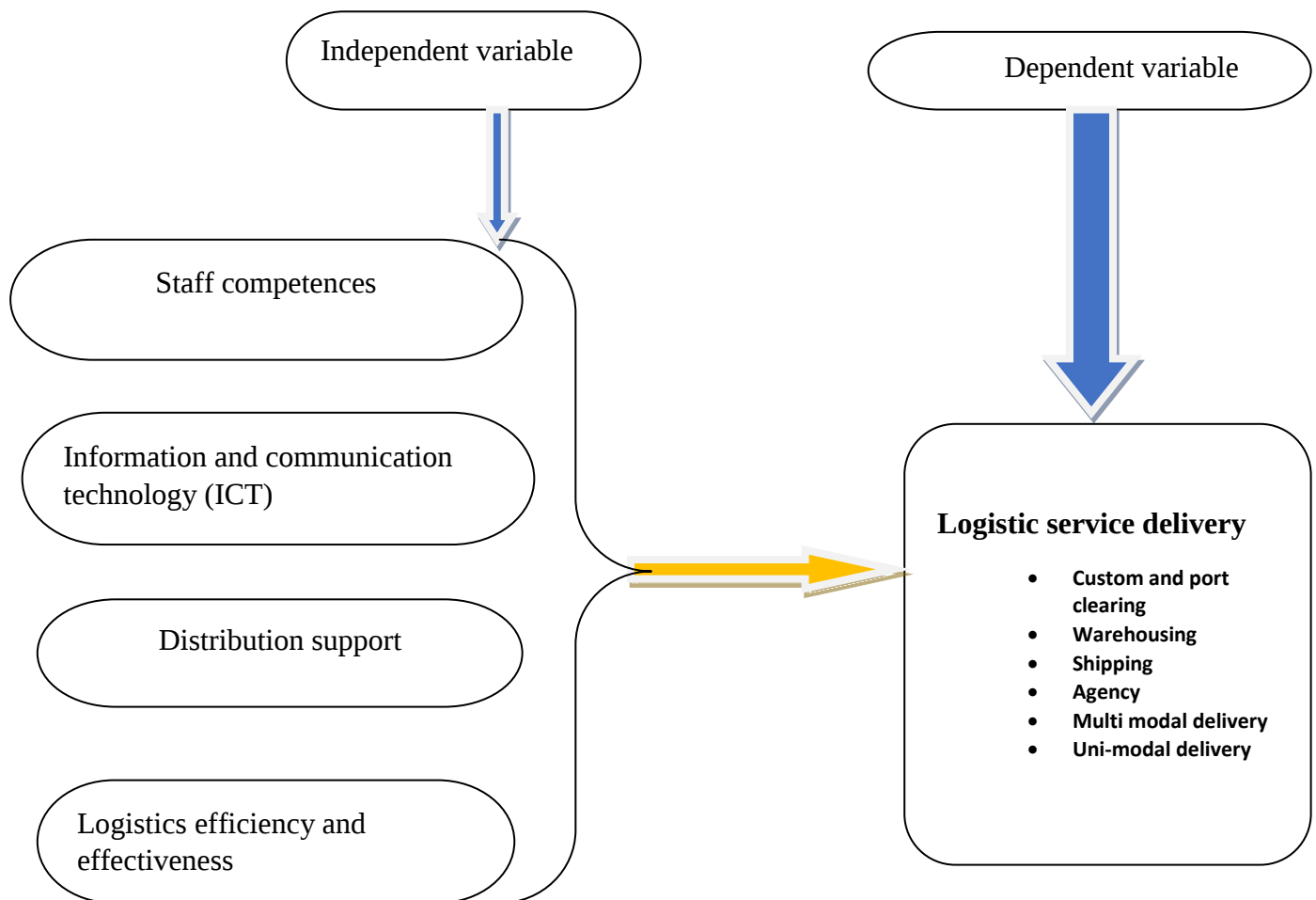


Figure 2.1 Conceptual framework

SERVICES ESLSE PROVIDES TO ITS CUSTOMERS

1. Custom and port clearing: - its time saving and reliable documentation process.
2. Warehousing: - where goods temporarily stored and its where goods are loaded and unloaded and custom formalities are completed.
3. Shipping process: - ESLSE provide coastal and international transportation services to customers.
4. Agency service: - its agent responsible for handling shipment and cargo services on behalf of its customers.
5. Multi-modal delivery: - it's a door to door cargo service with SAD (single admirative document) from point of origin to point of delivery.
6. Uni-modal delivery: - services which ends at port of DJBOUTI and after that consignee will choose his/her transitors and transporters and enter agreement.

CHAPTER THREE

3. RESEARCH METHODOLOGY

3.1 Research Design and Approach

Descriptive type of research was being used to assess the effect of Logistic performance in ESLSE. Descriptive research design is used to describe independent and dependent variables and it is a scientific method of carrying out a systematic or formal inquiry in which data is collected and analyzed in order to describe the current conditions, terms concerning in a certain specific field Problem (Mugenda, 2003). The research approach that this study was used both qualitative and quantitative approaches can contribute greater to the wholeness of the investigation at hand. The quantitative approach involves the generation of data in quantitative form which can be subjected to rigorous quantitative analysis in a formal and rigid fashion. Qualitative approach to research is concerned with subjective assessment of attitudes, opinions and behavior (Kothari, 2004).

This study was used the mixed method design in sequential descriptive way. Because, mixed research is useful to capture the best of both qualitative and quantitative approaches and in these the researchers also intended to assess detail features of Logistic performance in the enterprise. The advantage of using mixed methods is that it enables to triangulate and support the data and result collected by questionnaire (Greener, 2008 and Saunders et.al, 2007).

3.2 Sources of Data and Collection method

In this research primary and secondary data sources was used. Primary data was collected by questionnaires and interviews. The questionnaires have both open ended and closed ended questions and it administer using drop and then pick later method. While secondary data was obtained from literatures and other related books, journals, manuals, magazines, newspaper and documents of the enterprise. Accordingly, the study will use open-ended and close ended questionnaires, and semi-structure interview to meet research objectives. The researcher was use primary and secondary data collection tools such as questionnaire and interview, while the interview is for the managers and the questionnaires are for the employees and customers who are appropriate for the research to collect original data from employees, managers and clients of ESLSE about logistics practice activities of the enterprise. In addition to that, both published and unpublished data were obtained from the enterprise to create a good understanding about the

nature of the enterprise's service and published data was also collected from different data publishing sources (secondary source of data). Furthermore, the study used an additional reference material in the background of the study and literature review to strengthen the study.

3.3 Target Population

The study was used non-probability method for selecting the targeted population in which each item which have relation to the study are include. It was used the purposive sampling method to conduct the non-probability method and judgmental sampling method of non-probabilistic. Also, the researchers apply a research strategy which is survey to collected the intended data through detail assessment of necessary documents and face to face contact with responsible officials. This study was used 163 total populations which consists of the staff members, importer, exporter and Transporters, and transport associations from external royal customers and purposive or judgmental sampling method for the heads of the four department of ESLSE.

By doing the same way for all the populations of exporters which is 25, importers which is 43, Transporters which is 25 total customers of 93 and 70 employees of ESLSE, (Source from ESLSE marketing department documents and human resource). This total population (163) used for administering questions for Exporters, Importers, Transporters and staff members of the ESLES. Key informant Interview (KII) used for managers in ESLSE.

Table 3.1: Targeted population

Department	Targeted population
Transporters	25
Exporters	25
Importers	43
Employees of ESLSE,	70
Total	163

3.4 Methods of Data Analysis

All collected data systematically organized, coded, edited and entered in spread sheets of SPSS (statistical Packages for Social Science) version 14. Here, descriptive and inferential statistics was employed to analyze the collected data. In descriptive statistics; averages, percentages and standard deviation was being used. On the other hand, inferential statistics was employed in order to analyze the information related to the independent variable and dependent variables. Correlation coefficient analysis was used to established the relationship between the dependent (Logistics Service Delivery) and independent variables (staff competence, logistics efficiency, effectiveness, Distribution support, Information and communication technology). In addition, Multiple Regression analysis was used to measure effect of logistics performance on service delivery was regressed against independent variables as expressed in the following equation:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$$
, where, Y = Logistics Service Delivery β_0 = Constant (coefficient of intercept), X_1 = staff competence X_2 = logistics efficiency, x_3 =Logistics effectiveness, x_4 =Enterprises process, X_5 = Distribution support X_6 = Information and communication technology ϵ = error term.

Non-quantifiable data will compose, organize and analyze in words (narration). But data will gather through close ended questionnaires will analyze in quantitative (numerical ways).

3.5 Reliability and Validity Tests

3.5.1 Reliability

The reliability analysis measures the degree to which the data collection methods or scales used will yield consistent findings. Cronbach's alpha is used in this study to assess the internal consistency of the research instrument, which is developed questionnaire. Cronbach's α (alpha) is a coefficient of reliability used to measure the internal consistency of a test or scale; it resulted as a number between 0 and 1. As the result approaches to 1 the more is the internal consistency of the items, which means all the items measure the same variable.

Table 3.2: Reliability Tests

Average interterm covariance:	.7319028
Number of items in the scale:	7
Scale reliability coefficient:	0.8574

Source: Stata output result (2021)

Thus, to test the reliability of the instrument, Cronbach alpha relating to all dimensions was computed. It is recommended that the value of Cronbach 's alpha around 0.8 is good. The overall alpha values in the study is 0.8574 Thus, the internal consistency of the instrument is sustained. Since the concepts are previously applied and tested, content validity is assumed.

3.5.2 Validity of Research

In the context of qualitative research, the validity of the research refers to the 'appropriateness' of the measures used, accuracy of the analysis of the result and generalization of the finding (Saunders et al, 2015). According to Maxwell (1992), descriptive, interpretive, and theoretical validities are the most important way to measure the validity of the study. According to Maxwell, 1992 the descriptive study related to the 'factual accuracy' of the empirical data collected (Ibid.). It related to how correctly and accurately that conducted in the study will be reported. In order to ensure the quality of this research design content of the research instrument were checked. The content validity was verified by the advisor of this research who looks in to the appropriateness of questions and the scales of measurement. Group discussion with other researchers was also conducted since it is another way of checking the appropriateness of questions. This was done to find out whether the developed instruments measures what it was meant to measure and also to check the clarity, length, structure of the questions.

3.6 Ethical Consideration

In undertaking any research, there is an ethical responsibility to do the work honestly and with integrity (Adams et al, 2007:35). In light of this view, I am treated any information get from any individual confidentially without disclosing the respondent's identity, and try to open minded as

possible and express opinions as they are given. The literatures consulted in this study are acknowledged appropriately.

CHAPTER FOUR

4. DATA ANALYSIS AND INTERPRETATION

The primary data from employee of ESLSE and customers of ESLSE were gathered using questionnaire and interview for each. in all, 120 completed questionnaires were collected from 163 the response rate was 73% percent. According to Babie (1979), the return or success rate 50% is ‘adequate’; 60% response rate is ‘good’ and 70% rate or higher is ‘very good’.

4.1 The Demographic Characteristics of Respondent’s

4.1.1. Gender of respondent

The result shows on table 4.1 below that majority of the respondents are male. 42(68%) of the respondents were male and 20(32%) of the respondents were female for customer and 41(71%) of the respondents were male and 17(29 %) of the respondents were female for customer

Table 4.1 Gender of respondent

Gender	Customer		Employee	
	Freq.	Percent	Freq.	Percent
Female	20	32	17	29%
Male	42	68	41	71%
Total	62	100	58	100%

Source; own survey, 2021

4.1.2 Age distribution of respondent

The distribution of customer around 25(40.32%) of sampled respondents age ranges from 26 to 35 years, each age group of 36 to 45 and above 46 account 12(19.35%) and 5(8 %) respectively. The others are Employee age groups, which include 18 to 25 year, 26 to 35 years and above 46 years’ account 20(34.48 %), 26(44.82 %), 7(12.06) and 5(8.62) respectively for employee.

Table 4.2 Frequency Table for Age distribution

Age distribution	Customer		Employee	
	Freq.	Percent	Freq.	Percent
18-25	20	32.25	20	34.48%
26-35	25	40.32	26	44.82%
36-45	12	19.35	7	12.06%
Above 46	5	8	5	8.62%
Total	62	100	58	100%

Source: Primary Data (2021)

4.1.3 Education level of Respondent

Table 4.3 Frequency Table for education level

Education level	Customer		Employee	
	Freq.	Percent	Freq.	Percent
Certificate	4	6.45	5	8.62%
Diploma	25	40.32	15	25.86%
Degree	28	45.16	30	51.72%
Masters	5	8.06	8	13.79%
Total	62	100	58	100%

Source: Primary Data (2021)

According to the Table 4.3 above, the study involved different respondents with different level of education as follows, Certificate level, 4(6.45%) , Diploma level 25 (40.32%) of the respondents, those who were having Degree level of education were 28(45.16%) respondents and the remaining respondents were having master degree and above level were 5 (8.06%) for customer in accordance with the revealed data it showed that majority of respondents working at Ethiopian shipping and logistic service enterprise are having degree level followed by diploma level. However, those with certificate and master degree and above levels of education are few.

4.1.4 Work Experience of Respondent

Table 4.4: Work experience of respondent

Experience of respondent	Customer		Employee	
	Freq.	Percent	Freq.	Percent
Less than 2 years	15	24.19	9	15.51%
2-5 years	35	56.45	21	36.20%
6-10 years	10	16.12	25	43.10%
>15	2	3.22	3	5.17%
Total	62	100	58	100%

Sources: computed from own survey data, 2021

The year of work experience in the ESLSE as depicted in above; 24.19% or respondent has less than two years of working experience in a ESLSE, 56.45% or have 2-5 years of experience, 16.12% or has 6-10 years of experience, 3.22% or has >15 years of work experience for customer and 15.51% or respondent has less than two years of working experience in a ESLSE, 36.20% or have 2-5 years of experience, 43.10% or has 6-10 years of experience, 5.17% or has >15 years. The study intended to see how long the respondents have managed to survive in working with the Ethiopian shipping and logistic service enterprise.

4.2 DESCRIPTIVE ANALYSIS

4.2.1 Response about Staff competences

Table 4.5: Response about Staff competences

NO	Staff competences	Employee			Customer		
	Items	No	Mean	Std. Dev	No	Mean	Std. Dev.
1	ESLSE"s staff are having positive attitude towards their work	58	3.48	1.287	62	3.30	1.30
2	ESLSE"s staff have adequate to understanding to customers" needs and requirements	58	3.465	1.287	62	3.419	1.20
3	ESLSE"s staff are excellent at communicating with customers to ensure order processing	58	3.46	1.27	62	3.096	1.37
4	ESLSE"s staff have adequate skill of handling customer feedback	58	3.41	0.97	62	3.16	1.04
5	ESLSE"s staff have a good customer service approach to clients	58	3.36	1.35	62	3.35	1.31
	Average of mean		3.408			3.265	

Source: Primary Data (2021)

Here, according to best (1995), under the 5 point likert scale, the mean value falls 1.0-1.80=strongly disagree, 1.81-2.60=disagree, 2.61-3.40= neutral, 3.41-4.20=agree and 4.21-5.0=strongly agree.

With regard to item number 1, mean score 3.4 with standard deviation of 1.278=agree it is within the range 3.41-4.20=agree. It shows to indicate that respondents agree that the staff are having positive attitude towards their work. The respondents have less standard deviation value of 1.27, this indicate that there is less dispersion among respondent's agreement level or their opinion is having no much variations about the subject matter of item. Regarding to customer mean score 3.3 it's within the range of 2.60-3.40= neutral indicating that the respondent not agree regarding to ESLSE"s staff are having positive attitude towards their work.

Similarly, the items 2, of the questioner responded by respondents with higher level of agreement regarding to ESLSE's staff have adequate knowledge/understanding to customers' needs and with a mean score of 3.465.

With regard to item number 3, the result of this study shows that mean score 3.4 with standard deviation of 1.27; it is within the range 3.41-4.20= agree this implies that the respondents were agreed on the ESLSE's staff are excellent at communicating with customers to ensure order processing. With regard to item number 4, the result of this study shows that mean score 3.36 with standard deviation of 0.97; it is within the range 2.61-3.40= neutral, this implies that the respondents were not agreed on the ESLSE's staff have a good customer service approach to clients.

To summarize the above Table regarding to customer (from Average mean), the result of this study shows that average mean 3.265; it is within the range 2.61-3.40= neutral and it is not within the range 3.41-4.20=agree. this implies that the respondents were not agreed on the staff competence of ESLSE

4.2 .2 Analysis and Discussion on Logistics Performance of ESLSE

In this part of the study's report, analysis conducted on data gathered to assess the effect of logistics performance on service delivery of ESLSE based on the three dimensions of logistics performance as developed by Fugate et. al (2010) was presented and respondents were asked to indicate their level of agreement on a five point Likert response format ranging from 1(very low) to 5(very high).

Table 4.6: Descriptive Statistics for Logistics Efficiency

	Logistics Effectiveness	Customer			Employee		
NO	Items	No	Mean	Std. Dev	No	Mean	Std. Dev
1	Percent of orders shipped to customers from the primary location designated to serve those customers	62	2.516129	1.141497	58	2.655172	1.291697
2	Percent of orders shipped on time	62	2.790323	1.25629	58	2.844828	1.28147
3	Percent of shipments requiring expediting	62	2.596774	1.348462	58	2.603448	1.388419
4	Inventory turns per year	62	2.322581	.8641151	58	2.453488	.9030273
5	Average order cycle time (time in days between order receipt and order delivery)	62	2.737705	1.031207	58	3.137931	1.262805
	Average of mean						

Source: Survey Data, 2021

Table 4.5 shows the descriptive statistics of logistics efficiency dimension of logistics performance on service delivery of ESLSE based on arithmetic mean and standard deviation. It is based on the responses of sample respondents on their logistics performance on logistics activities for the previous fiscal year. It is taken in to account that numbers 1, 2, 3, 4 and 5 represent very poor, poor, neutral, good and excellent, respectively

In terms of percent of shipments requiring expediting, percent of orders shipped to customers from the primary location designated to serve those customers and inventory turns per year, the mean scores of the respondents were 2.65 by employee and 2.51 by customers respectively. This show that the activity taken by the enterprise is poor performance. Specifically, the sampled employee and customers seem show that poor efficient in their Percent of orders shipped to customers from the primary location designated to serve those customers performance for the previous fiscal year as poor.

Table 4.7: Descriptive Statistics for Logistics Effectiveness

	Logistics Efficiency	Customer			Employee		
NO	Items	No	Mean	Std. Dev	No	Mean	Std. Dev
1	Transportation Costs	62	2.677419	1.434632	58	2.689655	1.429107
2	Warehousing Costs	62	2.295082	.9720127	58	2.22807	.9452427
3	Inventory Costs	62	2.467742	.8818338	58	2.482759	.9030432
4	Sales in Birr	62	2.709677	1.35969	58	2.706897	1.38929
5	Logistics Costs	62	2.225806	.7771186	58	2.172414	.7524913
	Average of mean		2.468			2.455	

Source: Stata output result (2021)

Table 4.6 shows the descriptive statistics of logistics effectiveness performance of ESLSE based on arithmetic mean and standard deviation. It is based on the responses of sample respondents on their logistic actual performance based on the previous fiscal year experience. It is taken in to account that numbers 1, 2, 3, 4 and 5 represent worse, bad, neutral, better and best.

The mean of transportation cost show that 2.68 for employee and 2.67 for customers which is poor activity to the enterprise. Transportation costs and total logistics cost, the mean scores of the respondents were 2.68 and 2.17 for employee and, 2.67 and 2.22, bay customers respectively. These show that they rated ESLSE actual performance based on the previous fiscal year experience as poor activity. In terms of warehouse costs and inventory costs and the mean scores of the respondents were 2.228 and 2.48 by employee and 2.29 and 2.46, by customer of ESLSE respectively. These show that they rated ESLSE poor performance based on the previous fiscal year experience. These depict that sales in birr and logistics costs of ESLSE level are low. Furthermore, their costs associated with transportation for moving the goods to the customer is also high and evaluated as poor.

4.2.3. Response about Information and Communication Technology

The information management process is all about collection, storage, manipulation and use of customer data and information from all contact points to generate customer insight and make appropriate decisions. Here data repository systems, IT systems (both computer hardware and software), and analytical tools like customer profiling play a critical role.

Table 4.8: Information and Communication Technology

	ICT	Employee			Customer		
NO	Items	No	Mean	Std. Dev.	No	Mean	Std. Dev
1	ESLSE uses advanced computerized documentation systems to manage order processing	58	3.120	1.545	62	2.66	1.47
2	It is easy to access the ESLSE's systems to process your documents	58	3.068	1.374	62	3.161	1.28
3	It is secure to use ESLSE's systems by all customers at their convenience	58	2.568	1.3654	62	2.612	1.33
4	ESLSE uses state-of-the-art software to forecast and organize delivery schedules	58	2.620	1.196	62	2.548	1.12
5	ICT is facilitating service delivery process	58	3.172	1.28	62	3.112	1.25
	Average of mean		2.909			2.8186	

Source: Primary Data (2021)

Here, according to best (1995), under the 5 point likert scale, the mean value falls 1.0-1.80=strongly disagree, 1.81-2.60=disagree, 2.61-3.40= neutral, 3.41-4.20=agree and 4.21-5.0=strongly agree.

Given the above parameter, the mean value of the first item was 3.120 for customer and 2.66 for customer respectively it is within the range of 2.60-3.40=neutral, it implies that the respondents were not agreed about the given statement. This shows to indicate that respondents of ESLSE office were not agreed that the ICT uses advanced computerized documentation systems to

manage order processing. As depicted from reference number 2, the result of this study shows that mean score 3.068 with standard deviation of 1.374 for employee and mean 3.161 with standard deviation 1.28 for customer; it is within the range 2.60-3.40=neutral. This implies that the respondents were disagreed on it is easy to access the ESLSE's systems to process your documents.

In general, the Average means of ICT 2.909 for employee and 2.8 for customer; it is not within the range 3.41-4.20. This implies that the respondents were not agreed the ICT uses of logistic performance on service delivery. Strategy implementations of ICT in office usually fail due to inadequate budget allocation; this also highly affects the motive and effort of employees towards the fulfilment of the designed strategies. This finding is identical with the study conducted by : Teshome Alemayehu (2018).

4.3 The Econometrics model tests, results and analysis

4.3.1 ANOVA Tests

The F- ratio in the ANOVA tests whether the overall regression model is a good fit for the data or not. So, the table above shows that a combination of these independent variables appear as statistically significant predictors of logistic service delivery, $F(6, 113) = 192.68$, $p < .0000$ which is ($p < 0.05$). That is, the regression model is a good fit of the data.

Table 4.9 ANOVA test for regression model

Model	Sum of Squares	Degree of freedom	Mean square	F	Sig
Regression	179.883884	6	29.9806473	192.68	0.0000
Residual	17.5827831	113	.15559985		
Total	197.466667	119			

Source: Stata output result (2021)

4.3.2 Test the goodness of fit

This section measures the Goodness of fit of the regression line by applying the multiple coefficient of determination (R^2) and it also presents the regression result. This measures the

proportion of the total variation in the dependent variable „Y“ explained by the explanatory variables (the „Xs“) jointly (Gujarati D. N, 2008).

R^2 value shows the overall goodness of fit of the model. It shows what proportion of the variation in the dependent variable (logistic service delivery) is explained by the explanatory or independent variables. The adjusted coefficient of determination shows the degree at which, Information and communication technology (ICT), Distribution support, staff competence, of enterprises“ process and logistic efficiency can explain the logistics service delivery in ESLSE. The relatively high values of coefficients of determination (R^2) 91% indicate that sizeable portions of variance in endogenous variables are explained by the chosen independent variables. The table 4.8 below shows challenging factors adjusted coefficient of determination indicate that 91% of the variation in logistics service delivery can be explained by the independent variables. The remaining 9% of the variation is explained by other variables which are not included in this model.

Table 4.10: Summary of Regression output

Prob > F =	0.0000
R-squared =	0.9110
Adj R-squared	0.9062
Root MSE =	.39446

Source: Stata output result (2021)

Overall reliability and validity of the model was further enhanced by the Prop(F-statistic) value (0.0000) which indicates strong statistical significance within the population. Thus the overall test of significance because of the p-value was sufficiently low (less than 0.05).

4.3.3 Test of Multi-collinearity

The variance inflation factor (VIF) for the first-order factors of each second-order construct was then computed to assess multi-collinearity. VIF values greater than or equal to 10 would indicate the existence of excessive multi-collinearity and raise doubts about the validity of the formative measurements. As shown in Table 4.9, the tolerance values for the independent variables are quite respectable and the VIF values range from 1.11 to 7.62. The present findings indicate that, the variance inflation factor for all variables (6p“s) is significantly less than the cut-off point or

rule of thumb that is ten (10). Therefore, the researcher concluded that multi-collinearity is not a serious problem in the model.

Table 4.11: multi-collinearity test

Variable	VIF	1/VIF
ETERPRO	7.62	0.131249
LEFFICIEN	4.78	0.209199
STAFFCP	3.77	0.265192
LEFFECT	3.75	0.266776
DS	1.14	0.880671
ICT	1.11	0.901246
Mean VIF	3.69	

Source: Stata output result (2021)

4.3.4 Test for heteroskedasticity

One of the important assumptions of the classical linear regression model is Heteroscedasticity. As noted by Brooks (2008) Heteroscedasticity assumption states that the disturbances appearing in the population regression function are homoscedasticity; that is, they all have the same variance. The variance of each disturbance term u_i , conditional on the chosen values of the explanatory variables, is some constant number equal to σ^2 . This is the assumption of Heteroscedasticity, or equal (homo) spread (scedasticity), that is, equal variance (Gujarati, 2004). If the error term u_i does not have constant variance, it's said to be there is a Heteroscedasticity problem.

Table 4.12: Test for no heteroscedasticity

Breusch-Pagan / Cook-Weisberg test for hetero-skedasticity
Ho: Constant variance
Variables: fitted values of LSD
$\chi^2(1) = 13.84$
Prob > $\chi^2 = 0.0002$

Source: Stata output result (2021)

In the above table the error term u_i has constant variance because of P-value less than 1% so, it's said to be there is no problem of Hetero-scedasticity. Residuals have a constant variance, which signifies that there is no sign of heteroscedasticity.

4.3.6 Pearson's Correlation Coefficient

Regression is a method of estimating or predicting a value on some dependent variable given the values of one or more independent variables. In this study multiple regressions were employed. Multiple regression analysis takes into account the inter-correlations among all variables involved.

According to Phyllis and his associates (2007), inferences have a very important in management research. This is so because conclusions are normally established on the bases of results. Such generalization was therefore, be made for the population from the sample. They speculated that the person's product moment correlation coefficient is a widely used statistical method for obtaining an index of the relationship between two variable when the relationship between the variable is linear and when the two variable correlation are continuous. In this study person's product moment correlation coefficient was used to determine whether there is significant relationship between Information and communication technology (ICT), Distribution support, staff competence, enterprises" process variable with Logistic service delivery.

Table 4.13: Test for Correlation Coefficient

	STAFFCP	DS	LOEFFECT	LOEFFIC~N	ETERPRO	ICT	LSD
STAFFCP	1.0000						
DS	-0.0167	1.0000					
Significance	0.8560						
LOEFFECT	0.7187*	-0.1152	1.0000				
Significance	0.0000	0.2100					
LOEFFICIEN	0.7788*	-0.1358	0.8075*	1.0000			
Significance	0.0000	0.1393	0.0000				
ETERPRO	0.8510*	-0.0801	0.8436*	0.8755*	1.0000		
Significance	0.0000	0.3846	0.0000	0.0000			
ICT	-0.0168	-0.3026*	0.0665	0.0641	0.0451	1.0000	
Significance	0.8556	0.0008	0.4702	0.4868	0.6251		
LSD	0.9131*	-0.0388	0.7834*	0.8398*	0.9109*	0.1022	1.0000
Significance	0.0000	0.6736	0.0000	0.0000	0.0000	0.2666	

Source: Stata output result, (2021).

According to Patel (2009), correlation only ranges from -1 to 1. A Correlation of 0 means that the variables are not related. Appositive correlation indicates a positive relationship that means an increase in one variable leads to an increase in another variable); and while a negative

correlation indicates a negative relationship that means an increase in one variable leads to a decrease in another variable.

The table 4. above shows the relation between dependent variable (logistic service delivery) with independent variables. The relationship between staff competence and logistic service delivery is 0.9131 with 1% significant level that means an improvement in staff competence also improve the logistic service delivery. This finding is also supported by Kirriri (2015), that staff competence skills have great effect on the logistic service delivery within the organization. This study also found that staff competence and logistic service delivery have a positive relation. The relationship between staff competence, logistic effectiveness, logistic efficiency, enterprises process, with logistics service delivery is 0.9131, 0.9109, 0.8398, 0.7834 indicate a positive correlation respectively with 1% significant level that means an improvement in those challenging factors improve the overall logistics service delivery in ESLSE organization. The relationship is however weak with information communication (ICT).

4.4 The Estimated result of multiple regression output

Table 4.14 Multiple Regression result.

Variable	Coef.	Std. Err.	T	P>t
Staff competence	.491999	.0538063	9.14	0.000
Distribution support	.3610418	.0746633	4.84	0.000
Logistic effectiveness	.0240525	.0564876	0.43	0.671
Logistic efficiency	.103159	.0603872	1.71	0.090
ICT	.1252963	.0372253	3.37	0.001

Source: Stata output result, (2021).

The regression equation was: $LSD = -0.34535 + 0.49199\text{Staffcp} + 0.3610418\text{Ds} + 0.0240525\text{loeffect} + 0.103159\text{loefficien} + 0.0467523\text{Eterpro} + 0.1252963\text{ICT}$
Where; LSD = the dependent variable (Logistics Service Delivery)

Staff competence: The variable has a positive and is statistically significant at 1% level of significance. The coefficient from multiple regression model in the above table indicate positive

sign for this variable (β of 0.49199), which implies positive association between Staff competence and logistic service delivery. This shows that as the skill of Staff competence increases, logistic service delivery also increases by 49.19 percent. Since the statistic or p-value in some other statistical application (.000) is smaller than the chosen significance level (0.01 or 1 percent). The result indicates that setting all independent variables constant, then a unit increase in skill of Staff competence, leads to 0.49199 increase in logistic service delivery.

Distribution support: Transport management is the planning, controlling and decision making on operational area of logistics that geographically moved and positioned inventory. Because of its fundamental importance and visible cost, transportation had traditionally received considerable managerial attention and almost all enterprises, big and small, had managers responsible for transportation (Bowersox, et al., 2010). Transportation occupied one-third to two thirds of the amount in the logistics costs hence transport management influenced the performance of logistics system immensely (Bowersox, et al., 2010). Transport Management activities are significant in determining the logistics performance in service delivery since their respective p-values are less than 0.05. In addition, the regression result shows for every additional Distribution support of service delivery in ESLSE, keeping the effect of other repressors constant (ceteris paribus), the logistics service delivery rate on average increases by .3610418 units (birr per quintal). This increase is statistically significant at 1% as indicated by P-value 0.000 probability associated with this coefficient.

Information and communication technology: ICT system has some contribution to the efficient services of logistic services delivery. Therefore, this implies that the information and communication technology have a positive relationship with logistic service delivery and the that contributes the most to the logistic service delivery. This, therefore, implies with the development of ICT and with adequate logistical support (infrastructure), equitably distributed and efficient in the convenient centers most contribute to the dependent variable. Whereas a unit increase in ICT leads to .1252963 increase in logistic services delivery, statistically significant at 1% level of significance. On the other hand, the service coverage on ICT, capabilities, security, and safety, facilitation, and market access have become increasing over time as described by the general manager because the company has more availability to open social media and web-based access. The Electronic Data Interchange (EDI) simplifies the business procedure and contribute for the efficient service of multimodal transport operation. To this end, the EDI would be great

facilities however, as per the general manager this can only work if all worldwide ESLSE agents have this capability

Logistic efficiency: Similarly, the regression result shows that Logistic efficiency is the significant factor of logistic service delivery with a Beta value of 0.103159 statistically significant at 10% level of significance. That is, when a there is efficient use of Transportation Costs, Warehousing Costs, Inventory Costs we bring about 10% level of service delivery.

CHAPTER FIVE

5. CONCLUSION AND RECOMMENDATION

5.1 CONCLUSION

Methods of data analysis were descriptive statistics and econometrics, and the following conclusions were drawn based on the results of the study. The result indicated that majority of the customers were not satisfied with many of the service performances and also most employees evaluated the organization as poor on many performance indicators.

The system which was supposed to improve the service performance did not satisfied customers on majority of the performance indicators used in this study.

- The transportation practice of the enterprise increases logistics cost. Unsafe and late delivery, not achieving economies of scale and distance to minimize unit cost of transportation are the major problems drawn.
- Lack of developed tool to check customer satisfaction level in logistics activity and the customer service policy of logistics also a problem that come from dissatisfaction of customer in logistics activities.
- Ordering of items based on customer requirement is not considered in inventory planning. The inventory planning system of the company also not minimize the costs related to inventory like holding and ordering costs.
- Long import process of customs affects availability of items timely. This show that the overall practice has a negative impact on customers.
- The overall design of the warehouse is still poor to access items and not convenient to load and unload.
- The warehouse operators' skill to use computer and other technologies to perform.

- It is also specifically observed that ESLSE have not well performed in their practices of inventory control, order management delivery and orders shipped to customers from the primary location as well as average order cycle time.

5.2 RECOMMENDATION

As indicated in the conclusion part of this study, the major problems logistics performance practices were identified. Thus the enterprise should take correction actions to alleviate the problems related to logistics performance practices on transportation, customer service, inventory planning, warehouse management and communication technology. Based on the results of the study, the following recommendations are suggested for consideration:

- ESLSE need to focus on major logistics activities Import and export in order to improve and must accept modern technologies to increase capacity of import and export goods.
- The enterprise should work on transportation management to minimize costs incurred as it has a negative impact on profitability.
- To achieve economies of scale and distance to minimize the transportation cost per unit of items, the enterprise should apply maximum load of trucks and consider the route of the distance to deliver products to customers
- The enterprise should improve late and unsafe delivery of products to satisfy customers which helps them to retain and make customers loyal for the company by making available trucks to deliver products and use skilled human power in warehouse operation to improve service
- The enterprise should have any standard tool to check level of customer satisfaction to take corrective action based on the results from the tool.
- The inventory of the enterprise should consider the real demand and market consideration which benefit the customer by avoiding unnecessary inventory costs and exploit fulfilment of customer as it is based on customer requirement.

- The enterprise should design the warehouse in a such way to minimize damage and upgrade the knowledge of employees to use technology to improve service for their customers.
- As the enterprises multi-national and experienced in operating in different countries, it should show and practice its integration for sustainable economic development in the country

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Appendix

Result of regression output

Source	SS	df	MS			
Model	179.883884	6	29.9806473	Number of obs =	120	
Residual	17.5827831	113	.15559985	F(6, 113) =	192.68	
				Prob > F	= 0.0000	
				R-squared	= 0.9110	
				Adj R-squared	= 0.9062	
Total	197.466667	119	1.65938375	Root MSE	= .39446	

lsd	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
staffcp	.491999	.0538063	9.14	0.000	.385399	.5985991
ds	.3610418	.0746633	4.84	0.000	.2131203	.5089634
loeffect	.0240525	.0564876	0.43	0.671	-.0878596	.1359645
loefficien	.103159	.0603872	1.71	0.090	-.016479	.222797
eterpro	.0467523	.0300554	1.56	0.123	-.0127929	.1062975
ict	.1252963	.0372253	3.37	0.001	.0515463	.1990464
_cons	-.3453548	.1998801	-1.73	0.087	-.7413533	.0506437

Test of multi-collinearity

Variable	VIF	1/VIF
ds	7.62	0.131249
loefficien	4.78	0.209199
staffcp	3.77	0.265192
loeffect	3.75	0.266776
eterpro	1.14	0.880671
ict	1.11	0.901246
Mean VIF	3.69	

Test of heteroskedasticity

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

H0: Constant variance

Variables: fitted values of lsd

chi2(1) = 13.84

Prob > chi2 = 0.0002

Staff competence

Variable	Obs	Mean	Std. Dev.	Min	Max
st1	58	3.482759	1.287475	1	5
st2	58	3.465517	1.287123	1	5
st3	58	3.465517	1.273419	1	5
st4	58	3.413793	.9739499	1	5
st5	58	3.362069	1.359802	1	5

Variable	Obs	Mean	Std. Dev.	Min	Max
st1	62	3.306452	1.300551	1	5
st2	62	3.419355	1.208554	1	5
st3	62	3.096774	1.375544	1	5
st4	62	3.16129	1.043222	1	5
st5	62	3.354839	1.319423	1	5

summary statics

Effectiveness

Variable	Obs	Mean	Std. Dev.	Min	Max
obs	58	29.5	16.88688	1	58
st1	58	2.689655	1.429107	1	5
st2	57	2.22807	.9452427	1	4
st3	58	2.482759	.9030432	1	4
st4	58	2.706897	1.38929	1	5
st5	58	2.172414	.7524913	1	3

Variable	Obs	Mean	Std. Dev.	Min	Max
obs	62	31.5	18.04162	1	62
st1	62	2.677419	1.434632	1	5
st2	61	2.295082	.9720127	1	4
st3	62	2.467742	.8818338	1	4
st4	62	2.709677	1.35969	1	5
st5	62	2.225806	.7771186	1	4

Efficiency

Variable	Obs	Mean	Std. Dev.	Min	Max
obs	62	31.5	18.04162	1	62
st1	62	3.33871	1.26677	1	5
st2	62	4.435484	2.077364	1	9
st3	62	2.709677	1.441619	1	5
st4	62	3.193548	1.316213	1	5
st5	62	3.193548	1.278302	1	5
Variable	Obs	Mean	Std. Dev.	Min	Max
obs	62	31.5	18.04162	1	62
st1	62	3.33871	1.26677	1	5
st2	62	4.435484	2.077364	1	9
st3	62	2.709677	1.441619	1	5
st4	62	3.193548	1.316213	1	5
st5	62	3.193548	1.278302	1	5

