



**FACTORS AFFECTING LOGISTICS PERFORMANCE: THE
CASE OF SELECTED LOGISTICS SERVICE PROVIDERS IN
ETHIOPIA**

**A THESIS SUBMITTED TO ADDIS ABABA UNIVERSITY, SCHOOL OF
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ABSTRACT

Logistics is crucial to international trade because it links suppliers and customers. Therefore, enabling the delivery of the right product, at the right location, at the right time, in the right condition, at the right cost, and in the right quantity to the right consumer is essential to economic progress. In recent years, the global logistics industry has expanded dramatically, and logistics has also grown in importance as a component of the commercial economic system and a key worldwide economic activity. However, based on subsequent the World Bank's and other relevant agencies report the logistics performance of Ethiopia have been very low, does not show significant progress year after years and it is hampering growth of trade and manufacturing industries. The main objectives of this study were to identify the factors that affect logistics performance, specifically in the case of selected logistics service providers in Ethiopia where there head office is in Addis Ababa'. The study has empirically assessed the key areas which are sought to affect logistics performances. Relevant and related studies have been reviewed and it was made possible to understand the level performance and developments in the subject area. Therefore, suitable conceptual framework was taken out. A mixed type of research approach was followed to exploit the advantages of qualitative and quantitative methods. Using Cochran sample size determination technique used to draw the sample size was determined to be 115 while only 85 were able to be collected and used for the data analysis. Closed ended questionnaire was distributed to freight forwarding logistics service providers' employees who are at the top level of the respected companies. Both descriptive and inferential statistical techniques were used to analyze the data. To ensure that the data acquired were sufficient for drawing statistical inferences, appropriate tests such normality and multicollinearity were undertaken. The findings of the study indicated that the overall performance level of Ethiopian logistics companies was found to be low and determined that economic, technological, geography, infrastructure, management and political factors are determinant factor for logistics performance while human component has a negative and non-significant relationship with logistical performance, whereas legal, social, and operational aspects are positively and non-significantly associated. Therefore, it is recommended that concerned stakeholders can use the identified logistics performance factors to measure the level of the logistics sector performance and it can be used also for future research foundation in the Ethiopian logistics sector development.

Key Words: Logistics, logistics performance

CHAPTER ONE

INTRODUCTION

The study's background was discussed in relation to its goals in the first chapter, which was then followed by a statement of the issue and any unresolved research gaps. This chapter also included the broad and detailed objectives, which generates potential research topics. Following a discussion of the study's organization and description of important words, the study's scope and limits are presented.

1.1. Background of the Study

Because it connects suppliers and customers, logistics are essential to global trade. Therefore, enabling the delivery of the appropriate good at the appropriate time, place, condition, pricing, and quantity to the appropriate client is crucial to economic success. The global logistics business has risen significantly in recent years, and logistics has also gained prominence as a part of the commercial economic system and a significant global economic activity. Economic and productivity growth are accelerated by logistical activity. The competitiveness and employment potential of a nation are significantly influenced by effective logistics. In this sense, the operation of logistics systems is significantly impacted by dynamic market and environmental changes. Systems for logistics must be aware of its operations and procedures (Milan M Andrejić, 2012).

More crucially, the performance of logistics is largely determined by the reliability of the supply chain. Many shippers are prepared to pay more for a high level of certainty regarding the when and how of delivery. Additionally, developing nations have the greatest potential to lower trade costs through improved logistics performance, as well as reliable and predictable supply chains are made possible by good logistics (The World Bank , 2016).

Additionally, logistics companies are highly motivated to make predictable deliveries in both developed and developing nations. Traders and logistics service providers continue to have serious concerns about supply chain reliability. Consignees need a high level of assurance regarding the when and how of deliveries in a worldwide setting. The importance of this is far greater than the delivery time. Many shippers are prepared to pay more for certainty, which

frequently has a price. In other words, in addition to time and cost, supply chain predictability also depends on shipment quality (The World Bank, 2016).

For the supply chain to be more predictable and to eliminate avoidable delays, efficient border clearance procedures are essential. Governments must promote commerce while protecting the populace from detrimental activities such as health risks, crime, and terrorism in order to do this. It can be challenging for policymakers and authorities to strike a balance between boosting trade and serving the public interest, especially in countries with a track record of experiencing delays and unplanned costs more frequently (The World Bank, 2016).

Manufacturers and dealers already outsource a large portion of their fundamental transport and logistics operations to third parties in logistics-friendly nations so they may concentrate on their core businesses while managing more intricate supply chains. More shippers will outsource their logistics the more such cutting-edge services are offered at a fair price-cost ratio (The World Bank, 2016).

Consequently, the effectiveness of logistics depends on traders having access to reliable supply chains and reliable service delivery. As global supply networks get more intricate, so do the safety, social, environmental, and other regulations that apply to dealers and operators. Effective management and information technology (IT) solutions are necessary for high-quality logistics in both the public and private sectors. The ability to manage logistics systems is a crucial aspect of a country's competitiveness in the modern, global corporate environment (The environment Bank, 2016).

In this regard, the World Bank's Logistics Performance Index (LPI) provides the most comprehensive global comparison tool to evaluate how welcoming a country is to trade and transportation facilitation. By understanding and dissecting the components of trade and logistics performance, nations can improve the effectiveness of freight transit and pinpoint areas where international collaboration could help remove barriers (elebi, 2015).

Ethiopia's logistics performance status is not good, even increasing worse from the 2014 LPI report to the 2016 World Bank reports, according to numerous studies (The World Bank, 2016). One of them is the standard of logistics service delivery, among other things. The government-owned behemoth ESLE and extremely small private businesses that mainly specialize in

customs clearance or who just provide a little amount of value added services, including transit service, are the different performance groups that make up Ethiopia's logistics service providers.

Ethiopian logistics are defined by a lack of logistical infrastructure, which includes bad roads, old automobiles, complicated customs processes, a small fleet in terms of numbers and status, and insufficient warehouses in terms of numbers and capacity. Ethiopia imports and exports through the port of Djibouti, which increases logistics complexity and decreases efficiency. Ethiopia is a low-income, infrastructure-challenged nation with a landlocked status, which negatively affects its logistics performance. It is ranked 131 out of 160 nations in the World Bank's LPI overall (World Bank, 2022).

1.2. Statement of the Problem

Today's global economy is constantly evolving, and nations and businesses need to recognize that globalization is shrinking the planet. Therefore, businesses and nations need to have a great plan in order to compete in this environment of rapid change. Customers search for products that may better fulfill their needs than those of the competitors through effective and efficient logistical infrastructure in order to stay a loyal consumer. You get a competitive edge both domestically and internationally by developing a powerful and dominant logistics business. Modern markets for goods and services are quite dynamic and have a large number of participants. If a company wants to remain competitive, it must constantly evaluate its performance, pay close attention to it, and choose the best course of corrective action. Depending on the industries and types of systems, there are numerous different performances (Milan M. Andreji, 2012).

Organizations all around the world are choosing to outsource their logistical tasks to logistics service providers in order to focus more on their core business operations. These service providers are/should be certified to offer reliable, efficient services. Ineffective logistics services prevent businesses from competing successfully on the global market and prevent the country from achieving its strategic objectives.

According to (Fekadu, 2013)The Ethiopian logistics system, "is characterized by poor logistics management system and lack of coordination of goods transport, low level of development of logistics infrastructure and inadequate fleets of freight vehicles in terms of number and age,

damage and quality deterioration of goods while handling, transporting and in storage." Efficiency is another fundamental performance that is commonly employed. Efficiency is a key metric for assessing how well businesses are performing.

In order to highlight Ethiopia's performance gaps, (Tamirat, 2018) attempted to access the logistics performance of Ethiopia utilizing the World Bank LPI periodic reports data sources. "When compared to Germany, Ethiopia continues to score below 2.6, maintaining a position between 126 and 144 out of the 160 countries studied for the report. For the previous five evaluation periods, Germany had a score above 4.2, placing it top in the world. Despite the fact that their different economic circumstances are not identical, this is just done to emphasize how great the gap is between the two countries. In a 2016 World Bank study on the performance of logistics companies, Ethiopia was compared to sub-Saharan African countries and low-income countries. While the sub-Saharan and low-income group scored 2.4, Ethiopia scored 2.56 just slightly above the group average.

Additionally, he stated that Ethiopia is one of the countries with the worst performance on the World Bank's LPI metrics, which include infrastructure, service quality, timeliness, international shipment, and tracking and tracing.,

For countries wishing to boost foreign direct investment and enhance export performance, effective and efficient logistics performance is essential. Although not all aspects of the service are solely attributable to the service providers, the service in this regard exhibits excessive clearance and transportation delays, a lack of capacity on the part of the service providers (technical, financial, IT, human and material), and other critical aspects that are required of the service providers that are not as such satisfactory.

It is widely accepted that Ethiopian international trade has been having difficulties for a very long time despite the advances it has been making. The lengthy and expensive customs clearance procedure, the shoddy and disjointed logistics and transport services, and the underdeveloped warehouse and inspection mechanism are just a few of the factors that have hampered the sector (Berihun Mekonnen, 2015).

Two important players in the sector, the Ethiopian Revenues and Customs Authority (ERCA) and the Ethiopian Shipping and Logistics Services Enterprise (ESLSE), have been working to

improve their performance. Recent reforms at ERCA and the establishment of the Multimodal Transport System (MTS) by ESLSE are two of the most recent developments. However, many in the sector failed to notice any significant changes in how the industry as a whole functioned. Conflicts and poor performance have plagued new system debuts and improvements (Berihun Mekonnen, 2015).

Finally, it is anticipated that this thesis to contribute to the discovery and assessment of the key variables influencing logistics performance in the context of Ethiopian logistics service providers. Therefore, the goal of this study thesis was to access key factors that affect Ethiopia's logistics, including the quality of roads and telecom infrastructure, warehouse facility availability and capacity, port facility and capacity, alternative modes of transportation, intermodal transport like rail to road, sea to air, regulation factors, digital technology related factors, and financing related factors, with emphasis on the operating performance of selected logistical service provision.

1.3. Research Questions

The following research questions were addressed in the study;

- How Macro/external environmental factors affect logistics performance in Ethiopia?
- How Micro/internal environmental factors affect logistics performance in Ethiopia?

1.4. Objective of the Study

1.4.1. General Objective

In light of a number of issues that require immediate attention in order to improve Ethiopia's import and export performance, the primary goal of this thesis was to examine the effect of macro environmental and micro/internal factors affecting logistics performance from the perspective of selected Ethiopian logistics service providers.

1.4.2. Specific Objectives

The specific objectives of this research were;

- To assess how political, factors affect logistics performance of selected LSPS in Ethiopia.
- To assess how economic, factors affect logistics performance of selected LSPS in Ethiopia.
- To assess how social factors affect logistics performance of selected LSPS in Ethiopia.
- To assess how technological factors affect logistics performance of selected LSPS in Ethiopia.
- To assess how legal factors affect logistics performance of selected LSPS in Ethiopia.
- To assess how geographical factors affect logistics performance of selected LSPS in Ethiopia.
- To assess how infrastructural factors affect logistics performance of selected LSPS in Ethiopia.
- To access how human factors affect logistics performance of selected LSPS in Ethiopia.
- To assess how management factors affect logistics performance of selected LSPS in Ethiopia.
- To assess how operational factors affect logistics performance of selected LSPS in Ethiopia.

1.5. Significance of the Study

For the parties involved in import and export activities, such as freight forwarders, shipping firms, warehousing service providers, and generally the logistics service providers and users generally, the study is of major importance. The study's findings will benefit logistics companies by enabling them to identify areas for improvement in their performance. They will

then be better able to take corrective action to strengthen their capacity to compete in the global market with robust services while reducing costs. Additionally, it will assist these businesses in locating, assessing, and keeping track of the critical areas that will enable them to keep up the success rate of their logistical performance. The results will be useful to relevant government bodies that determine policy because they will help them comprehend the performance issues that now face the logistics service sectors so that they can make appropriate policy changes. Additionally, it is important for academic and scientific contributions to be cited, and it provides information that could be used in future studies..

1.6. Scope of the Study

The study focused on logistics service providers working in the freight forwarding sector, whether they were engaged in import or export activities, with reference to a number of internal and external macro environmental elements that could affect the functioning of the logistics system. The research was limited to identifying factors affecting logistics performance from the perspective of logistics companies in order to highlight major areas of concern for those organizations. Therefore, other pertinent parties and concept areas won't be addressed due to the restricted resources, such as time and money, available. As a result, the thesis places all of its attention on determining the variables that have the greatest impact on logistics performance when compared to the major players in the field.

1.7. Definition of Terms and Concepts

Logistics: - In order to satisfy customer needs, logistics is a part of the supply chain process that organizes, carries out, and controls the efficient, effective forward and reverse flow and storage of goods, services, and related information between the point of origin and the point of consumption, according to the Council of Logistics Management (CSCMP, 2018). A further definition of logistics is provided by (Lowe, 2002) as follows: Total concept covering the planning and management of the supply and transportation of materials/goods, etc., from initial source through production, assembly, packing, storage, handling, and distribution stages to final consumer. Physical distribution solely consists of transportation, while distribution is merely one aspect of logistics as a whole.

Logistics Performance: Logistics performance is a part of a bigger organizational performance, according to Chow (1994). According to Fugate (2010), the idea is made clear by emphasizing how positively organizational performance is impacted by logistical performance. Logistics performance is defined as the "ability to deliver goods and services in the precise quantity and at the precise times as required by the customers" (Green Jr. et al., 2008).

1.8. Organization of the Study

There were five chapters in this thesis. The purpose of the first chapter was to explain the nature of the second chapter's literature review sections, which evaluated pertinent material that was crucial to this study. The methodology section of the study was included in the third chapter. The presentation of data and a detailed examination of the study problem utilizing the chosen approach were covered in the fourth chapter. The study's summary, conclusion, and recommendation were found in the fifth and final chapter and were based on the findings.

CHAPTER TWO

RELATED LITERATURE REVIEW

The literature review concentrated on conceptual, theoretical, and empirical frameworks relating to the idea of performance, logistics performances, and logistics firms for logistical and organizational success.

2.1. Theoretical Literature Review

2.1.1. Theories on Logistics

While logistics' original goal was to deliver troops and weapons to the front lines of conflict in time for combat, it is today understood to be an essential step in the modern industrial process. In the late 18th and early 19th centuries, military operations were where the idea of logistics was originally developed. Prior to the 1950s, the logistics business was moribund. The managers engaged were primarily concerned with production, and prior to this time, industry logistics was considered a "necessary evil." In Lewis' 1956 study (Cited in Chang, 1998) on the role of air transportation in physical distribution, which emphasized the concepts of trade-off between inventory and transportation, the "total cost idea" was employed.

The Council of Supply Chain Management Professionals (CSCMP) defines logistics as The process of planning, implementing, and controlling procedures for the effective and efficient transportation and storage of goods, including services, and related information from the point of origin to the point of consumption, despite the fact that other authors have also provided definitions. The CSCMP's definition of logistics is the one that is most frequently utilized. This term encompasses all movements—internal, external, inbound, and outbound (CSCMP, 2018).

Logistics is defined as the planning, organization, and control of all activities in the material flow, from raw materials to final consumption and reverse flows of the manufactured product, with the goal of delivering good customer service, low costs, low capital commitments, and minimal environmental impact (Christopher, 2007).

Another way to define logistics is the procedures involved in getting the right product or service in the right quantity, in the right quality, in the right place, at the right time, and getting it to the right customer at the right price. Most of the time, logistics is seen as a useful technique for transporting goods between locations or offering services. The effectiveness of the system's architecture, which generates this kind of logistics, determines how reliable the operation will be. Logistics systems also contain extensive design and operations-related tasks including management, operation, and purchasing (Lieb, Wassenhove, & Millen, 2013) A product's life cycle includes planning, design, and development, operation, decommissioning, and scrapping.

Contrarily, (Matiwos, 2015) defined logistics as the auxiliary management activity that guarantees a more effective use of resources and adequate operation of logistical components throughout that life cycle. As a result, logistics has the ability to improve organizational performance through its processes when supported by cutting-edge technical solutions. The demand for efficient and effective logistics services has increased as a result of a noticeable increase in global trade. Meanwhile, the amazing growth in international trade has increased the need for effective and efficient logistics services.

Logistics are becoming more important and complex as a result of today's demands of the service-oriented economy, varied company activities, and the impact of various current IT. The integration of these logistical activities into enterprises will promote internal communication and avoid departments from setting conflicting goals, which will result in best logistics practices (Rui Mansido and Lus A. G. Coelho, 2014).

2.1.2 Factors of Logistics

According to Oginni B.O. and Adesanya A.S. (2013), business organizations do not operate in a vacuum but rather in a business environment where goods and services are produced and offered. They argued that a number of internal and external circumstances and elements together referred to as the "business environment" have an impact on the existence, growth, and advancement of company. The internal and external business environments are the two different categories.

He maintains that the firm controls its internal business environment, which can be impacted by elements such as policy, personnel, money, etc. Additionally, they claimed that external

business consists of variables that are outside an organization's control, such as government regulations, politics, and technology.

There is no one, widely accepted definition of what a "business environment" is; rather, it might refer to a task-specific or generic business environment, an internal or external business environment, or any mix of these. The literature on the subject that has been studied above can be used to support this conclusion. The macro-business environment, industry business environment, rivals, and market environment were all included in the classification of the business environment employed in this study (Johnson Gerry, 2005).

These are characteristics of the broad business environment that, in some way or another, touch almost every organization (Johnson Gerry, 2005). The macro business environment in which a firm operates can influence that firm's performance, with the degree of influence varied depending on how much the firm depends on the larger economy, claim (Litavniece L. and Znotia D, 2015). The PESTEL framework, which includes political, economic, sociocultural, technological, environmental, and legal elements, is used to assess the macro environment. Due to time constraints, the researcher only looked at a few of the political, economic, technological, and legal aspects of the external business environment.

2.1.2.1 Political Environmental Factors

The political environment is any local, national, or global political factors that may positively or negatively affect how well LSPs work (Wanjiru, 2013). It consists of security measures, immigration restrictions, and government subsidies for domestic carriers, among other things (Gerry Johnson et al., 2008). Political imperatives place strict requirements on logistics service providers, including the change of duties, paying employees the minimum salary permitted by law, preventing pollution, and other actions that protect clients, employees, the public, and the environment. However, several political initiatives are planned to benefit and safeguard the logistics sector. Politics in Ethiopia, including legislation, higher taxes, free trade agreements, political stability, and other factors, have an impact on logistics service providers.

2.1.2.2 Economic Environmental Factors

According to Gamble (2014), referenced in Liente Litavniece and Daina Znotina (2016), economic factors include the overall state of the economy, trade rates, inflation rates, labor unemployment rates, interest rates, the rate of economic development, per capita GDP, and trade deficits or surpluses. Logistics service providers base their strategy choices on economic considerations. Service providers need to be aware of financial indicators and components to help with marketing strategy and decision-making. For instance, it is possible that the logistics service providers will contemplate cost hikes if interest rates change..

2.1.2.3 Technological Environmental Factors

Gamel (2014) "Technological forces" refers to the rate of scientific development and the fastest spread of technology that have the potential to have a substantial impact on society, as mentioned in Litavniece L. and Znotia D. (2015). Due to their limited access to new technologies, Ethiopian logistics service providers are unable to innovate their performance or maintain their competitiveness. Due to technological problems, several logistics service providers are no longer competitive and unable to meet client expectations. The providers of logistics services must recognize the importance of technology advancement and the need to stay up with the times in order to preserve a competitive edge. Decisions regarding how to improve or implement new technical procedures must be made in order to suit client wants and preferences. The creativity and competitiveness of logistics service providers have been highlighted as being significantly influenced by information technology. IT's full potential may be realized if the labor force is equipped with the required skills and has access to high-tech infrastructure. However, Ethiopia's fast internet and technological infrastructure enable the bulk of logistics service firms to compete globally.

2.1.2.4 Legal Environmental Factors

The legal environment pressures that an industry within the business environment must abide by include labor laws, antitrust laws, regulations, occupational health and safety standards, and other laws of a country or belonging to a specific business environment (Litavniece L. and Znotia D, 2015). The lengthy processes and challenges launching businesses have an impact on Ethiopia's logistics sector in particular.

2.1.3 Industrial Forces

The task environment of a corporate organization may include broad elements known as industrial factors. According to economic theory, an industry is a group of companies that produce the same commodities or services. Managers of logistics service-providing enterprises must comprehend the Porter's Five Forces or competitive forces because they will have an effect on the profitability of their organizations (Johnson Gerry, 2005).

2.1.4 Logistics Performance

Both governmental and private players have an impact on the efficiency of the logistics industry, which has a significant impact on national income. To improve the efficiency of transportation systems, the standard of commerce, and the control of transportation, it is crucial to understand and deconstruct the components of logistics performance. LP is defined as the analysis of both effectiveness and efficiency in carrying out a task (Mentzer & Konrad, 1991). According to some academics, the LP statistic is used to evaluate the effectiveness and/or efficiency of a course of action (Neely, 2005). A multidimensional concept known as LP has been used to describe the level of efficiency, effectiveness, and differentiation associated with the execution of activities (Fugate et al., 2010). Researchers have historically had difficulty defining LP since organizations typically have several, conflicting goals. In the context of this study, efficiency is a measure of how economically the firm's resources are employed (Mentzer & Konrad, 1991; Neely, 2005). The product guarantee, availability, and fulfillment time are three crucial elements in LP effectiveness, according to (Langley and Holcomb, 1992, p. 25).

Additionally, they added differentiation, which they defined as the capacity to offer value for the customer through the specialness and distinction of logistical services, to the concept of effectiveness.

The importance of performance analysis at the logistical level was first established in the research of (Bowersox, 1996), which was cited in (Rui Mansido and Lus A. G. Coelho, 2014). They reported that measuring logistics performance consisted of a methodology for analyzing resources of the logistic function, with its main objectives being monitoring and controlling the logistics operations. Analysis of logistics performance has grown in significance in the field of

management science research after this initial phase. Even still, there is limited consensus among academics regarding the methods and results necessary to ensure the validity of this analysis.

According to (Robba, et al. 2008) cited in (Rui Mansido and Lus A. G. Coelho, 2014), practices, particularly in terms of performance analysis, are still at the stage of being studied by professionals and academics. However, logistics is widely acknowledged as a major determinant of business performance because it deals with physical, informational, and cash flow management.

2.1.5. Performance Measurement

To accurately evaluate how well the firm is operating, performance assessment is necessary; you must create some quantifiable measurements. Your metrics should be able to easily distinguish between your business processes' strong points and those that require improvement. The productivity of your business over a specific time period can also be assessed using performance measures. Measurement of performance is the first step toward control and, eventually, improvement. Something cannot be understood if it cannot be measured. You can't control what you don't comprehend, right? You cannot improve something you cannot control (Harrington, 1995).

According to Rose(1995), performance measurement activities involve a procedure that logs measurements, shows results, and elicits further action. The fact that "performance indicators are to a large extent domain specialized" is a difficulty is due to the performance measurement activities and processes (Lai et al., 2004). There is therefore no way to select a specific subset of signals. Therefore, the choice is usually customized to the organization, and corporate orientation is important. The literature on performance measurement in logistics currently available offers a wide range of potentially useful indicators.

There is a ton of literature about the logistic industry, including user-perspective reviews of the body of work and empirical studies based on surveys. However, it is still unusual. Because of the importance and complexity of evaluating logistics performance, scholars have created a number of performance measurement frameworks and models (Brewer and Spey 2000; Griffins, Golds, Cooper, and Closs, 2004). A concept proposed by Fugate et al. (2010) that logistics

performance is a multidimensional function of efficiency, effectiveness, and distinctiveness and that all three may and should be "pursued simultaneously" (Fugate, et al., 2010) has gained support from a number of other academics. Thus, the model provides a useful lens from which to compare the identified body of literature to the industry data in order to assess the fashion setting role of logistics scholars.

Logistics managers notably benefit from performance indicators, which are essential to the management of any firm (Griffis, Goldsby, Cooper, and Closs, 2007). Performance evaluation, according to Gunasegaram and Kobu (2007), enables logistics managers to obtain a continuous competitive edge by promptly and accurately notifying them of both their successes and shortcomings (Griffis, Cooper, Goldsby, and Closs, 2004). According to studies in the field of logistics performance measurement, which also supports the use of performance metrics, the effectiveness of logistical operations and capacity is correlated with improved organizational performance (Fugate, et al., 2010).

2.1.6. Role of Logistics Performance

As was already said, LP is essential to the organization's ability to achieve its goals. The evaluation is based on the amount to which the overall productivity and performance would represent LP and the degree to which the goal is accomplished (Mentzer & Konrad, 1991). Stabler (2002). As a result, LP assists in realizing the company's objectives and plans and assuring customer satisfaction (Kayakutlu & Buyukozkan, 2011). It is crucial to take the facilitation of trade and transportation into account while evaluating the strategic operational LP goals.

2.2 Empirical Literature Review

The World Bank has given the logistics performance issue a lot of attention. Since 2007, the World Bank has been compiling logistics performance indices for more than 160 countries. Using six key performance measurement variables, such as the efficiency of customs, infrastructure facilities, international shipment, and quality of logistics service, the World Bank has provided total countries LPI scores and ranks (The World Bank, 2016).

A work by Chow et al. from 1994 is a pioneer and worthy of attention for providing a detailed examination of the current literatures of logistics performance. With the aim of defining and measuring logistics performance, (Chow et al. 1994) have provided a condensed account of various research works on conceptualizing the notion of logistics performance with respect to their respective data collection methods, sources, and measures of logistics performance..

Mentzer & Konrad, 1991, analyzed performance measuring procedures from an efficiency and effectiveness standpoint, according to a quote from (Chow et al., 1994). It appears that Mentzer and Konrad have approached the problem of logistics performance as one that involves both fulfilling logistical goals and making sure that resources are used as effectively as possible in order to produce things or provide a service.

Byrne and Markham (1991) attempted to address performance indicators for a number of logistics-related variables by focusing on quality. A similar piece of work by the Nevem Working Group (1989) gave a thorough analysis of performance measures in logistics. According to (Mentzer & Konrad), 1991), who investigated efficiency and efficacy of several performance assessment methodologies, as referenced in (Chow et al. 1994). Mentzer and Konrad appear to have treated the issue of logistics performance as one that entails both achieving logistical objectives and making sure that resources are employed as effectively as feasible in order to create goods or render services.

By concentrating on quality, (Byrne and Markham, 1991) attempted to handle performance metrics for several logistics-related variables. An analysis of performance indicators in logistics has been published in a study of a similar nature by the Nevem Working Group in 1989. To define and further gauge performance with regard to logistics, (Gassenheimer et al., 1989) conducted an empirical analysis on data obtained from executives by postal survey. Based on this analysis, the length of base-line/in-stock product order cycle times, the manufacturer's performance in meeting promised delivery dates, the fill rate for base-line/in-stock items, advance notice of shipping delays, the manufacturer's accuracy in forecasting and committing to estimates, and the fill rate for base-line/in-stock items were all identified.

Effectiveness and efficiency are emphasized as essential components of logistics performance in the research that is currently available. They omitted a special logistical function, nevertheless,

which might have been listed among a number of logistical duties and then further assessed as a significant differentiator for improved organizational performance (Fugate, et al., 2010). The concept of logistics performance and its measurement appear to be challenging tasks. However, some logistical research literature has provided a conceptual model for "Logistics Performance." In a manufacturing and retail organization setting, it seeks to address the primary logistics processes and functions as well as their metrics (Fugate, et al., 2010).

2.3 Conceptual Framework of the Study

(Fugate, et al., 2010) examined the connection between organizational performance and logistics performance, concluding that logistics performance is multifaceted and dependent on the resources employed, in accordance with stated goals and results compared to rivals. In this respect, the authors proposed that evaluation of a group of logistic function activity characteristics, namely efficiency, effectiveness, and differentiation, should serve as the foundation for study of performance in logistics.

According to these authors, efficiency is a dimension related to the use of resources allocated to the logistic function, effectiveness can be defined as the extent to which objectives are achieved and differentiation is understood as the value that can be generated by the elements of customer service in relation to competitors.

According to Fugate (2010), the higher the quality of the joint work of human resource logistics, planning, and implementation of solutions to customers' requests, the fewer conflicts, redundancies, and customer complaints there will be. This will increase efficiency levels due to responsiveness (less time), permit lower levels of waste, and allow for lower invested capital levels, increasing logistics efficiency and the likelihood of meeting deadlines.

In this regard, Fugate (2010) developed the following conceptual model through empirical research to analyze the links between the various logistic performance factors and their effects on organizational dimensions;

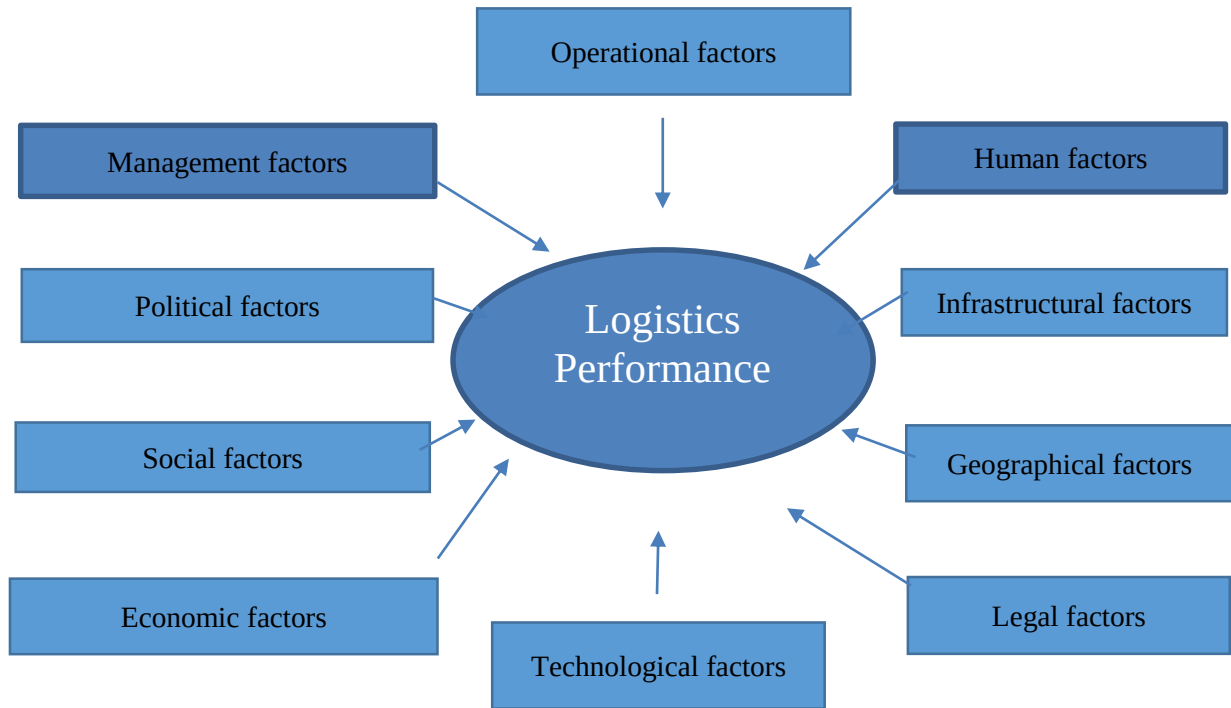


Figure 2.1: Conceptual model adapted and modified from (Fugate, *et al.*, 2010)

The conceptual design of the Fugate model involves two layers of examination. The authors anticipate that the study's conclusion will be found at the core level, which symbolizes the model's convergence for examining how logistics performance influences organizational performance. Additionally, it examines elements that shape lower-level logistic performance constructs. This process has been tested and proven with a number of significant companies that were selected at random. These authors' research shows a significant relationship between logistical performance and organizational effectiveness.

The Fugate model addresses a debate about a potential trade-off between the fundamental performance factors. The relationship between organizational goals and the concepts of effectiveness and efficiency has been covered by a number of authors. These authors advise business leaders to focus on one dimension when choosing a direction or goal because it seems that an increase in one dimension is accompanied by a decrease in another.

In contrast, Fugate (2010) found that companies that mix efficiency and effectiveness outperform those who chose just one of these dimensions. This conclusion makes it clear that businesses must be able to attain both performance metrics simultaneously rather than viewing them as mutually exclusive.

In order for firms to stand out in the contemporary market, these authors also emphasize the necessity for the logistics department to provide customers with value-added services in addition to efficiency and effectiveness. The main challenge is to combine the three constructs of logistics performance simultaneously while also being innovative because excellence in logistics is associated with improved organizational performance.

The study analyzed the logistic performance aspects in terms of macro environmental factors, internal factors, and logistic performance in order to close this gap in the literature. It achieved this with a focus on Ethiopia and logistics service providers generally. As a result, our study contributed to filling in the gaps in the body of prior research.

CHAPTER THREE

METHODOLOGY OF THE STUDY

A descriptive and explanatory research approach will be used to identify variables in this study that are primarily recognized as factors in the performances of logistics. The study narrowed its attention on a few important areas as part of its review of factors influencing logistics performance from the perspective of Ethiopia's logistics service providers, particularly the freight forwarders participating in the nation's import and export activities. The research made it difficult to get data from the entire population due to time, cost, and convenience. Therefore, a sampling technique were used to get information from the under investigation organization while attempting to retain its representativeness.

3.1. Description of the Study Area

Any organization, regardless of its industry manufacturing, agriculture, government or non-government service requires the services of logistics for the efficient and effective movement of goods, finances, and information from the point of origin to the points of consumption in order to meet the needs of the customer or user in forward and reverse moves (CSCMP, 2018). As a result, the study's main focus was on the logistical performance of Ethiopian logistics service providers with Addis Abeba as their headquarters.

3.2. Research Approach

The quantitative approach to research requires the generation of quantifiable data that can be subjected to rigorous quantitative analysis in a formal and rigid manner, whereas the qualitative approach to research is concerned with the subjective evaluation of attitudes, perspectives, and conduct. In this context, research is dependent upon the views and insights of the researcher, whereas mixed research methods are defined as combining quantitative and qualitative research procedures, approaches, concepts, or languages in a single study (Kothari, 2004). The majority of researchers contended that a study's optimal method should be chosen based on its objectives, available data, and related research issues. In order to benefit from both qualitative and quantitative approaches, the study was carried out utilizing a mixed approach, which can add to the overall effectiveness of the current investigation.

3.3. Research Design

According to their goal, the three categories of research are classified as exploratory, descriptive, and explanatory (Saunders, Lewis, and Thornhill, 2009). Among these, the researcher utilized both descriptive and explanatory study designs. Descriptive research methods were used to produce descriptive statistics that provide fundamental information, whereas explanatory research designs were used to explain and examine the relationship between independent variables. The sample for the study was chosen using a probability method, and the probability method itself was conducted using a purposive sampling technique. Additionally, the researcher used survey research as a way to get the desired data through well-structured questionnaires. In order to achieve its goals, the study was employ closed-ended questions. The data were assessed using descriptive and inferential analysis techniques utilizing the Statistic Package for Social Sciences (SPSS). Additionally, tables were employed to analyze the results.

3.4. Population and Sample Design

All logistics service providers, freight forwarders, and transit service providers with headquarters in Ethiopia and who also engage in import and export business and who are licensed and registered to provide logistics services in the country by the Ethiopian Maritime Affairs Authority (EMAA), including customs clearing agents, made up the study's total population. Target population identification, sampling frame selection, sampling technology selection, sample size determination, and sampling process execution are the steps that were used in the study, according to Malhotra et al. (2006) who identified five sample procedures that are interrelated and applicable to all aspects of the research.

3.4.1. Target Population

All logistics service providers, freight forwarders, and transit service providers operating in Ethiopia with headquarters in Addis Abeba were included in the study's total population, as were importers and exporters who held a license or registration from the Ethiopian Maritime Affairs Authority (EMAA) to conduct business as customs clearing agents. Consequently, according to EMAA, more than 162 service providers are active and registered to offer logistics services and customs clearing using a combination of all logistical activities or just some of them.

3.4.2. Sampling Frame

The operations units of logistics firms, which are in charge of directing and overseeing the day to day operations of the logistics business inside the organization, were served as the study's sample frame. The structured questionnaire used to approach these targets was done so.

3.4.3. Sampling Unit

In accordance with (Kothari, 2004), the researcher must choose one or more samples for his investigation. The operation senior personnel of the logistics businesses with more than a year of work experience in the field served as the study's sampling unit.

3.4.4. Sampling Technique

According to Saunders et al. (2007), the researcher utilized straightforward random probability sampling for the selection of respondents. For the operations senior staffs of the Addis Abeba logistics enterprises, the probability sampling method was adopted in this study.

3.4.5. Sample Size

According to (Cochran W.G., 1977) as stated in (Kothari 2004), there are numerous ways used in practice when choosing sample size for different kinds of research designs. As a general guideline, it may be said that the sample should be the ideal size neither too big nor too little.

The proper sample size frequently dictates the correct proportion and statistically significant sample size. An ideal sample size typically performs significantly better in terms of representation than a minimal or average size. In other words, the sample size doesn't have to be excessively large or small (Kothari 2004). A sampling technique model was applied to this investigation (Zikmund and Babin, 2010) to determine the sample proportion. According to Glenn (1992), a margin of error of 5% was taken into consideration while choosing the sample size for this investigation.

The predicted response rate should be about 50% or somewhat higher, according to (Lewis and Thornhill 2012), whereas (Patrick, B. 2003) quoting (Babe 1979) asserts that a return or success rate of 50% is "adequate," a rate of 60% is "good," and a rate of 70% or more is "very good."

According to prior research, 70% of the samples are predicted to be successfully collected or returned, with the remaining 30% having a chance of being defective or inactive. With a 95% confidence level, the sampling size was computed.

With this information, the sample size was established using the formula provided below by (Cochran W.G., 1977), as mentioned in (Kothari, 2004):

Where the sample population is p

Acceptable sampling error is q = 1-p. sample size, n

z = score level 1.96 at a 95% confidence level from a normal distribution table. the usual margin of error N=the entire population, 5%

Therefore, by using the above parameters the researcher has obtained the sample size of

$$n = \frac{162}{1 + 162(0.05)^2}$$

n=115respondents

3.5. Data Source and Type

The data were gathered from primary and secondary sources, utilizing questionnaires and reviews of relevant publications and papers, respectively, to gather the information required. The logistical activities impacted by different factors were the main focus of the questionnaire and reviews. Since the responders who represented the logistics firms were supposed to have a sufficient understanding of the language and be experts, the items were produced in English. As a result, there were no difficulties understanding the questions as was anticipated.

3.6. Data Collection Procedure

The historical method, experimental approach, survey method, descriptive method, and case study method were only a few of the approaches and methodologies used in the research. The

descriptive technique was chosen among them since it is believed to be the most appropriate for the topic at hand. In order to collect data, the researcher used a questionnaire.

3.7. Variables of the Study

Finding the factor that determines how well logistics performs is the study's goal. As a result, both dependent and independent variables are included in the study. The study's main variable, logistics performance, is stated as a function of ten independent variables. Both internal and external macro environmental elements and industry-specific logistics performance factors are included in these independent variables. Political, economic, social, technical, legal, geographic, and infrastructural variables make up the macro external factors. The operational, management, and human resource components of logistics performance make up the internal variables.

3.7.1 Model Specification

To determine the relationship between the dependent variable and independent dimensional variables, the study has employed the classical linear regression model. The general formula adopted for this study from (Cohen J., Cohen P, *et al*, 2003)was;

$$LSP = Co + \sum \beta_i X_i + \epsilon \dots \dots \text{Equation 1}$$

Where, LSP= Logistics performance

Co= the intercept of the equation

β_i = Unstandardized coefficient of the different independent variables

X_i = Different independent variables

E= error terms of the regression model

In terms of the specific variables of the study the regression model equation has been converted in to the following two expressions;

$$LSP = Co + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_{10} X_{10} + \epsilon \dots \dots \text{Equation 2}$$

Where, LSP= Logistics service performance (dependent variable)

Co= the intercept of the equation

$\beta_1X_1 + \beta_2X_2 + \dots + \beta_{10}X_{10}$ = Unstandardized coefficient of the independent variable

$X_1, X_2 \dots X_{10}$ = Independent variables of logistics performance

E= standard error of estimate

3.8. Method of Data Analysis and Presentation

In this inquiry, measurements that were both qualitative and quantitative were used. The data were evaluated using descriptive statistics including frequency, percentage, and mean. The regression and correlation tests were performed using inferential analytical techniques. To determine the link between the variables under investigation, correlations and regression analysis were carried out. Tables and figures were used to present the results.

3.8.1. Descriptive Statistics

Frequency, percentage, tables, mean score values, and standard deviation are all included in the descriptive portion of statistical processes. In order to determine if respondents were appropriate for this study, several significant demographic factors are described using frequencies, tables, and percentages.

Mean score values have been used to compare the logistics service's performance levels. For this, the mean score comparison approach from (Zaidotal & Bagheri, 2009, pp. 338–346) has been applied. The mean score values on a five point Likert scale are divided into three ranges by Zaidotal and Bagheri. Table 3 below displays the mean score ranges and their level of description.

Table 3.1: Mean score ranges & descriptions

Mean score	Level of description
<3.34	Low
3.4-3.79	Moderate
>3.80	High

Source: (Zaidotal & Bagheri, 2009)

3.8.2. Inferential Statistics

Inferential statistics have been applied in this study for a variety of reasons. Drawing conclusions about the population based on sample data is one goal of survey research. This study's assessment of Ethiopian Logistics performance is based on responses from 85 sample respondents. It is necessary to determine whether the sample mean accurately represents the population mean before drawing this conclusion. To achieve the goal, a one-sample t-test was carried out. Inferential statistics have also been used to perform the necessary tests to evaluate whether the data is appropriate for multiple linear regression analysis. Regression analysis has been done to see how well the independent variables have explained the variance in their respective variables.

3.9. Validity and Reliability test

Research's quality is evaluated using the words dependability and validity. They talk about the precision with which a technique, strategy, or test measures something. While reliability is concerned with a measure's consistency, validity is concerned with a measure's accuracy (Middleton, 2019). As a result, the accuracy and dependability of data gathering tools were evaluated.

Table 3.2: Reliability statistics

Dimensions	Cronbach's alpha	N of item
Logistics performance	0.734	5
Political factor	0.823	6
Economic factor	0.765	6
Social factor	0.714	7
Technological factor	0.826	8
Legal factor	0.715	5
Geographic factor	0.761	7
Infrastructural factor	0.709	6
Human factor	0.815	4
Management factor	0.725	5
Operational factor	0.734	5

Source: SPSS data output (2023)

3.10. Ethical Considerations

Letter of permission to conduct the research at ESLSE was issued by Addis Ababa University, School of Commerce. Anonymity and confidentiality of responders were assured during data collection. The research's goal and benefits were conveyed to the informants.

CHAPTER FOUR

RESULT, DISCUSSION AND INTERPRETATION

The presentation and analysis of the data gathered are contained in this chapter. Data was primarily gathered through questionnaires and secondary sources, and descriptive and inferential statistics were primarily used to discuss them. Statistical Package for Social Science (SPSS) was used to compile and analyze the data obtained through the use of questionnaires. The majority of the evaluation criteria used a five point Likert scale, with the range being 1-strongly agree to 5-strongly disagree.

By addressing the research objectives, the analysis of the study was organized and carried out to provide answers to questions. The primary goal of this chapter is to study and report statistics on factors influencing the performance of logistics service providers, particularly freight forwarders operating in Ethiopia with Addis Abeba as their headquarters.

Table 4.1: Summary of questionnaire distributed and collected

Description	Number of respondents	Respondents in Percentage (%)
Questionnaires distributed	115	100%
Questionnaires returned	92	80%
Questionnaires not returned	23	20%
Questionnaires returned but disregarded	7	6.08%
Questionnaires used for analysis	85	73.91%

Source Own Survey, 2023*

Only 20% of respondents failed to return the questionnaire, whereas the majority of respondents (80%) did so. Nine (7) of the total 92 questionnaires obtained were so significantly flawed that they could not be used in the study, and the researcher has consequently rejected them.

4.1. Demographic Characteristics of the Respondents

The respondents' demographic profile comprises the elements of gender, educational attainment, employment status, and work history. These demographic characteristics' distribution is shown in Table 4.2 below.

Table 4.2: Demographic Characteristics of the respondents

Variables		Frequency	Percent
Gender	Female	32	37.6
	Male	53	62.4
	Total	85	100.0
Age	30-35	42	49.4
	36-40	28	32.9
	Above 40	15	17.7
	Total	85	100.0
Education	Level 3-5	18	21.1
	BSC/BA	55	64.8
	MSC/MA	12	14.1
	Total	85	100.0
Job position	Medium Level	12	14.1
	Senior Level	30	35.3
	Management Level	43	50.6
	Total	85	100.0
Work Experience	1-2 Years	15	17.6
	3-5 Years	23	27.1
	> 5 Years	47	55.3
	Total	85	100.0

Source: Own survey 2023

According to the table above, 62.4% of respondents are men and 37.6% of respondents are women. This demonstrates that the respondents' group has a well-balanced distribution of genders. All responders are older than 30 years old when age is taken into account. This demonstrates that all respondents are mature, and they might have shown greater responsibility

in responding to the survey.

First degree (64.8%) and second degree (14.1%) sum up to 78.9% in terms of qualification, which accounts for a sizable majority of the qualified responses group. This suggests that the majority of survey respondents can understand the question relatively better. This fact would improve the data's quality in exchange.

Additionally, the table's position raw data reveals that 35.3% of respondents are at the senior level and 50.6% of respondents are in management. These two groups collectively account for 85.9% of the respondents. This assumption implies that it is familiar with how the Ethiopian logistics service industry operates. This suggests that such respondents might offer information that is more reliable.

The table also reveals that 55.3% of respondents have worked for at least five years, compared to 27.1% of respondents who have worked for at least three to five years. They should gain a substantial level of awareness about the issues that affect logistics performance as a result of this experience.

4.2. Ethiopian Logistics Performance

The main goal of this issue was to access how the important variables that have a substantial impact affects Ethiopia's logistics performance using quantitative survey data. This survey's findings are being used to draw statistical conclusions regarding the important variables and the level of logistic performance. To verify whether the sample accurately represents the population is necessary for such statistical inferences, nevertheless (Saha s., 1995).In order to determine the confidence interval for the population mean, a test was performed in this study. If the sample mean is within the 95% confidence interval of the mean difference, it is considered acceptable.

4.2.1. Mean Score Values of Logistics Performance

Table 4.3: Mean Score Values of Logistics performance and its factors

	N	Mean	Std. Deviation	Std. Error Mean
Political factor	85	4.047	.998	.108
Economic factor	85	3.341	1.468	.159
Social factor	85	3.435	1.392	.151
Technological factor	85	3.435	1.366	.148
Legal factor	85	20.94	.933	.101
Geographic factor	85	3.858	1.176	.127
Infrastructural factor	85	3.952	1.010	.109
Human factor	85	2.305	1.144	.124
Management factor	85	1.729	.917	.099
Operational factor	85	1.929	.923	.100

While the mean score values of the factor variables are used to describe the level of influence the variables have on the logistics performance, the mean score value for the logistics performance is used to define the performance level.

Further investigation of this fact indicates that, in addition to the success of the service providers, this unimpressive performance in logistics has an impact on other companies in other industries. According to (Bowersox, 1996), logistics services are crucial as a source of competitive advantage and as a vital component of business firm success. This viewpoint leads to the conclusion that other Ethiopian commercial enterprises' success and ability to compete in other industries may be negatively impacted by the poor level of logistics performance.

The mean score values of the predictor variables or components of logistics performance are also shown in table 4.4. Political, geographic, and infrastructural elements are seen to have mean score values that are greater than 3.80 and fall into the high level group. This demonstrates that those characteristics have a significant impact on the logistics service. However, this information is insufficient on its own to determine whether those elements have a good or negative impact on logistical performance.

Additionally, the mean score value for the social and technological elements variables is 3.43. This value falls within a moderate level range. The use of the mean score comparison technique suggests that those two factor variables have a moderate impact on how the logistics service is composed. The contribution of the variable management component to logistics performance has the lowest mean score (1.72) out of all the elements. This indicates that all other elements, with the exception of political, infrastructure, and geographic constraints, have a negligible impact on the effectiveness of Ethiopia's freight forwarding logistics services.

4.2.2. Correlation Analysis for Logistics Performance & its Predictor Variables

Depending on the type of data, correlation approaches vary. In this study, interval data were used. Therefore, Pearson's Product Moment Coefficient (r) is the appropriate statistical technique to evaluate the degree of connection between two interval variables. Item 8 below includes the bivariate correlation findings along with the data gathered on the criteria variable for freight forwarding logistics service performance and its predictor variables.

		Eth. Logistics performance	Political	Economic	Social	Technology	Legal	Geographic	Infrastructu ral	Human	management	Operation
Eth. Logistics Performance	Pearson Correlation	1	.701**	.684**	0.709	.861**	.021**	-.778**	.817**	.491**	.905**	.806**
	Sig. (2-tailed)		0	0	0	0	0.866	0	0	0	0	0
political	Pearson Correlation	.701**	1	.635**	0.052	.604**	.379**	.423**	.641**	.481**	.680**	.614**
	Sig. (2-tailed)	0		0	0.587	0	0	0	0	0	0	0
Economic	Pearson Correlation	.684**	- .635**	1	- 0.035	.560**	.334**	.325**	.542**	.482**	.588**	.501**
	Sig. (2-tailed)	0	0		0.711	0	0	0	0	0	0	0
Social	Pearson Correlation	0.709	0.052	-0.035	1	-0.056	0.034	-0.061	0.026	-0.061	0.009	-0.088
	Sig. (2-tailed)	0	0.587	0.711		0.558	0.723	0.524	0.783	0.52	0.927	0.356
Technology	Pearson Correlation	.861**	- .626**	.560**	- 0.056	1	.325**	.614**	.764**	.836**	.881**	.751**
	Sig. (2-tailed)	0	0	0	0.516		0	0	0	0	0	0
Legal	Pearson Correlation	.021**	- .359**	.334**	0.034	.325**	1	.209*	.322**	.291**	.376**	.355**
	Sig. (2-tailed)	0.866	0	0	0.753	0		0.026	0.001	0.002	0	0
Geographic	Pearson Correlation	-.778**	- .423**	-.325**	- 0.061	.614**	.209*	1	- .579**	.456**	- .533**	.565**
	Sig. (2-tailed)	0	0	0	0.524	0	0.026		0	0	0	0
Infrastructu ral	Pearson Correlation	.817**	- .641**	.542**	0.026	.764**	.322**	.509**	1	.657**	.774**	.719**

	Sig. (2-tailed)	0	0	0	0.783	0	0.001	0		0	0	0
Human	Pearson Correlation	.491**	-.465**	.482**	-0.061	.836**	.291**	.456**	.637**	1	.762**	.598**
	Sig. (2-tailed)	0	0	0	0.52	0	0.002	0	0		0	0
management	Pearson Correlation	.912**	-.686**	.588**	0.009	.881**	.376**	.533**	.786**	.762**	1	.763**
	Sig. (2-tailed)		0	0	0.927	0	0	0	0	0		0
operation	Pearson Correlation	.806**	-.674**	.501**	-0.088	.751**	.355**	.565**	.718**	.598**	.763**	1
	Sig. (2-tailed)	0	0	0	0.347	0	0	0	0	0	0	
**. Correlation is significant at the 0.01 level (2-tailed).												
*. Correlation is significant at the 0.05 level (2-tailed).												

Logistics performance is positively and strongly correlated with seven of its predictor variables, including economic, technological, political, and infrastructural, when the relationship between the criterion variable and each of the predictor variables is taken into account. Operations, management, and human resource factors are statistically significant at the 0.01 level. On the other hand, the association between the predictor legal variable and logistic performance is small (0.021), positive, and non-significant ($p=.866$).

The spatial component has a detrimental effect on the effectiveness of logistics for freight forwarding, with a correlation coefficient of -0.778^{**} at the 0.000 level of significance. This link is quite robust and significantly inversely correlated. This research shows that freight forwarding logistics performance decreases as the influence of regional factors increases. The correlation coefficient $r=0.684^{**}$ between logistics performance and economic parameters demonstrates that this connection is advantageous and strong at a level of significance less than 0.001. This illustrates that when economic component influence increases, logistical performance increases.

The coefficient of correlation between logistics performance and technology is $r=0.861^{**}$. This means there is a positive relationship between these variables at a level of 0.01. It can be then concluded that logistics performance increases as the influence of technological factor increases.

The predictor variable human factor and logistics performance have a small but substantial positive link, as shown by the coefficient of correlation ($r=0.491^{**}$). Thus, it can be said that the influence of human factors on logistics performance increases.

Moreover, the predictor variable logistics performance has a positive and significant relationship with the predictors social factor ($r=0.709^{**}$), infrastructural factor ($r=0.817^{**}$), political factor ($r=0.701^{**}$), management ($r=0.912^{**}$), and operation factors (0.803^{**}). This means logistics performance increases as the influence of political, infrastructural, social, management and operation factors increases.

4.2.3. Regression Analysis for Freight Forwarding Logistics Performance

This study used a linear regression model to determine the pertinent predictor variables that have an impact on the performance of logistics. However, it is required to perform a linear regression analysis before deciding whether the data are suitable for regression analysis. To make sure the data fits a conventional linear multiple regression model, two main diagnostic tests are run in the first section of this article. The results of tests for multicollinearity and data normality are listed below.

4.2.3.1. Normality Test for Logistics Performance

Normality test is conducted to check whether the data is normally distributed around the regression line. This study used a numerical that is performed with help of SPSS software. The SPSS print out of the normality test result is presented in table below.

Table 4.4: Normality Test for logistics performance

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Political	.156	85	.201*	.966	85	.871
Economic	.161	85	.201*	.951	85	.804
Social	.143	85	.201*	.966	85	.827
Technological	.157	85	.201*	.961	85	.892
Legal	.168	85	.201*	.946	85	.801
Geographic	.165	85	.201*	.964	85	.896
Infrastructure	.169	85	.201*	.958	85	.815
Human Recourse	.161	85	.201*	.959	85	.787
Management	.176	85	.201*	.967	85	.843
Operational	.189	85	.201*	.977	85	.818

The Kolmogorov-Smirnov test and the Shapiro-Wilk test, two well-known tests of normality, are shown in Table 4.6 above. The Shapiro-Wilk test was employed in this investigation to evaluate the data's normality. The logistic performance (criterion) was assumed in this test to have a normal distribution across all levels of the independent variable. The table demonstrates that the significance level of the Shapiro-Wilk test is larger than 0.05 for each independent

variable. The hypothesis tested were;

HO: The distribution of sample and population is not different.

H₁: The distribution of sample and population is not different.

Therefore, the null hypothesis is accepted. It is concluded that the data is normally distributed for each level of the independent variables.

4.2.4.2. Multi-collinearity Test for Ethiopian Logistics Performance

Predictor variables in a multiple regression analysis are required to be independent of one another and to only be connected to the criterion variable. Analysis of the study's data's multicollinearity level was done using an SPSS output.

Table 4.5: Multi-collinearity Test for Ethiopian Logistics Performanc

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Political	.261	3.829
	Economic	.542	1.847
	Social	.492	2.033
	Techological	.796	1.257
	Legal	.908	1.101
	Geographic	.446	2.243
	Infrastructural	.383	2.612
	Human	.911	1.098
	Management	.864	1.157
	Operational	.904	1.106

Dependent Variable: Logistics Performance

Low multicollinearity is characterized by tolerance levels near 1. According to table 4.7, the variable human factor has the highest level of tolerance (0.911) and the lowest variance inflating factor (VIF) (1.098). Of all the predictor variables, the political factor has the lowest tolerance level (0.261) and highest inflation factor (3.829). However, none of the tolerance thresholds are exactly 0. As a result, it can be concluded that the data have a suitable amount of multicollinearity for doing a regression analysis.

4.2.4. Regression Model Summary for Logistics Performance

In this section, it is revealed what proportion of criterion variability can be explained by all of the predictor factors. The relationship between the logistical performance criterion and the mean of all predictor variables taken together is measured by the multiple correlation coefficient (R), which is displayed in Table 4.8 below.

Table 4. 6: Regression Model Summary for logistics performance

Model Summary				
Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	.947 ^a	.926	.928	.157
a. Predictors: (Constant), operation, social, legal, economic, geographic, human, political, infrastructural, management, technology				

Table 4.8 shows that the squared multiple R and the adjusted squared multiple R are 0.926 and 0.928, respectively, while the multiple regression coefficient is 0.947. The fraction of the criterion's fluctuation that results from predictor variation is shown by the modified R square. The ten predictor factors are therefore found to be responsible for 92.8 percent of the variation in logistical performance. This indicates that additional predictor variables not examined in this study account for the remaining 7.2% of the criterion variable's variability. The residuals' standard deviation is represented by the standard error of estimation (0.157). Even though there is a less-than-perfect multiple correlation between the criterion and the predictor variables, the standard error of estimation is modest enough to not have an impact on the correlation's significance.

4.2.5. Regression Mode Viability

Table 4.9 represents the result of the analysis of variance represented by the regression equation being tested. The analysis of variance is used to detect whether the model is a viable one.

Table 4. 7: Analysis of Variance

ANOVA^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	52.516	10	5.251	138.184	.000 ^b
	Residual	2.857	74	.038		
	Total	55.373	84			
a. Dependent Variable: Eth. Logistics effectiveness						
b. Predictors: (Constant), operation, social, legal, economic, geographic, human, political, infrastructural, management, technology						

In a regression analysis, there are two sources of variation: the variance before the regression analysis and the variance after the regression analysis. The total sum of squares (55.373) is the sum of squared deviations from the regression line. Its two components are the regression sum of squares (52.516) and the residual sum of squares (2.857). Degree of freedom with respect to the number of variables and subjects. One criterion, ten predictor factors, and a total of 11 dimensions of variables make up the freight forwarding logistics performance in this study. The regression degree of freedom (10) is equal to the number of variables less one. The number of subjects (85) minus the number of variables (11) equals the residual degree of freedom (74) in the equation. Variances are represented by the regression's mean square terms (5.251) and residual (0.038).

The model's significance or viability is evaluated using the F-ratio (138.184), which compares the variance due to regression and the variance owing to residual. The ratio of mean square regression to mean square residual is what determines this. A significant model was found in the analysis of variance when the p value was less than 0.05, and this information is displayed in the final column of table 4.9, which also displays the likelihood that the estimated F-ratio was produced randomly. The p value for this inquiry is 0.000, as seen in the table. This p value is quite low, being less than 0.001. Thus, the usefulness or significance of this paradigm is proven.

4.2.6. Regression Coefficients for Logistics Performance

This section presents the analysis of each predictor variable individually by employing SPSS printout that provides the regression coefficient (β s) as well as their significance tests.

Table 4. 8: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	1.015	1.036		.980	.000
Political	.147	.211	.095	.696	.000
Economic	.079	.104	.019	.759	.015
Social	.093	.108	.106	.861	.392
Technological	.249	.158	.212	1.577	.000
Legal	.027	.124	.027	.220	.826
Geographic	-.109	.100	-.153	-.478	.016
Infrastructural	.134	.095	.036	1.410	.761
Human	-.033	.126	-.031	-.259	.796
Management	.155	.105	.176	1.486	.000
Operational	.063	.118	.063	.537	.593

Dependent Variable: Eth. Logistics performance

When all predictors are equal to zero, the constant value in table 4.10 indicates the value of logistical performance. The corresponding unstandardized coefficients (B) of the regression equation are shown in the table's second column. The logistic performance regression equation and its 10 predictors are expressed as follows using these coefficients.

$$LSPE = 1.015 + 0.249X_1 + 0.155X_2 + 0.147X_3 + 0.134X_4 - 0.109X_5 + 0.93X_6 + 0.079X_7 + \xi$$

Where LSP: is the predicted score for logistics service performance

X₁, X₂, X₃, X₄, X₅, X₆, and X₇ represents raw scores of technological, management, political, infrastructural, geographical, social and economic predictor variables respectively.

The standard deviation of the corresponding regression coefficients (s) is shown in the table's standard error column. In a t-test, the standard error is used to judge the significance of the

unstandardized B value. The various ratios of the unstandardized coefficient () to the standard error are represented by the t-values in the t-column.

It is impossible to compare the relative impact of predictor variables on the criterion variable using unstandardized coefficients. In order to examine the relative potency of predictors in impacting the criterion variable, regression equations employ standardized regression coefficients or beta weight (). The table in this analysis shows that the most significant predictor variable (= 0.212) was the technology element. Political factors (= 0.095), management factors (= 0.176), and geographic factors (= -0.153) are the next three and fourth most significant predictor variables, respectively. Whereas, legal factor (β = 0.027) is the least influential predictor. It is observed that technological factor is more than seven times more influential than legal predictor. In table13 the t-test values reused to determine whether the predictor is significant. The p values in the last column of the table indicate the probability of obtaining the computed t-value.

P is equal to 0.000, which is less than 0.001, for the technological factor. As a result, there is practically no probability that the t-value of 1.577 for the technological predictor will occur by accident. Therefore, it may be said that technology is a key predictor. The t-value of 0.759 for the economic factor has a (0.015) chance of occurring by accident. Since p (0.015) is less than 0.05, the economic element can be considered a significant predictor.

The table demonstrates that there is a (0.392) chance of obtaining the t-value of 0.861 by random when the social element is taken into account. We can infer that social component is not a significant predictor because 0.392 is more than 5%.

Less than 0.001 is the p value for the management factor (0.000). The possibility of getting the t-value of 1.486 by accident is less than 1%. Therefore, since 0.001 to 0.05, management factor is a significant predictor of logistics performance.

The political factor's t-value is 0.696. This t-value's chance of occurring by accident is between 0.000 and 0.001. Political factors are a crucial predictor of the logistics service performance for freight forwarding.

The likelihood of discovering the geographic factor's t-value of -0.478 by accident is (0.634). Therefore, since $0.016 < 0.05$, the geography component is a substantial predictor of logistical performance. The likelihood of randomly receiving the given value of the infrastructure factor (1.410) is 1%. Infrastructure component is a significant predictor of logistics service performance with a p-value of 0.001 to 0.05.

There is a 0.796 percent chance that the human resource factor's t-value (-0.259) will occur by accident. Human resource component is not a significant predictor because $0.796 > 0.05\%$. The t-value of legal factor is 0.226. There is also a probability (0.826) of getting this t-value by chance. Therefore, legal factor is a not significant predictor since $0.226 > 0.05$. The likelihood of discovering the t-value of 0.537 for the operation factor by accident is (0.593). Because $0.593 > 0.05$, the operation factor is not a reliable predictor.

The main goal of this study was to access the importance and influence of the factors affecting the of the logistics system in Ethiopia. In this section of the analysis, a response to this query has been provided. Therefore, factors related to politics, geography, technology, infrastructure, economy, and management have a big impact on how well logistical services perform. Out of these six pertinent variables, only the geographic predictor has a negative association with logistical performance; the other five predictors have a positive correlation. Additionally, it has been established that human, social, legal, and operational aspects do not serve as reliable predictions. Some of the important parameters discovered by this analysis are supported by an actual investigation done by (Nge D. et al, 2016)(Neg et al 2016). He reaffirmed the importance of operation variables, ICT elements, and management aspects in affecting how well logistics activities are performed. The study's findings showed that the performance efficacy of logistics services is not significantly influenced by economic, regional, or human resource considerations.

In contrast to this finding, the study acknowledges economic, regional, and human-related factors as significant influences on the performance efficacy of logistics. The study by Neg et al. (2016) did not, however, identify the specific kind of logistics service for which the discovered characteristics were crucial.

According to Tamirat J. (2018) Technology, human resources, management, and operational factors are important predictors of the Ethiopian freight forwarding logistics business. The criteria variable logistics performance efficiency is favorably correlated and significantly influenced by these four factors. However, it has been established that factors related to politics, the economy, society, law, geography, and infrastructure do not significantly affect how efficiently logistics operate.

Additionally, the study supported the notion that infrastructure, management, operation, and political, social, technological, and legal aspects play a considerable role in the efficacy of logistic service. The political predictor, out of these seven significant variables, has a negative correlation with efficacy, whereas the other six predictors have a positive correlation. It has also been established that economic, regional, and human elements do not serve as reliable forecasters.

However, the report made no mention of the impact or importance of these predictors on overall logistical performance.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. Summary

The issue of Ethiopian logistics performance was addressed in this study. Exploring the logistics service performance of the logistics service providers in Addis Abeba is the study's specific problem. Finding the elements that significantly affect logistics performance was the main goal. To pinpoint the internal and external factors that affect logistics performance, specific targets were created. To look into how well service providers perform in terms of logistics, a quantitative survey research was created. 251 businesses were found to be operating in Ethiopia and providing logistics services. From these target companies, 115 people in total were contacted by functional departments whose Addis Abeba-based head offices. Through the use of random sampling, a sample of 115 people, including some management members, was chosen to be the study's subjects.

Through the use of a survey questionnaire, respondents' quantitative data were gathered. Both descriptive and inferential statistical techniques were used to analyze the data. To ensure that the data acquired were sufficient for drawing statistical inferences, appropriate tests such normality and multicollinearity were undertaken. Additionally, the right statistical techniques were used for the analysis.

5.2. Respondents Characteristics

Respondents were workers at logistics service providers, including managers from several functional divisions. The majority of respondents had a degree and came from management and senior level jobs with five years or more of work experience. Respondents are anticipated to be very knowledgeable about issues related to the execution of logistics services.

5.3. Major Findings

The primary research topic focuses on the variables that impact the effectiveness of the logistics service. This section contains key findings regarding the variables influencing the performance of logistics service providers based on statistical tests and analysis techniques.

The topic of research questions is covered in this section. A one-sample test on the data of logistics service performance reveals that the mean difference for both logistics performance and its 10 factors is within their respective 95% confidence intervals. This shows that the statistics mean can serve as a representation of the parameter mean. Therefore, statistical inferences about the mean values of the population can be made using data from the sample.

According to correlational analysis, logistics performance is positively and significantly related to seven of its predictor variables, including economic, technological, political, and infrastructural, when taking into account the relationship between the criterion variable and each of the predictor variables. Operations, management, and human resource factors are statistically significant at the 0.01 level. On the other hand, the association between the predictor legal variable and logistic performance is small (0.021), positive, and non-significant ($p=.866$). While the performance of logistics for freight forwarding is inversely connected to the geographic component, with a correlation coefficient of -0.778^{**} at a significance level of 0.000. This association is very strong and has a significant negative relationship.

Normality and multi-collinearity tests have been run prior to regression analysis. The Shapiro-Wilk test of normality yielded results for logistics performance and each of its 10 variables with significance levels > 0.05 . The results of a multi-collinearity test showed that both logistics performance and its predictors had a sufficient level of tolerance to prevent multicollinearity issues in the data.

The model summary is covered in the first section of the regression analysis. According to the model summary, the adjusted R square had a significance level of less than 0.001 and was .0926. The F-Statistic (137.184), which was significant at a level of 0.000, was supported by the analysis of variance. Analysis of the regression coefficients revealed a substantial and positive relationship between the criterion variable and the predictor variables relating to the economy, technology, politics, infrastructure, and management. On the other hand, the predictor variable

Geographic factor and logistics performance have a negative and substantial relationship. Additionally, human component has a negative and non-significant relationship with logistical performance, whereas legal, social, and operational aspects are positively and non-significantly associated

5.4. Conclusion

Inadequate logistics service performance might be seen as mediocre logistics performance. Further investigation of this fact indicates that, in addition to the success of the service providers, this unimpressive performance in logistics has an impact on other companies in other industries.

The results of the correlation analysis showed that the ten predictors included in the model have a substantial association with the logistical performance. This fact suggests that the factors affecting logistics performance are covariant. The amount of influence one variable has on another, however, is not shown by the presence of covariance.

The findings of Shapiro-Wilk normality test implies that logistics service performance was distributed normally for each level of predictor variables. All tolerance levels, though, are not quite zero. As a result, it may be said that the data as a whole have a reasonable level of multicollinearity for doing a regression analysis.

According to the model summary, the adjusted R square had a significance level of less than 0.001 and was.0926. The F-Statistic (137.184), which was significant at a level of 0.000, was supported by the analysis of variance. Analysis of the regression coefficients revealed a substantial and positive relationship between the criterion variable and the predictor variables relating to the economy, technology, politics, infrastructure, and management. On the other hand, the predictor variable Geographic factor and logistics performance have a negative and substantial relationship. Additionally, human component has a negative and non-significant relationship with logistical performance, whereas legal, social, and operational aspects are positively and non-significantly associated.

5.5. Recommendation

The investigation showed that low performance levels were a defining characteristic of Ethiopian logistics, and it also helped identify the elements that influence Ethiopian logistics service. Therefore, the logistics industry must also raise its level of performance. There are two key reasons why the logistics sector needs to perform better. The first is so that logistics service providers can continue offering their services as long as they have a sizable competitive edge in the market. The second reason is that they must understand how their poor performance affects the prosperity and competitiveness of any other company enterprises in other industries that operate under the logistics industry's umbrella. The present service providers should pay particular attention to the aspects that affect logistical performance as they work to improve performance. Political, social, technological, geographic, infrastructural, management, and economic variables need to receive specific attention from industry stakeholders if logistics performance is to be improved.

Similar to this, service providers must concentrate on the aspects that influence efficiency in order to increase logistical performance efficiency. In this instance, technological, human, management, and operational aspects are the determining determinants of logistics performance efficiency. The service providers must pay close attention to the variables that affected performance distinction in order to improve Ethiopian logistics performance differentiation. In other words, they must pay attention to organizational, positioning, product, and image factors.

The logistics service provider's organization could assume the primary responsibility for performance improvement by working to change external issues including political, social, and legal factors. The industry's managers should shoulder the majority of the responsibility for internal factors that affect the performance of logistics services. In order to achieve aggregate logistics performance return at the industry and national levels as well as to maintain competitiveness in the global market, concerned parties must be aware of and concentrate on the already identified areas of attention as well as do well in identifying other critical aspects and improving them. Since this study's exhaustiveness was restricted, additional research must be done to identify the other determinant factors that have a substantial impact on logistics performance.

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Seek Wisdom, Elevate your Intellect and Serve Humanity



MASTER OF ART GRADUATE PROGRAM (MA IN LSCM)

Dear respondent

First of all I would like to forward my heartfelt gratitude and respect to you for administering this questionnaire honestly and responsibly. The questionnaire is designed to collect the necessary information to undertake a research on the topic “Factors affecting international logistics performance in Ethiopian freight forwarders” for the partial fulfillment of the requirements of the degree of Masters of Art in Logistics and Supply Chain Management at the Addis Ababa University

Enclosed is a brief questionnaire that asks a variety of open and close ended questions about your experience toward logistics factors in your respected firms. I am asking you to look over the questionnaire and, if you choose to do so, please complete the questionnaire and call me on the phone number provided below, so that I will come and take it on any time that is convenient for you.

Please do not write your name on the questionnaire. Your responses will not be identified with you personally, nor will anyone be able to determine which company you work for. Nothing you say on the questionnaire will in any way influence your company.

I hope you will take a few minutes to complete this questionnaire. Your participation is voluntary and there is no penalty if you do not participate.

If you have any questions or concerns about completing the questionnaire or about participating in this study, you may contact me at 0919141291 or at birihish@gmail.com.

Thank you in advance for your cooperation!

Notice: You are kindly requested to return back the questionnaire to the person assigned quickly with due attention after completion

I. Personal information/profile, Please select your choice

1. Gender a)Male ☐ b) Femal☐
2. Age: a) Under 25 b) 25-30 C) 31-35 d) 36 –40 e) Above 40
3. Educational level a) Less than or Equal to 12th Grade b)Level3-5 c) BSc/BA
d)MSc/MA e)PhD
4. Position in the company a) Junior Level b) Medium Level C)Senior Level
D) Management Level
5. Years of total work experience in the industry
a) 1-2years b)3-5 years c)>5years
6. What is your level of awareness regarding the factors of international logistics performance?
a) Very Low b) Low C)Medium D)High E) Very High

II. Company Information

1. For how many years has your company operated as freight forwarding industry?
a) <3years b) 3-6 years C)7-10 years D) > 10years
2. Does your company use any performance tracking systems? a) Yes b) No
3. How many employees are working in your company a) Less than 10 b)10-50 c) 51-500 d)>501

III. General Logistics Performance issues

1. Do you measure Performance of your log is tics activities a) Yes ☐ b) No ☐
2. The overall logistics performance of my company is well above industry average.

a) Strongly Disagree b)Disagree c) Neither d)Agree e) Strongly Agree

3. In general, our logistics performance is excellent

a) Strongly Disagree b)Disagree c) Neither d)Agree e) Strongly Agree

4. We are outstanding at performing our logistics activities

a) Strongly Disagree b)Disagree c) Neither d)Agree e) Strongly Agree

5. Which service does your company provide to its customers? (Chooses more than one if it applies)

a) Warehousing b)Transportation C) Customs clearance D) Shipping & Canvassing e)other,

6. Was your company set to be Efficient or responsive while establishing its strategy?

a) Efficient b) Responsive c) Designed to suit for the situation (Flexible)

d) No plan at all

V. Please rate the following table for major factors of logistics performance of the Ethiopian logistics service providers by a five point Likert scale ranging from:

1) Strongly disagree 2)Disagree 3)Neutral 4)Agree 5) Strongly Agree

Macro Environment						
Macro environmental Factors affecting logistics performance						
No	Description of item	Rate				
1. Political Factors		1	2	3	4	5
1.1	Government involvement in the logistics business positively affects the LSPs’					
1.2	Stability of political system positively affects LSPs’					
1.3	Strong health and safety legislation positively affects the industry					
1.4	Government prompt support to the industry positively affects LSPs’					

1.5	Taxation regulations affects the LSPs'					
2. Economic Factors		1	2	3	4	5
2.1	The general economic climate affects the LSPs'					
2.2	Interest rate affects the LSPs'					
2.3	Inflation rate affects the LSPs'					
2.4	Exchange rate affects the LSPs'					
2.5	Cost of living determines the LSPs'					
2.6	Globalization positively affects the LSPs'					
2.7	Availability of credit and finance passively affects the LSPs'					
3. Social Factors		1	2	3	4	5
3.1	Age distribution of the society affect the LSPs'					
3.2	Population growth rate affect the LSPs'					
3.3	Employment level determines the LSPs'					
3.4	Income level of the society determines the LSPs'					
3.5	Education and career trend determines the					
4. Technological Factors		1	2	3	4	5
4.1	Innovating and adapting ICT positively affects performance of international logistics to generate more revenues and higher profit margin					
4.2	Investing on ICT equipment like EDI, bar code reader, shipment tracking devices leads to enhance the international logistics service provision					
4.3	Networking with supplier, users and carrier companies through IT infrastructure ensues in improvement of logistics					
4.4	ICT helps the achievement of perfect order fulfillment and coordination cost reduction					
4.5	Emergence of new technologies leads to logistics					
4.6	Customs modernization and automation reforms positively affects LSPs					

5. Legal Factors		1	2	3	4	5
5.1	Fulfillment of licensing requirements will positively affects logistics					
5.2	Employmentlawsofthecountryhasdirectlypositiveeffectonthelogisticsserviceproviders					
5.3	Consistency and comprehensiveness of the law governing the industry positively affects the logistics service providers					
5.4	Stringent boarder management and transport regulations positively affects LSPs'					
5.5	The quality of international transport agreement positively affects LSPs'					
5.6	Deregulation of transport sector and allowing foreign LSPs' in the logistics service improves of LSPs'					
6. Geographic Factors		1	2	3	4	5
6.1	Proper location selection and channel cost ensures logistics					
6.2	Lead time is determined by location which impacts positively the LSPs'					
6.3	Proximity and availability of variety of ports ensures logistics positively					
6.4	Presence of the service provider in multi locations and customer segment increases LSP's market share					
6.5	Good geographical r/ship to neighbors & major trade routes impacts the LSPs					
6.6	Network complexity/geographic dispersion of firms' trading partners positively affects LSP'					

7. Infrastructural Factors		1	2	3	4	5
7.1	Suitable road condition, vehicles regular repair and maintenance can improve number of trips per period positively affects logistics service					
7.2	Quality of inland way (Rail and Road) determines logistics					
7.3	Quality & availability of port & public infrastructure facilities improves logistics					
7.4	Availability of varied optional energy sources determines logistics					
7.5	Existence and capacity of telecom service determines logistics					
Micro/Internal Factors						
8. Human Resource Factors		1	2	3	4	5
8.1	Human Resource training and development positively affects logistics					
8.2	Availability of Expertise in determines LSPs'					
8.3	The remuneration pattern of the industry determines the LSPs'					
8.4	Labour productivity contributes to the logistics performance					
9. Management and resource utilization factors		1	2	3	4	5
9.1	Maintaining delivery performance assures increased price trend					
9.2	Using young fleets and best fleet management practices leads to increased number of deliveries and ensures logistics					
9.3	Internal processing capacity leads to higher number of order					
9.4	Growing focus on core competencies positively contribute to LSPs'					

9.5	Capacity utilizations contributes to logistics					
9.6	Increased total loading capacity ensures logistics					
9.7	Onetime delivery performance increases logistics					
9.8	Developing a well-designed performance indicators positively affects LSP'					
10. Operational Factors		1	2	3	4	5
10.1	Increased number of deliveries ensures logistics					
10.2	Increased trip per period ensures logistics					
10.3	Perfect order fulfillment, minimum waste & responsiveness ensures logistics					
10.4	Increased number of orders ensures logistics					
10.5	Increased number of customers: Regular, new, number of profitable customers ensures logistics					
10.6	Continues improvement at a faster rate ensures logistics					
10.7	Rising customer expectations on superior logistical services ensures logistics					
10.8	Operational excellence can lead to plan fulfillment					
10.9	Process complexity/time and task compression in the logistics process ensures LSPs'					