



**DEBRE BIRHAN UNIVERSITY**

**COLLEGE OF BUSINESS AND ECONOMICS**

**EVALUATION OF LOGISTICS PRACTICE AND ITS CHALLENGES IN  
ETHIO TELECOM**

By: Sofonyas Basaznew

Advisor: Yohannes T. (Ass. professor)

Thesis submitted to Debre Birhan University in partial fulfillment of the requirements for the Degree of Master of Arts in Logistics & Supply Chain Management

June, 2021

Debre Birhan, Ethiopia

### **Statement of Declaration**

I, Sofonyas Basaznew, hereby declare that this thesis entitled “Evaluation logistics practices and its challenges in Ethio Telecom ” submitted by me for the award of the degree of Art in Logistics and Supply Chain Management, Debre Berhan University at Debre Berhan, Ethiopia, is my original work and it has never been presented in any university. All sources and materials used for this thesis have been duly acknowledged.

Name: Sofonyas Basaznew

Signature: \_\_\_\_\_

Place: Debre Berhan

Date of Submission: June, 2021

This master thesis has been submitted for examination with my approval as thesis.

Advisor Name: Yohannes T. (Ass. professor)

Signature\_\_\_\_\_

Date\_\_\_\_\_

**DEBRE BERHAN UNIVERSITY**  
**COLLEGE OF BUSINESS AND ECONOMICS**

**EVALUATION OF LOGISTICS PRACTICE AND ITS CHALLENGES IN  
ETHIO TELECOM**

**BY**  
**SOFONYAS BASAZNEW**

**APPROVED BY THE BOARD OF EXAMINERS:**

<hr/> <b>Dean of College</b>	<hr/> <b>Signature</b>	<hr/> <b>Date</b>
------------------------------	------------------------	-------------------

<hr/> <b>Internal Examiner</b>	<hr/> <b>Signature</b>	<hr/> <b>Date</b>
--------------------------------	------------------------	-------------------

<hr/> <b>External Examiner</b>	<hr/> <b>Signature</b>	<hr/> <b>Date</b>
--------------------------------	------------------------	-------------------

<hr/> <b>Advisor</b>	<hr/> <b>Signature</b>	<hr/> <b>Date</b>
----------------------	------------------------	-------------------

## Table of Contents

Statement of Declaration.....	i
Abbreviation .....	vi
Abstract .....	vii
List of Tables .....	viii
Acknowledgement .....	ix
CHAPTER ONE .....	1
INTRODUCTION .....	1
1.1 Background of the study .....	1
1.1.1 Background of Ethio Telecom.....	3
1.2 Statement of the Problem.....	4
1.3 Research Questions .....	6
1.4 Objectives of the Study.....	6
1.4.1 General Objective .....	6
1.4.2 Specific Objective.....	6
1.5 Significance of the Study .....	7
1.6 Scope of the Study .....	7
1.7 Organization of the Study .....	7
CHAPTER TWO .....	8
RELATED LITERATURE REVIEW .....	8
Introduction.....	8
2.1 Theoretical Literature .....	8
2.1.1 Definition of Logistics.....	8
2.1.2 The Role of Logistics practice.....	9

2.1.3 Importance of Logistics practice .....	11
2.1.4 Components of Logistics Management Practices.....	14
2.1.4.1 Customer Service.....	15
2.1.4.2 Inventory Planning and Management.....	16
2.1.4.3 Supply.....	17
2.1.4.4 Transportation.....	18
2.1.4.5 Warehousing.....	19
2.2 Empirical review.....	20
2.2.1 Logistics practice in Ethiopia .....	20
2.2.2 Logistics Practice in other countries.....	21
2.2.3 Logistics Challenges.....	23
2.3 Conceptual Framework of the study.....	25
CHAPTER THREE .....	27
METHODS OF THE STUDY .....	27
3.1 Research Design .....	27
3.2 Research Approach.....	27
3.4 Target Population.....	27
3.5 Sampling Technique and Sample Size.....	28
3.6 Data Source and Collection Procedures.....	29
3.7 Reliability and Validity testing.....	29
3.8 Methods of Data Analysis.....	31
CHAPTER FOUR.....	32
DATA PRESENTATION, ANALYSIS AND FINDINGS.....	32
4.1 Introduction.....	32

4.2. Response Rate .....	32
4.3. Respondents Profile .....	32
4.4. Analysis of Responses .....	34
4.4.1 Responses on Current Logistics Practices .....	34
4.4.2 Responses on Procurement Management Practices.....	34
4.4.3 Responses on Transportation Management Practices .....	36
4.4.4 Responses on Warehouse Management Practices .....	38
4.4.5 Responses on Distribution Management Practices.....	39
4.3.6 Responses on Logistics Challenge .....	40
CHAPTER FIVE .....	44
FINDINGS, CONCLUSION AND RECOMMENDATIONS.....	44
5.1 Introduction.....	44
5.2 Summary of Major Findings .....	44
5.3 Conclusion .....	45
5.4 Recommendation .....	47
5.5 Suggestion for Further Study .....	49
References.....	50
Questionnaire .....	53

## **Abbreviation**

SIM	Card Subscriber Identity Module Card
CDMA	Code Division Multiple Access
ERP	Enterprise Resource Planning
EVDO	Evolution Data Optimization
FDRE	Federal Democratic Republic of Ethiopia
IT	Information Technology
MOFED	Ministry of Finance and Economic Development
FDRE	Federal Democratic Republic of Ethiopia
SPSS	Statistical Package for Social Science

## **Abstract**

*Logistics is a vital area of management within most firms, whether they are manufacturing or service firms. Logistics is important because it creates value-value for customers and suppliers of the firm, and value for the firm's stakeholders. The purpose of this study was to assess Practices and Challenges of Logistics Management in Ethio telecom. The study used descriptive research design accompanied by mixed method approach to the research. Data for the study was collected using a self-administered questionnaire procedure, where the questionnaires were administered to the selected respondents through drop and pick later technique. A sample size of 138 respondents was drawn from the sample frame using simple stratified random sampling technique to promote the needs for efficiency and representativeness from various departments. Data was analyzed by aid of Statistical Package for Social Sciences (SPSS) version 20. The study will be useful in the academic circles as it will contribute immensely towards filling the gaps in knowledge in the area of service industry particularly in telecom as well it can be used as a base for future study. The logistics practices of the company were assessed using the five basic logistics practices; situation assessment, procurement, transportation, warehouse and distribution management practices. Besides, both internal and external challenges faced by the company during its business operations were identified. The findings of the study indicate that situation assessment, warehouse and distribution management are practiced to moderate and greater extents whereas the procurement and transportation practices need more emphasis. Challenges related to infrastructural condition, accessibility, security and restricted use of technology were identified. The researcher recommends provision of training and experience sharing platforms for employees, using various transportation optimization models, encouraging collaboration among various agent's actors and organizations, working with government to improve infrastructural condition in remote areas and using reliable means of transport.*

**Key words:** *Ethio telecom, Logistics management, Challenges*

## **List of Tables**

TABLE 4.1: PERSONAL INFORMATION OF RESPONDENTS.....	33
TABLE 4.3: DESCRIPTIVE ANALYSIS OF CURRENT LOGISTICS PRACTICES .....	34
TABLE 4.4: DESCRIPTIVE ANALYSIS OF PROCUREMENT MANAGEMENT PRACTICES .....	35
TABLE 4.5: DESCRIPTIVE ANALYSIS OF TRANSPORTATION MANAGEMENT PRACTICES .....	37
TABLE 4.6: DESCRIPTIVE ANALYSIS OF WAREHOUSE MANAGEMENT PRACTICES .....	38
TABLE 4.7: DESCRIPTIVE ANALYSIS OF DISTRIBUTION MANAGEMENT PRACTICES .....	39
TABLE 4.8: RANK ANALYSIS OF EXTERNAL LOGISTICS CHALLENGES .....	41
TABLE 4.9: RANK ANALYSIS OF INTERNAL LOGISTICS CHALLENGES .....	42

## **Acknowledgement**

Thank you God!

First and foremost, I would like to express my unconditional gratitude to Almighty God who provides me with everything I need. My sincere appreciation and respect go to my advisor Yohannes T. (Ass. professor) for his support and guidance throughout the research project. I would also like to express my deepest appreciation to my parents for their support and encouragement while doing this paper. Last but not the least; I would like to thank all the respondents for their contribution in the research project.

# **CHAPTER ONE**

## **INTRODUCTION**

Logistics management is one of the significant aspects of the success of the Telecom Company's because it creates value for customers and suppliers of the firm, and value for the firm's stakeholders. Logistics is also an engine that drives operation towards successful achievement of goals. This study is seeking to evaluate logistics practices and its challenges in Ethio Telecom.

This thesis indicated the general overview on the concept of logistics practice, brief introduction of Ethio telecom along with the challenges it faces, statement of a problem, the research questions, research objectives. The chapter also discussed the significance, and organization of study.

### **1.1 Background of the study**

The ability to transport goods quickly, safely, economically and reliably (logistics) is seen as vital to success of businesses, and to a nation's prosperity and capacity to compete in globalized economy (Fekadu, D. 2013). Logistics is an important component of supply chain management (Nyaberi, N.J. and Mwangangi, P. 2014.)The Council of Supply Chain Management Professionals (2007) defines logistics management as "part of Supply Chain Management that plans, implements, and controls the efficient, effective forward and reverses flow and storage of goods, services and related information between the point of origin and the point of consumption in order to meet customer " requirements."

Logistics has been described as being important for integrating the internal operations of an organization with the supply chain processes to increase customer satisfaction. All the supply management processes which can affect logistics and customer satisfaction and reported that a logistical value proposition and logistics have a big impact on customer satisfaction leveraging on order processing, inventory management, transportation, handling and packaging, as well as facility network design (Chiarini, A. 2015).

Logistics plays key role in supporting organizations as they strive for more efficient management systems as in the business practices, the inefficient logistics system together with the inefficient internal management would disable the organization to respond to the needs of customers with the lowest price at the shortest feasible time frame including the quality level which does not

meet customer expectation and would lead the organizations to the competitive disadvantage situation against their rivals (Nyaberi, N.J. and Mwangangi, P. 2014.)

Logistics is vital element to improve both profitability and competitive performance of a firm (Hajiesmaeili, A., Rahimi, M., Jaber, E. and Hosseini, A. 2016). Logistics has become a fundamental factor for the generation of competitive advantages and creation of value, through the planning, implementation and control of processes linked to physical flows, and the integration of processes along the supply chain (Alarcon, R. and Antun, P.J. 2013). On one hand, the efficient management of the key and supporting logistical processes allows reduce the costs related to the goods flow through the supply chain, the production and physical distribution costs, and especially the storage, inventories and transportation costs. On the other hand, the capacity for putting a product in the place and at the time where a demand exists, satisfying the clients requirements before its competitors can do (Alarcon, R. and Antun, P.J. 2013)

Ethio telecom the giant & the only telecom service providing company in the country have huge amount of resources to administer and almost all these resources are required to pass through different warehouses of the company. Some of these materials are very sensitive that they are expected to be available in the market safely, always, in mass and overall the country; like Voucher Cards & SIM Cards. Unless the materials issued swiftly, correctly as per orders and distributed, the effect on the market will be unbearable. Therefore, correct, smoothly & effectively functioning of logistics is mandatory.

According to (Janssen, 2010) in logistics management, unwise decisions create multiple issues, failed or delayed deliveries lead to buyer dissatisfaction, damage of goods due to careless transportation is another potential issue, poor logistics planning gradually increases expenses and issues may arise from implementation of ineffective logistics system. The same author suggested that to resolve these issues, organizations should implement best logistics management practices, companies should focus on collaboration rather than competition, good collaboration among transportation providers, buyers and vendors helps reduce expenses and also an efficient and safe transportation provider is vital to business success.

Regarding to the impact of logistics, (Rodrigues, 2005) identify logistics as one of the largest costs involved in international trade. (Thomas, A. S., and Kopczak, L., 2005) stated that logistic activities comprise procurement, transportation, tracking and tracing, customs clearance and

warehousing. Making logistics a critical and important factor, from a financial point of view, there is still a lot of room for cutting costs through operational efficiency and effectiveness.

Although there has been several research in the area of logistics management practices, little studies have been done to view it in the Telecommunication sector especially in Ethiopia. However, considering the issue of inventory, supply, warehouse, transport, internal customer responses and information flow management practices, there is the need for a focal study in this area as they are most often positively correlated to competitive advantage.

Therefore, this study evaluated logistics practices based on best logistics practices and recent trends in logistics that was find from different related literatures is essential for further improvement of logistics practice and to add knowledge in the field with respect to the telecom sector.

### **1.1.1 Background of Ethio Telecom**

Telecommunications service has begun in Ethiopia more than hundred years ago (Dubale, E.T. 2010.). Telecommunications service was introduced in Ethiopia in 1894 during the rule of Emperor Minilik II. The first major telephone line construction spanned a total distance of about 477 kilometers and connected Harrar, a major trade center in the eastern region, with Addis Ababa, the capital city. The line, which took only two years to construct, also interconnected small towns situated along the route. Immediately after the telephone line, a telegraph line was installed following the construction of the first and only railway line in the country, the Ethio-Djibouti railway. Within two years, an 880-kilometer north-south telephone line connecting Asmara the capital of Eritrea, to Addis Ababa was constructed and made operational in 1904.

Ethio telecom is the oldest Public Telecommunications Operator in Africa (Bogale, W. 2005). After the end of the war against Italy, during which telecommunication network was destroyed, Ethiopia re-organized the Telephone, Telegraph and Postal services in 1941. In 1952, the Imperial Board of Telecommunications (IBTE) was established by proclamation No. 131/52. The Board had full financial and administrative autonomy and was in charge of the provision and expansion of telecommunications services in Ethiopia.

The Imperial Board of Telecommunications of Ethiopia, which became the Ethiopian Telecommunications Authority in 1981, was placed in charge of both the operation and

regulation of telecommunication services in the wake of the market reforms. In 1996, the Government established a separate regulatory body, the Ethiopian Telecommunication Agency (ETA) by Proclamation 49/1996, and during the same year, by regulation 10/1996, the Council of Ministers set up the Ethiopian Telecommunications Corporation (ETC). According to (Federal Negarit Gazeta 2011) Ethio telecom established as a public enterprise on 29th day of November 2010 as per the council of ministers Regulation no. 197/2010.

Ethio telecom is a sole telecom provider which operates to satisfy the telecom needs of the society by providing world class telecom services and making possible optimum profit from the sector. This in turn requires the provision of essential customer service at lowest possible total cost. Logistics management can help to improve the company's financial and market performance through delivering its services in the desired time and quality at the right place and at a reasonable cost to the final consumers.

Nowadays, companies are faced with increasing competitive pressure, unpredictable market changes and dynamically changing regulations (Roth, M., Klarmann, A. and Franczyk, B. 2013). In a global world of business, organizations look towards some of the many options available in the form of opportunities and strategies to deal with the challenges that will deny them the chance of being market leaders. According to (Mundia, C., Langat, K.E and Lelegwe, S. 2015), organizations are adopting various strategies to ensure they remain competitive in the market. Enhancing logistics service capabilities will help to reduce the internal costs and improve competitiveness in the market and around the world (Boon pattarakan, A. 2012).

## **1.2 Statement of the Problem**

The growing importance of logistics arose from companies becoming globalized to gain access to new markets, realize greater production efficiencies, and tap technological competencies beyond their own geographical borders (Kilasi, L.B., Juma, D. and Mathooko, M.P. 2013). Customer focused logistics strategy stresses tailored logistics services to generate maximum customer satisfaction, market share, or performance, or to achieve business excellence (Shang, K. and Marlow, B.P. 2007)

Nowadays, companies are faced with increasing competitive pressure, unpredictable market changes and dynamically changing regulations (Roth et al., 2013). In a global world of business,

organizations look towards some of the many options available in the form of opportunities and strategies to deal with the challenges that will deny them the chance of being market leaders. According to (Mundia, C., Langat, K.E and Lelegwe, S. 2015) organizations are adopting various strategies to ensure they remain competitive in the market. Enhancing logistics service capabilities will help to reduce the internal costs and improve competitiveness in the market and around the world (Boon pattarakan, A. 2012).

Firms adopt different strategies to enhance their performance. According to (Bagshaw, B.K. 2017), logistics management can be one of those strategies crucial for firms to obtain higher performance. Realizing the importance of logistics management was critical for competitive advantage because operational performance had a positive impact on companies' financial performance (Tilokavichai, V., Sophatsathit, P. and Chandrachai, A. 2012). A key determinant of business performance nowadays is the role of the "logistics function" in ensuring the smooth flow of materials, products and information throughout a company's supply chains (Kilasi, L.B., Juma, D. and Mathooko, M.P. 2013).

In the case of ethio telecom, although it has the objective of being customer centric, offering the best quality of services, meeting world-class standards and building a financially sound company but logistics has not been considered as a key source to meet the objective and the logistics function is still largely regarded as a separate entity whose activities are distinct from the functioning of the rest of the company. In the effort to achieve its objectives, ethio telecom primarily focuses on developing and enhancing network and information system. As a result, the role of logistics not received full attention it deserves in terms of considerable influence that it can contribute to meet the company's objective. Therefore, study on evaluation of logistics practice and its challenges in ethio telecom will necessary to overcome such problems and to enhance the attention given to logistics as well as the role that logistics can play in achieving the objective of the company.

In addition, even if ethio telecom is a monopoly public enterprise and do not encounter stiff market competition till now a day's but the government plan to sell out 49% of ethio telecom share and two foreign telecoms will get license to operate independently in Ethiopia and the company expects to give full range of reliable telecom products and service for the public to encounter stiff market competition that will face in the future. This requires the company to be

efficient and effective in its operation and therefore logistics can play an important role in company's performance through the planning, implementation and control of processes linked to physical flows, and the integration of processes along the supply chain. However, there has not been a study conducted about the evaluation of logistics practice and its challenges in ethio telecom and this study was intended to answer some questions related to the extent of practical implementation and challenges of logistics practices.

### **1.3 Research Questions**

The study was addressed the following questions.

- What are the current logistics activities that practice by Ethio telecom?
- To what extent procurement management is practice at Ethio telecom?
- How warehouse management activities are practice at Ethio telecom?
- To what extent transportation management is practice at Ethio telecom?
- How the distributions & supply of telecom items are practice at Ethio telecom?
- What are the major challenges of logistics practices in Ethio telecom?

### **1.4 Objectives of the Study**

#### **1.4.1 General Objective**

The General objective of this research was evaluated logistics practices and its challenges in Ethio Telecom.

#### **1.4.2 Specific Objective**

The specific objectives of the study are:

- To describe current logistics activities that practice by Ethio telecom
- To examine whether procurement activities are well practice at Ethio telecom
- To identify whether transportation activities are well practice at Ethio telecom
- To analyze the implementation of warehouse management practices at Ethio telecom
- To analyze how distributions and supply of telecom items are practice at Ethio telecom
- To identify the major external and internal logistics challenges face Ethio telecom

### **1.5 Significance of the Study**

The study will be beneficial to various stakeholders; it can be a source of information to Ethio Telecom as it would be able to evaluate the company's logistics practices. It will also be important for practitioners and academicians who wish to study in other sectors or those who want to fill the gaps that will be seen in this research.

### **1.6 Scope of the Study**

The scope of the study was delimited to be specific to the evaluation of logistics practices and its challenges in Ethio Telecom located around Debre Birhan Area. To manage the sample size and methodological part, the study will consider the employees of Ethio Telecom working in the Debre Birhan regional office. These working units are organized under sourcing and supply chain division and facilities and fleet division and they are directly responsible for the logistics activity of the company. The dimension of the study will also cover the logistics practices of customer service practice, warehouse management practice, inventory management practice, transportation management practice, information flow management practice and supply management practice and its challenges.

### **1.7 Organization of the Study**

The paper will be organized in five chapters i.e. the first chapter includes an introduction section which consists of background of the study, statement of the problem, objectives, significance, scope, limitation of the study and ethical considerations. Chapter Two includes: present review of related literature. Chapter Three: presents research design and methodology the researcher employs to investigate the problem under study while data collected from respondents are also presented, analyzed, interpreted and discussed in the fourth chapter of the study. The last section chapter five of the thesis will contain summary of results, concluding remarks and recommendations used for the corporation.

## **CHAPTER TWO**

### **RELATED LITERATURE REVIEW**

#### **Introduction**

The Literature Review discussed about Logistics in detail from historical background of logistic to definition and role of logistics will be discussed in detail. Then it will explain logistic practices and the challenges of logistic management in apparel industry. Finally, the conceptual frame wok will be presented. The sources included in this review are collected from books, websites, article journals, past literature reviews and researches which are related to logistics and logistics practice in apparel industry.

#### **2.1 Theoretical Literature**

##### **2.1.1 Definition of Logistics**

The word logistic has originated from Greek word ‘Logistikos’ and the Latin word ‘Logisticus’ which means science of computing & calculating. During World War II logistics gained importance in army operations covering the movement of food, medicines, men & equipment across the border. Today it has acquired a broader meaning (Roth, M., Klarmann, A. and Franczyk, B. 2013)

According to (Bagshaw, B.K. 2017) Logistics is what happens in the supply chain. Logistics activities (customer response, inventory management, supply, transportation, and warehousing) connect and activate the objects in the supply chain. Next different definitions for logistics and its role will be discussed.

Logistics is defined as the process of planning, implementing and controlling the efficient, effective flow and storage of goods, services and related information from point of origin to point of consumption for conforming to customer requirements. (*Goor et al. as cited in Hsiao 2009*). On the other hand, logistics is defined in the Council of Supply Chain Management Professionals "Supply Chain Management Terms and Glossary (2010, 114) as:" The process of planning, implementing, and controlling procedures for the efficient and effective transportation and storage of goods including services, and related information from the point of origin to the point of consumption for the purpose of conforming to customer requirements.

The process of anticipating customer needs and wants; acquiring the capital, materials, people, technologies, and information necessary to meet those needs and wants; optimizing the goods- or service-producing network to fulfill customer requests; and utilizing the network to fulfill customer requests in a timely way'. Simply to say, logistics is customer-oriented operation management (Tilanus (1997). According to Chartered Institute of Logistics and Transport UK, (2012) Logistics is the positioning of resource at the right time, in the right place, at the right cost, at the right quality.

The recent definitions in logistics is that, it is a process of moving and handling goods and materials, from the beginning to the end of the production, sale process and waste disposal, to satisfy customers and add business competitiveness (Thomas, A. S., and Kopczak, L., 2005). According to Tseng, at el, 2005, Logistics is the process of anticipating customer needs and wants; acquiring the capital, materials, people, technologies, and information necessary to meet those needs and wants; optimizing the goods or service-providing network to fulfill customer requests; and utilizing the network to fulfill customer requests in a timely way. There are different factors which contribute to the growth of logistics management since 1990's; some of the factors are deregulation, competitive pressures, information technology, globalization and profit leverage.

### **2.1.2 The Role of Logistics practice**

The role of logistics is very high in the country's economy, a report by EBT, 2010 states that the performance of the logistics system had a major impact on the economy. It affected the cost structures and revenues of producers, their competitiveness in areas such as delivery times and product quality, and the responsiveness of producers to consumer requirements. World Bank reports that better logistics performance is strongly associated with trade expansion, export diversification, ability to attract foreign direct investments (FDI) and economic growth, in other words, trade logistics matter (World Bank, 2010).

For many firms throughout the world, logistics become an increasingly important value-adding process for a number of reasons. Lambert & Stock (2001) argues that good logistics practices can create a competitive advantage. More specifically they claim that best logistics practice

plays an important role in three critical elements of the marketing concept. These elements are customer satisfaction; integrated effort and company profit

Logistics management practices typically include inbound and outbound transportation management, fleet management, warehousing, supply/demand planning and management of third party logistics. To varying degrees, the logistics function also includes customer service, sourcing and procurement, production planning and scheduling, packaging and assembly. Logistics management is part of all levels of planning, execution, strategic, operational and tactical. It is an integrating function including marketing, manufacturing, and finance and information technology (Council of Supply Chain Management Professionals).

According to Janssen et, al., 2010, organizations should implement best logistics management practices in the company because in logistics management, unwise decisions create multiple issues. Failed or delayed deliveries lead to buyer dissatisfaction. Damage of goods, due to careless transportation is another potential issue. Poor logistics planning gradually increases expenses and issues may arise from implementation of ineffective logistics system. So companies should focus on collaboration rather than competition. Good collaboration among transportation providers, buyers and vendors helps reduce expenses. Also an efficient and safe transportation provider is vital to business success.

The logistics practice in the textile and apparel industry is marked by a climate of uncertainty due to rapid changes in trends and fluctuating customer demand because the industry often characterized by the volatile market, short lifecycles for the products and a high product variety (*Peterson J. 2016*). So the textile and apparel industry's logistic practice required different kinds of sourcing, production, and inventory management and the supply chain and logistics system must be integrated in order to reduce lead time.

As stated above, a good logistics practice allows a company to gain and maintain its competitive advantage and ensure maximum customer satisfaction.

### **2.1.3 Importance of Logistics practice**

Logistics is increasingly playing an important role in everyday business, and becoming a major factor of differentiation in the market, as referred to by (Deepa.G. Nair<sup>1</sup> Bert Enserink, 2005). In the current competitive climate there is strong pressure, on one hand, to operate in product and service differentiation, and on other hand, operate on the price factor allowing its reduction. As Melnyk et al. (2009) mention, logistics can manage these aspects, constituting a strategic or value-creation tool.

Logistics have facilitated a couple of activities in the past and still doing so today. Many production firms and the service sector have relied on logistics for their operational activities in order to attain their business or operational targets. The story is not different for many firms and businesses today since logistics is still a necessary ingredient in the production and provision of services (Christopher, 2005). Logistics is a means of tactically managing the buying, handling and issuing of supplies to the places where they are required.

When logistics management activities are better carried out, it leads to value addition and cost minimization. For many firms, a combination of value and cost advantages will enable them, emerge winners in present day keen competition. Thus logistics management practices which relate to areas such as transportation management and inventory management when effectively managed may lead to a higher revenue flow, cost structure improvements, and reduction in transportation costs.

The significance of logistics management had evolved from a more passive and cost minimization oriented activity to a key success factor for firm competitiveness (Stank, T.P., Davis, B.R. and Fugate, B.S. 2005). There was therefore an emerging consensus about the need for companies to handle logistics issues together with economic and business issues (Tuttle & Heap, 2008). It was therefore clear that logistics management played a big role in any economy and it is a critical contributor to the competitiveness of a country as well as organizations.

Logistics is important because it creates value-value for customers and suppliers of the firm, and value for the firm's stakeholders. Value in logistics is expressed in terms of time and place. Products and services have little or no value unless they are in the possession of customers

when (time) and where (place) they wish to consume them. To many firms throughout the world, logistics has become an increasingly important value-adding process for a number of reasons.

(Larsen, 2019), highlights some important logistics concepts which contributed significantly to efficient management of organizations. For instance, total system management, trade-offs, and cooperative planning. Thus, logistics in intra-organizational and inter-organizational functions is a prominent activity in companies, since it plays an important role in supply management, both internally and externally.

Good logistics management is increasingly recognized as the key enabler, which allows a company to gain and maintain its competitive advantage and ensure maximum customer satisfaction.

Logistics practice plays a significant role of adding competitive advantage to a firm in customer support and business excellence (Buyukozkan, et al., 2008). Effective logistics practice management provides the right product in the right place at the right time (Boon pattarakan, A. 2012).

Fugate, et al., (2010) in their study confirmed that, due to increasing awareness of logistics management implications in a firm performance and growing awareness of the benefits of leveraging logistics to increase customer value, measuring of performance of logistics had become a high priority.

Logistics practice plays an important role in three critical elements of the marketing concept which are customer satisfaction, integrated effort and company profit (*Lambert & Stock, 2001*). Green et al., (2008) address that logistic practices have a positive impact on business performance, namely in speed of delivery, the responsiveness and flexibility of delivery, and also influence marketing performance, which has a leverage effect on the average sales growth and business profitability.

In general logistics is important for the following reasons:

## **Costs are Significant**

According to the International Monetary Fund, logistics costs average about 12 percent of the world's gross domestic product. Depending on the particular industry, logistics costs may range from 4 percent of sales (pharmaceuticals) to over 30 percent of sales (food and food products). It has been noted that for many firms, after the cost of goods sold, logistics represents the highest cost of doing business.

The economic forces of change are further acting to alter logistics cost relationships and force careful re-planning of logistics systems around the world. Trade barriers are falling as free trade is encouraged in countries that previously had strictly managed economies. Tariffs are being eliminated to allow the free flow of goods across political boundaries, giving firms the opportunity to reposition their logistics networks for lower costs and higher customer service. Finally, the world economies seem to be on a wave of economic deregulation that will heighten competition. Since transportation is frequently a target for deregulation, logistics system costs will be affected.

## **Logistics is important to strategy**

Firms spend a great deal of time finding ways to differentiate their product offerings from those of their competitors. When management recognizes that logistics impacts on a significant portion of a firm's costs and that the result of decisions made about the supply chain yields different levels of customer service, it is in a position to use this information effectively to penetrate new markets, increase market share, and increase profits.

## **Logistics is a key to customer service**

Research over the years has shown that logistics variables are dominant in the minds of customers when they evaluate the service offerings for a product; see Sterling & Lambert (1989), Harrington & Lambert (1989), Lalonde & Zinszer (1976), Marr (1994), Baritz & Zissman (1983), Jackson et al. (1986). Frequently, one-half of the customer service variables are logistics related and delivery time typically ranks the highest among all service variables.

Since customers respond to a company's service offerings with their patronage, revenues are frequently determined by logistics variables.

Generally, the above arguments indicated that good logistics practice is increasingly recognized as the key enabler, which allows a company to gain and maintain its competitive advantage and ensure maximum customer satisfaction.

#### **2.1.4 Components of Logistics Management Practices**

The traditional assumption of the scope of logistics practices transportation and warehousing only is extended and include packaging, labeling, assembly, purchasing, distribution, manufacturing, finance, customs clearance, and other forms of customer service (Luchen, Theonotteboom, 2011).

The typical elements of logistic activities, such as customer services, sales forecasting, distribution communications, stock control, materials handling and ordering, amongst others, may give companies competitive advantages, especially when based on the exchange of reliable information between the links in the chain (Donald J. Bowersox, David J. Closs, M. Bixby Cooper, and John C. Bowersox 2013)

There are thirteen key logistics activities which are customer service, demand forecasting, inventory management, logistics communications, material handling, order processing, packaging, parts and service support, plant and warehouse site selection, procurement, reverse logistics, traffic and transportation, warehousing and storage that are involved in the flow of products from point of origin to point of consumption (Lambert & Stock, 2001 as cited in Anna and Konrad, 2008)

Frazelle (2002) and Kent (2001) states that logistics is comprised of five interdependent activities; customer service, inventory planning and management, supply Transpiration and warehousing.

Ismail, Halil and Mustafa, on their study on 2012 used the same logistics activities which are described by Frazelle and Kent.

#### **2.1.4.1 Customer Service**

In a competitive environment, customer service is an important means of differentiation from competitors and of customer loyalty. Setting the components of customer service and quantifying the level of service are means of keeping the company's competitive advantage.

The logistics of customer response includes the practices of developing and maintaining a customer service policy, monitoring customer satisfaction, orders entry (OE), order processing (OP), and invoicing and collections (Fair, M.L and Williams, E.W 1981).

The role of customer service is to provide time and place utilities in the transfer of goods and services between the manufacturer and the customer. In another form, the product has no value until it is in the hands of the customer. Availability is a complex concept, influenced by many factors that together form the customer service. These factors include the frequency of the delivery and its safety, the stock level and the time interval the order is released (Agrawal, D.K. 2007., 2007).

According to Adriana and Daniela, 2010, the purpose of the logistic system is to serve customers as well or better than the competition and at the same time to make profits. Customer service is the chain of sales activities and meeting customer requirements, which begins with receiving the orders and ends with the delivery of the products to customers, in some cases continuing with equipment maintenance services. Korpela et al. (1998) explained that companies should establish a customer service strategy and focus on designing an efficient logistics system to better serve customer requirements and sustain competitive advantage.

Frazelle (2002) argues that in today's just-in-time world the ability to respond to customers' requirements in ever-shorter time-frames has become critical. Most authors and practitioners (Reichheld, 1993, 1996 as cited in Jones, Fox and Fabrigar, 2010) agree that building and enhancing long-term relationships with customers generates positive returns to firms.

#### **2.1.4.2 Inventory Planning and Management**

Logistics of inventory management includes practices of forecasting, order quantity engineering, service level optimization, replenishment planning, and inventory deployment (Frazelle 2002).

Inventory is one of the most expensive and important assets of many companies, representing as much as 50% or more of a company's current assets will often be tied up in inventory according to the state of logistics report (2004). On one hand, a firm can try to reduce costs by reducing on-hand inventory levels. On the other hand, customers become dissatisfied when frequent inventory stock out, occur. Thus, companies must make the balance between low and high inventory levels. The study by Dimitrios (2008) suggested that too much inventory consumes physical space, creates a financial burden, and increases the possibility of damage, spoilage and loss. Martin (2011) described that many companies still think that the only way to service customers who require just-in-time deliveries is for them, the supplier, to carry the inventory instead of the customer.

Inventory management system is a set of techniques that are used to manage the inventory levels within different companies in a supply chain. The aim is to reduce the cost of inventory as much as possible while still maintaining the service levels that customers require. Inventory management takes its major inputs from the demand forecasts for products and the prices of products. With these two inputs, inventory management is an ongoing process of balancing product inventory levels to meet demand and exploiting economies of scale to get the best product prices. (Meng, 2006)

Successful inventory management involves creating a purchasing plan that will ensure that items are available when they are needed (but that neither too much nor too little is purchased) and keeping track of existing inventory and its use. Two common inventory-management strategies are the just-in-time method, where companies plan to receive items as they are needed rather than maintaining high inventory levels, and materials requirement planning, which schedules material deliveries based on sales forecasts, (Christopher 2007). Inventory availability is the most important aspect of customer service. Inventory carrying costs are typically the most expensive costs of logistics. It is very difficult to convert physical inventory

into a liquid asset, hence, inventory is a very risky investment. The goal of inventory management is to increase the financial return on inventory while simultaneously increasing customer service levels (Frazelle, 2002).

The study in Australian hospital logistics and supply chains by Vikram and Prakash (2012) found that application of collaborative arrangements between manufacturers and wholesalers/distributors would improve inventory management practices across the supply chains. (Kazim 2008) also confirmed that elimination of errors in inventory records is more crucial and important for successful logistics practices.

### **2.1.4.3 Supply**

Supply is the process of building inventory (through manufacturing and/or procurement) to the targets established in inventory planning. The objective of supply management is to minimize the total acquisition cost (TAC) while meeting the availability, response time, and quality requirements stipulated in the customer service policy and the inventory master plan (Meng, 2006)

Developing and maintaining a Supplier Service Policy (SSP), sourcing, supplier integration, purchase order processing and buying and payment are some of the supplies in logistics (Frazelle, 2002).

According to the study by (Fair, M.L and Williams, E.W 1981)on Ethiopian manufacturing industries supply practice; they found that most of companies have prepared a standard contract for all suppliers. However, it was common practice to ignore the contract and go to new buyers if they have got a price advantages. In relation to this they found also most of the respondent companies practiced price negotiation and direct purchase for local material from wholesaler and the companies used different supplier selection criteria such as the quality of material, price, delivery time, previous experience, and reliability of suppliers especially for international suppliers.

Supply influences a number of logistics-related activities, such as how much to buy and inbound transportation. With an increased emphasis on controlling materials flows, the supply function must be concerned with decisions beyond supplier selection and price (Council of

Supply Chain Management Professionals, 2006). According to Meng (2006), the overall objective of supply management is to minimize the total acquisition cost while meeting the availability, response time and quality requirement stipulated in the customer service policy.

#### **2.1.4.4 Transportation**

The key element and backbone of the operation in logistics management is transportation management system which joins the separated activities in the supply chain. Transportation occupies one-third of the amount of logistics costs, so it influences the performance of logistics systems hugely (Taylor, 2005)

Transportation is a basic element of the logistics activities which runs from vendors through to you, to your customers Frantisek (2003). Frazelle (2002) states, 'the objective of transportation as to link all pick-up and delivery-to points within the response time requirements of the customer service policy and the limitations of the transportation infrastructure at the lowest possible cost.' On the other hand, Tyndall and colleagues (1998) argues that the most significant advances in modern logistics practices have not been in cost reduction, but in improved processes to move goods and material between nations in a timely and seamless manner.

Geoff (2006) in his study argued that a well-established transport system in the logistical operations could lead to increased effectiveness, reduced operation costs and promotion of the firms' service value. An efficient transportation system is the most important economic activity among business logistics systems. About one third to two thirds of most organization's logistics costs are spent on transportation (Harriet, et.al 2013).

According to the investigation of National Council of Physical Distribution Management (NCPDM) in 1982 (Chang, 1988), the cost of transportation, on average, accounted for 6.5% of market revenue and 44% of logistics costs. So without well-developed transportation systems, logistics could not bring its advantages into full play. Ethiopian transport system explored that transport costs are very high in Ethiopia. For instance, in garment processing trade, overall transport cost cover 28 percent of the total value added. This is a high proportion compared to

the world average and Africa's average which are 6.1 and between 15 and 20 percent respectively. As per the stud of Bemnet (2004)

According to the World Bank Report (1991) efficiently organized flows of goods and information are only possible if there is a well-developed transport and communication infrastructure. The report also described that in sub-Saharan African countries, this infrastructure is poorly managed and maintained. Until recently about half of the region's paved roads and 70 percent of its unpaved roads were only in a fair to poor condition and required substantial repair.

There are two fundamental economic principles that have an impact on transportation efficiency: Economies of scale-decreased transportation cost per unit as the size of a shipment increases and Economies of distance-decreased transportation cost per unit of weight as distance increase. The goal from a transportation perspective is to maximize the size of the load and the distance being shipped while still meeting customer service expectations (M. Sreenivas, 2013) Therefore, transportation is the base for efficiency and economy in the business logistics and expands other functions in logistics system. In addition, a good transportation system performing in logistics activities brings benefits not only to service quality but also to company competitiveness. (Fair and Williams 1981)

#### **2.1.4.5 Warehousing**

The activities involving storage of goods on a large-scale in a systematic and orderly manner and making them available conveniently when needed is called Warehousing. In other words, warehousing means holding or preserving goods in huge quantities from the time of their purchase or production till their actual use or sale. Being an essential component of logistics, warehouse is a key aspect of modern supply chains and plays a critical role in the success or failure of business today (Frazelle 2002as cited by Haung Min study 2010). As Frazelle (2002) indicates the logistics of warehousing includes receiving, put away, storage, order picking and shipping. The objective of warehouse management is to efficiently and effectively coordinate all warehouse processes and activities (Harmon, 1993; Tompkins, 2003 as cited in Faber, 2013).

The increase in complexity of supply chain has also increased the complexity of the roles played by a warehouse for a business. The evolving role of warehouse has exerted significant impacts on the evolvement of warehouse management system (WM). A WM is a database driven IT tool used to improve the efficiency of the warehouse by coordinating warehouse activities and to maintain accuracy inventory by recording warehouse transactions Shiau and Lee 2009 (Cited by Min study 2010).

The effectiveness of a company as a whole as well as its quality and logistic service level directly affected by Receiving, transferring, handling, storage, packing, and expediting operations at the warehouse (Rafele, 2004 as cited in Anna, Alberto and Carlo, 2011).

According to Blanchard (2007) 63% of North American companies outsource at least some of their warehousing to a third party, a clear indication that they do not consider warehouse management to be one of their core competencies. The study conducted by Belarmino and Fernando (1999) explored that high efficiencies are gained after implementing Radio Frequency Identification in warehouses, including a reduction in the number of movements, the number of errors, the stocktaking, less paperwork, and a more rapid invoicing.

Generally, Frazelle (2002) indicated that a world-class logistics organization can be characterized by extensive use of logistics key performance and financial indicators, use of integrated logistics information systems, strategic use of logistics service and educating providers, a sense of urgency to leapfrog to world-class status, strategic use of third-party logistics providers, human-friendly logistics via logistics ergonomics and green logistics, order and discipline, supply chain integration, justifiable use of automated storage and handling systems, and excellent land and building utilization.

## **2.2 Empirical review**

### **2.2.1 Logistics practice in Ethiopia**

The importance of logistics arose from companies and becoming globalized to gain access to new markets, realize greater production efficiencies, and tap technological competencies beyond their own geographical borders (Kilasi, L.B., Juma, D. and Mathooko, M.P. 2013).

(Fekadu, D. 2013) who study on the logistics practices of Ethiopia, states that the quantity and quality of transport infrastructure is very low, the main freight transport companies lack capacity in terms of skilled human resource, management skills and number of fleets of vehicles, the main/big companies are government owned that will result in inefficiency, the efficiency of customs authority is very low and this causes a lot of delays at check points, and the number of days required to get foreign currency from national bank is also very long.

The research done by Fasika, Klaus and Marcus (2014) on selected Ethiopian manufacturing industries, on the characteristics of supply chain and logistics found that customer's comments and complaints collection were done mostly with help of data log manually and the level of practice of customer service is very less. They also found that although the companies have to set rules for effective negotiation procedure, procurement department's officers who were directly participating in purchasing cannot follow all rules because the marketing situations are highly variable and dynamic especially with raw material price. In their study they also found that the supplier evaluation is largely based on minimum cost and contract breakdown will be done for minor price changes.

Concerning transportation most of the companies were using their own transport facilities to transport and distribute the final product to local customers. Some of the companies have started using third party logistics (3PL) providers for their distribution functions (Fasika, Klaus and Marcus 2014)

### **2.2.2 Logistics Practice in other countries**

Mansidão and Coelho, 2014:4 conducted an empirical analysis on data obtained by mail survey from executives to define and further measure performance with respect to logistics that resulted in identifying length of promised order cycle times for base-line/in-stock products, manufacturer's performance in meeting promised delivery dates, fill rate on base-line/in-stock items, advance notice on shipping delays, accuracy of manufacturer in forecasting and committing to estimated shipping dates on contract/project orders, manufacturer's adherence to special shipping instructions, accuracy in filling orders as appropriate measures for logistical practice.

The study conducted by Vasco, S. and Andrew, P (2012) in South Africa on the logistics practices on manufacturing sector found that there is a high transportation cost, unexpected road congestions, and loading and unloading delays. Due to this road freight transport network made the transport cost less important in the whole supply chain. They also notice that most of the manufacturing firms used 3PLs, and those 3PLs have 100% vehicle ownership and practice flexible transportation plan. The study also observes that there are urgent customer orders and demand forecast inaccuracies and lack of communication between customer and carrier, lack of understanding between sales and logistics with in carriers are also sometimes observed.

The study piloted by Goh and Pinaikul (2002) on logistics practices and development in Thailand found that most of the logistics costs incurred are on transportation and warehousing. Most of the manufacturing firms that have instituted logistics departments are making an effort in upgrading their logistics systems and are more pervasive in using technology to manage logistics as compared to firms without formalized logistics departments. They also notice that most manufacturing firms owned a warehouse instead of using public warehouses. Nearly two thirds of them (65%) own one or two warehouses and only 9 % use solely public warehouses while a third rely on both private and public warehouses.

Goh and Pinaikul (2002) also found out that in Thailand most of the respondents are not interested using outsourcing. 72.5% of the firms are owned their fleet of vehicles for distribution. And most firms in Thailand (95%) still rely on traditional methods of communication, like calling, mailing and faxing in order processing and only four firms having a complete EDI linkage in their supply chain.

The key finding in this study reveals that the main reasons for implementing an LIS (Logistics Information System) include quicker response time, shorter cycle time and greater order convenience.

The study in Brazil on the logistic practices by Donald and David (1997) found that the Brazilian economy is stabilizing and many firms, both domestic and international, are viewing Brazil as the primary focus of their manufacturing and distribution strategy. This was due to the fact that the country logistics is characterized by less delay in ports, availability of a nice infrastructure, and modern information management systems.

### 2.2.3 Logistics Challenges

The logistics practice in logistics research is under its development stage, regardless of its importance in an organizational performance. The available literatures have recognized the importance of logistics performance for improving the well-functioning of business processes of an organization and across the supply chains (Clifford Defee and Fugate, 2010, Keebler and Plank, 2009, Green Jr et. al, 2008, and Mansidão and Coelho, 2014). Conceptually, logistics performance may be viewed as a subset of the larger notion of firm or organizational performance (Chow et. al, 1994).

Since the logistics practice is new for our country, it is constrained by so many weaknesses. The logistics performance of Ethiopia is characterized by lack of coordination in the chain, lack of coordination in areas of inventory planning and warehouse management, less attention on customer satisfaction, inadequate delivery of goods to customers and lack of coordination with transporters. (Fekadu, D. 2013)

According to Fekadu 2013, the constraints associated with logistics system in Ethiopia could be characterized by under development of logistics management system, inadequate means of transport, the market possibility of the country is hampered by poor logistics system, lack of coordination of goods transport, damage of goods and quality deterioration while in storage, packaging, lack of organization and management tools are some of the problem in logistics system in Ethiopia.

Long delays in customs and port handling as well as complex tariff for imported items are becoming the challenge for logistics and supply chain processes (Fasika, Klaus and Marcust 2014). They also indicate that the major transportation challenges are Ethiopia having no access to sea (Land-locked country) and back ward transport infrastructure. Due to this the deliver process was expensive and challenging. This hinders the firms' competitiveness of the country.

The study by (Bogale, W. 2005) indicates that on the competitiveness of Ethiopian shoe industry high cost of inland transport, problems with packaging and port facility are confirmed in the survey analysis as crucial problems for achieving competitiveness of shoe firms in Ethiopia. Dinh, Hinh, 2014 states that poor trade logistics in Ethiopia impose additional costs on the

competitiveness of the leather industry and the biggest challenge in Ethiopia is the long lead time in the imports.

Girum and Florian (2013) indicates in their study that the recently introduced 'Export Trade Duty Incentive Schemes Proclamation No 768/2012' has several instruments to minimize the problems of inventory stocking and lead time for establishments that import inputs, such as chemicals, for the production of commodities for the export market. They found that bonded input supplies warehouse scheme is one of such instruments whereby exporters are allowed to store inputs without duty payments under the supervision of the customs authority. It is also indicated that this scheme reduces customs clearing time, overstocking of raw material inventory and lead time.

Poor trade logistics penalize firms that rely on imported inputs and doubly affect exporters, causes long and uncertain delays, and it is unacceptable to most global buyers, especially in the time sensitive apparel and shoe industries. They also mentioned that challenges that face logistics operations have become a great concern at this time since they result in poor performances of logistics (Dinh and Hinh T. 2014)

Clifford (2011) also mentioned the top ten logistics challenges as: infrastructure, the price of diesel, rising truck rates, capacity, the economy, ocean shipping, security, the green movement, the election and increased truck weight limits. On the other hand, Alan and Remkovan (2008) described that extended lead time of supply and extended and unreliable transit time are the main logistics challenges.

The major factors hindering logistics development in Thailand is inefficient logistics information system, acute transportation bottlenecks, climate changes, lack of modern logistics management techniques and expertise, high cost of acquiring and installing automated logistics equipment, etc... (Goh and Pinaikul, 2002)

The major logistics constraints the Vietnam manufacturing industries faces are its dependence on imported inputs, its difficulty in establishing direct relationship with buyers, taxes and the restrictions placed on foreign owned companies. Related to this, insufficient container handling capacity, insufficient road development and maintenance, underused railways capacity,

insufficient management, insufficient airfreight facility are the major problems in logistics infrastructures (Ministry of Transport, Vietnam & The World Bank, 2002).

Donald and David (1997) explored that the major logistics challenges facing Brazilian logisticians is inability to access and apply the growing logistics knowledge base and the wide variance in customer sophistication.

Inefficiencies in supply chain, ineffective communication structures, poor exchange of information, inappropriate culture, excessive reliance on forecasting and stockholding, managing problems rather than eliminating their causes are the major logistics and supply chain management challenges in Europ (Edward, 2004)

There were some major logistics challenges in China even if the industry grows year of years the interrupt the development like rising cost, financing bottlenecks, in-house mindsets to handle logistics, localized services, lack of unified top level institutional coordination and imbalance transport infrastructure development (Li & Fung Research Centre, 2008).

David, Robin, Robert and Louis (2007) in their study argues that uncertainty and variability, human behavior, limitations of current information systems, data overload and bad data, product proliferation and shortening life cycles and misaligned decisions and performance measures are the major logistics problems for many manufacturing logistics sectors.

A well-developed transport and communication infrastructure, a sound governmental industrial policy and a well-developed educational system are the necessary conditions for improved logistics and manufacturing. Until recently, African firms did not have this autonomy because of the heavy involvement by the government. As a result, bureaucratic procedures inside and outside the firm impeded the flexibility of the firm (Biersteker, 1992; Mkandawire, 1994 as cited in Hans, 1999).

### **2.3 Conceptual Framework of the study**

The researcher assesses the extent of logistic practices in terms of five logistic activities which are Customer Service, Inventory management, Supply, Transpiration and warehousing and

challenges of logistics using six categories which are Geographical, Demographical, Environmental, Legislative, Technological and others factors.

Research Conceptual Framework Combining the above concepts of logistics management practices, and challenges results in the proposed model in figure 2.1

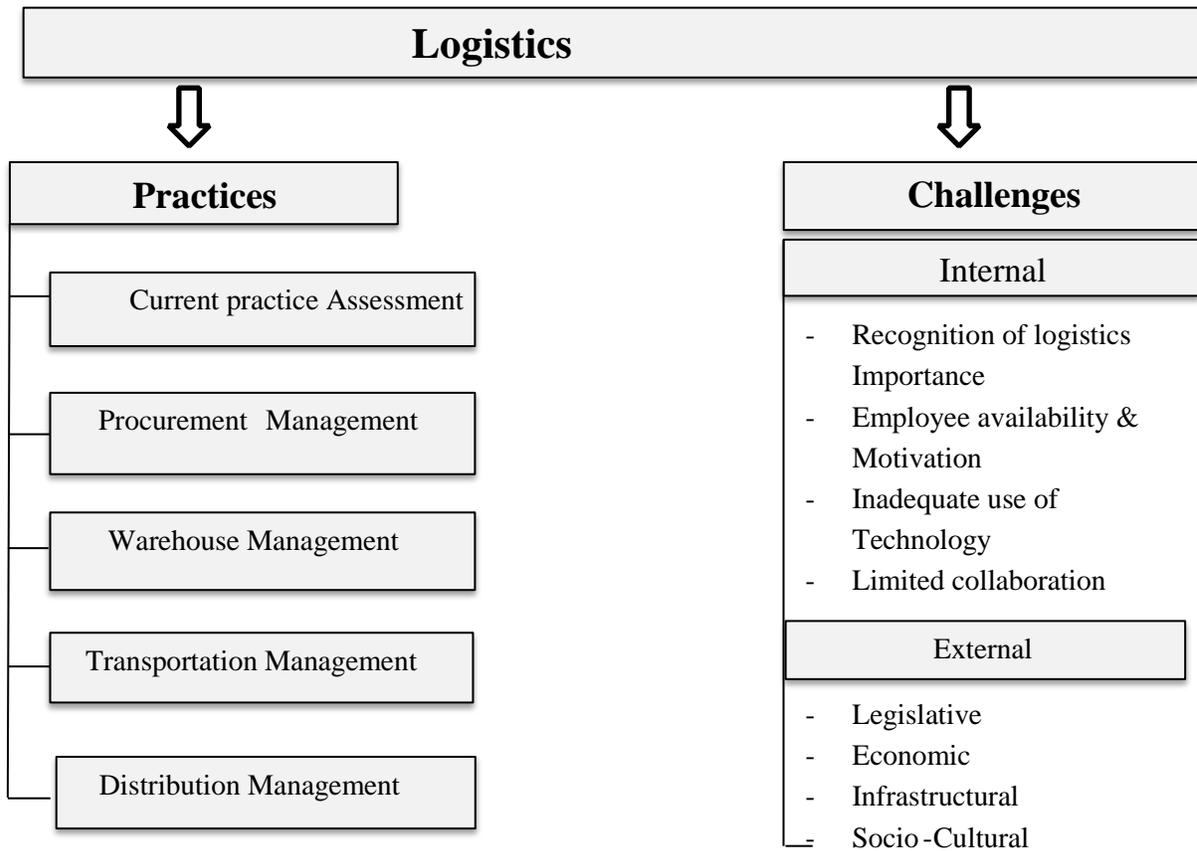


Fig. 2.1 Conceptual Framework of the study: Adopted from Review of literature.

## **CHAPTER THREE**

### **METHODS OF THE STUDY**

#### **3.1 Research Design**

The research design adopted by the researcher should answer the questions the study is seeking to answer or the objectives the researcher seeks to achieve by conducting the study (Mundia, C., Langat, K.E and Lelegwe, S. 2015). The study was examined logistics management practices and its challenges in ethio telecom. Thus, Descriptive type of research design was employed in the study because the main objective of the study is to describe the logistics practice in the Ethio telecom and related logistics challenges. Descriptive design is useful for describing the data collected in research studies and to accurately describe the variables under observation.

#### **3.2 Research Approach**

This study used both qualitative and quantitative approach (mixed research approach). Mixed approach (qualitative and quantitative approach) which is often the best way of handling research questions through triangulation (Russel, 2005 cited in Ahmed, 2005). The study was believed that both qualitative and quantitative approaches can contribute greater to the completeness of the investigation at hand.

Mixed research is useful to capture the best of both qualitative and quantitative approaches and the draw back in one approach will be fulfilled by the other approach. The quantitative approach involves the generation of data in quantitative form which can be subjected to rigorous quantitative analysis. Qualitative approach to research is concerned with subjective assessment of attitudes, opinions and behavior (Kothari, 2004).

#### **3.4 Target Population**

The target population is the total number of subjects targeted by the study or the group of elements to which the researcher wants to make inference (Mundia, C., Langat, K.E and Lelegwe, S. 2015). In this study, the population elements will be the employees of warehouse, procurement, fleet operation, and facilities, inventory and goods shipment working in the Debre Berhan Region of ethio telecom. These working units are organized under Supply and sourcing division and fleet and facilities division and they are directly responsible for the logistics

activity of the company. The total number of employees in these working units is 211 excluding vehicle drivers based on employee assignment profile taken from Ethio Telecom HR data in 2020.

### **3.5 Sampling Technique and Sample Size**

According to Kothari (2004), when the field of inquiry is large, considerations of time and cost almost invariably lead to a selection of respondents i.e., selection of only a few items. The respondents selected should be as representative of the total population as possible in order to produce a miniature cross-section. The selected respondents constitute what is technically called a 'sample', the selection process is called 'sampling technique' and the number of items to be selected from the universe to constitute a sample is called 'sample size'.

The researcher was used stratified random sampling method from probability sampling technique to select respondents from the target population. If a population from which a sample is to be drawn does not constitute a homogeneous group, stratified sampling technique is generally applied to obtain a representative sample. Under stratified sampling the population is divided into several sub-populations that are individually more homogeneous than the total population (the different sub-populations are called 'strata') and then items selected from each stratum to constitute a sample. Since each stratum is more homogeneous than the total population, stratified random sampling enable to get more precise estimates for each stratum and by estimating more accurately each of the component parts, it gives a better estimate of the whole.

As the target population (employees of ethio telecom under two division) are in different working units (warehouse, procurement, fleet operation, facilities, inventory and goods shipment), It was more appropriate to use stratified random sampling to draw representative from all working units (strata). The representatives were selected from each stratum using simple random sampling.

The size of sample should neither be excessively large, nor too small. It should be optimum. An optimum sample is one which fulfills the requirements of efficiency, representativeness, reliability and flexibility (Kothari, 2004). The sample size was 138 respondents out of the 211 population available under the mentioned working units. The sample size calculates using a formula called Slovin's formula (Israel, 1992).

N where n = number of samples

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

N = Total Population

e = Error tolerance - at desired level of confidence, take 0.05 at 95% confidence level

$$n = \frac{211}{1 + (211 * 0.05^2)} = 138$$

### 3.6 Data Source and Collection Procedures

Primary data sources used to collect relevant data. The primary data was collected using questionnaire included open-ended and close-ended questions as questionnaire are simple to administer and relatively inexpensive to analyze. Questionnaires were distributed personally by researcher visiting all stratum. To maintain the validity of the constructs and scale used in the research, most of the questionnaires were adopt from previous researches with modifications and some of the questionnaires was developed based on careful review of literatures.

### 3.7 Reliability and Validity testing

The two most important and fundamental characteristics of any measurement procedure are reliability and validity. Patton (2002) argue that validity and reliability are two factors which any quantitative researcher should be concerned about while designing a study, analyzing results and judging the quality of the study.

#### Validity

Validity is referring to the extent to which a measurement procedure actually measures what it is intended to measure rather than measuring something else, or nothing at all. The researcher considers three type of validity. Construct Validity is the extent to which a measuring instrument provides adequate coverage of the topic under the study. Its determination is primarily judgmental and intuitive. Second, Criterion related validity is the ability to predict some outcome or estimate the existence of some current condition. Third, Construct validity is the degree to which scores on the test can be accounted for by the explanatory construct of sound theory.

(Kothari, 2004) If the above stated criteria for measuring validity are met our questionnaire is valid.

### Reliability Analysis

The data for this research was generated using scaled responses, it was deemed necessary to test for reliability. “Since summated scales are an assembly of interrelated items designed to measure underlying constructs, it is very important to know whether the same set of items would elicit the same responses if the same questions are recast and re-administered to the same respondents”

(Reynaldo and Santos, 1999). Cronbach’s Alpha statistics using SPSS version 20 was applied to check the reliability of a set of questions designed to test 5-point Likert scale as described so far. The individual Cronbach's  $\alpha$  for the survey designed for the study is determined. As seen from Table 4.2, all alpha coefficients ranged between 0.724 and 0.821 which is well over the accepted limit of 0.70. These results indicate that the data has a high level of internal consistency within the multi-item scales.

**Table 3.1: Reliability Coefficient of the Study Variables (Final Questionnaire)**

<b>Dimensions of Logistics practice</b>	<b>Cronbach's Alpha</b>	<b>N of Items</b>
Inventory Management	.821	5
Supply	.806	5
Transport Management	.734	4
Warehouse Management	.736	5
Customer Response	.724	4
Information Flow Management	.739	4

### **3.8 Methods of Data Analysis**

The procedure followed used in data analysis have significant impact on the accuracy and relevance of the findings for data analysis. Structured questionnaire is one of primary source of data collection instrument. After compiling the output of questionnaires the variables were entered in software and the data also enter. Descriptive data analysis was applied in this study. It used to describe and summarize the response of the questionnaires by checking frequency, mean and standard deviation for the variables.

## **CHAPTER FOUR**

### **DATA PRESENTATION, ANALYSIS AND FINDINGS**

#### **4.1 Introduction**

The findings of the study are presented in this chapter. Necessary discussions of the findings are also made to establish understanding and to show relationships among variables in relation to literature and the research objectives. Data collected from the employees of the company were checked for their completeness and were coded and entered in to Statistical Package for Social Sciences (SPSS) for analysis. Descriptive statistics such as mean and standard deviations were used to analyze the quantitative data. Accordingly, demographic profile of the respondents, analysis, interpretation and discussion of findings are presented below.

#### **4.2. Response Rate**

Responses were gathered from staffs of Ethio telecom facility and fleet and sourcing division. One hundred twelve (112) responses in all were gathered out of the one hundred thirty-eight (138) questionnaires administered. This represented 81.20% response rate. The rate is satisfactory according to the argument of Cooper and Schindler (2003) that sets a response rate of 30% to 80% as adequate.

#### **4.3. Respondents Profile**

The study sought to determine the different demographic characteristics of respondents in order to determine their knowledge and understanding of questions posed to them in the questionnaire. As can be seen in Table 4.1, 35 (31.3%) of the participants from whom responses were gathered from were females while 77 (68.7%) were males. With their age ranges, it could be seen that 34.8% were between 36 and 45 years, followed by about 25.9% who were between the age of 26 and 35 years. Also, about 25% were above 46 years and just about 14.3% were below 25 years. Given their educational background, close to half (43.8%; n=49) of them are degree holders, while about 25.9% have diploma. Also, about 22.3% had others whereas a very few respondents (8%) had master degree. The respondents were from various units of the facility management-facility management central, procurement, warehouse, and transport with percentage of responses of 9.82%, 32.14%, 20.54% and 37.5% respectively. Most of the respondents were found to be senior staff representing 40.16% (16.96% manager and 23.2% administrator) of

responses, followed by 24.13% who were 27 supervisors with just 22 (19.64%) specialists. A few respondents 18(16.07%) were rest on other category. About 33.93% of the respondents have worked in Ethio telecom between 11 and 15 years, whereas about 33.04% and 19.64% have worked in Ethio telecom for 5 -10 years and more than 15 years respectively. A few respondents (13.39%) have worked less than 5 years. These are summarized as displayed in Table 4.1.

Table 4.1: Personal Information of Respondents

<b>DEMOGRAPHY</b>	<b>CHARACTERISTICS</b>	<b>Frequency</b>	<b>Frequency %</b>
<b>GENDER</b>	Female	35	31.30%
	Male	77	68.70%
	N	112	100.00%
<b>AGE</b>	Below 25	16	14.30%
	26 - 35 years	29	25.90%
	36 - 45 years	39	34.80%
	Above 46	28	25.00%
	N	112	100.00%
<b>EDUCATIONAL QUALIFICATION</b>	Diploma	29	25.90%
	Bachelor's degree	49	43.80%
	Master's degree	9	8.00%
	Other	25	22.30%
	N	112	100.00%
<b>LENGTH OF YEARS WORKED</b>	Less than 5 year	15	13.39%
	5- 10 years	37	33.04%
	11 - 15 years	38	33.93%
	More than 15 years	<b>22</b>	19.64%
	N	112	100.00%

**Source: Field study 2021**

Based on these, it is believed that most of the respondents provided responses that represent the true state of logistics management practices and its challenges in in Ethio telecom.

## 4.4. Analysis of Responses

### 4.4.1 Responses on Current Logistics Practices

The descriptive analysis of situation assessment practices is presented in the table below. The mean value for responses that the company assesses the formalized logistics department in Ethio telecom is 3.95 indicating that the organization recognizes the need for logistics department as priorities. The mean value for responses that logistics practices in the company according to customer response is 3.62 implying that the organization recognizes the need for assessing the Customer response situations. Assessment of Logistics Information System/LIS in Ethio telecom has mean value of 3.70 implying that the organization has given Information System Moreover, the standard deviation lies in between 0.6 & 0.8 which indicates lower variations in responses.

Table 4.3: Descriptive Analysis of Current Logistics Practices

<b>Statements</b>	<b>Mean</b>	<b>Std.Deviation</b>
There are formalized logistics department in Ethio telecom	3.95	.88
The logistics practices in the company according to customer response	3.62	.72
There are Logistics Information System/LIS in Ethio telecom	3.70	.61
<b>Grand Mean</b>	<b>3.71</b>	

*Source: Survey Result 2021*

### 4.4.2 Responses on Procurement Management Practices

The descriptive analysis of procurement management practices is presented in the table below. Avoiding delays in availing the required supplies in telecom item has mean value of 3.33 which indicates that these practices are moderately implemented. The mean value for the response

placing and delivering orders on schedule for purchasing telecom items is 3.41. The mean value for the responses proper management of telecom supplies and procurement of required supplies is moderate which is 3.44 implying that the company is well practicing the proper mobilization of telecom items. The organization implements a quick acquisition of supplies to minimize the business interruption situations scored moderate mean value of 3.30 implying that more emphasis should be given to minimize the response time to supply telecom items in right situations. The mean values for the responses the organization maintains a proper match between the requested supplies of telecom items and the volume of supplies a is high which is 3.42 indicating that the organization attempts to maintain a match between the demand and supply.

Table 4.4: Descriptive Analysis of Procurement Management Practices

<b>Statements</b>	<b>Mean</b>	<b>Std. Deviation</b>
Avoiding delays in availing the required supplies in telecom item	3.33	.50
Placing and delivering orders on schedule at a good price for purchasing telecom items	3.41	.53
Proper management of goods and procurement of required supplies	3.44	.65
Implementing quick acquisition of supplies to minimize the business interruption	3.30	.57
Maintaining a proper match between the requested supplies of telecom items and the volume of supplies	3.42	.55
<b>Grand Mean</b>	<b>3.38</b>	

*Source: Survey Result 2021*

*Interview with the senior manager of the company verified that the organization attempts to delivers the telecom supplies required at the right time and quantity. However, transportation problems coupled with infrastructural conditions makes it challenging to deliver telecom items on time. More emphasis is given to strengthening the transportation practices so as to avail the telecom items on time to minimize response rate.*

Hence, it can be said that the organization is moderately practicing procurement process. Generally, most of the respondents replied that procurement management is moderately practiced by the company. This is indicated by an overall mean of 3.38. The standard deviation also lies in between 0.5 & 0.6 which implies slight variation in agreement from the common mean. Literature suggest the ability to find alternative suppliers or the use of multiple suppliers that are members of the system with shared responsibilities, pre-approved and certified for specific materials (Gavidia, 2017).

#### **4.4.3 Responses on Transportation Management Practices**

The descriptive analysis of transportation management practices are presented in the table below. The mean value for the responses delivering the right products to the right person at the right time is high which is 3.49 implying that the organization attempts to deliver supplies within the shortest time possible. Efficient transportation of telecom items to maximize the revenue rate of the company has a mean value of 3.59 which indicates that the organization strives to transport telecom supplies rapidly. The mean value for the response quick transportation of telecom items is 3.59 which indicate that the organization well implements these practices.

The organization uses various transport optimization models to deliver supplies with least possible cost has moderate mean value of 3.11 which needs improvement so as to attain efficient and cost effective transportation practices which will maximizes the revenue of business to be more competitive. Literature suggests implementing optimization techniques to the transportation of goods in order to schedule when and how much to send from each origin to its respective destination over a certain time period is a possible way to make improvements over the total cost of logistics (Khan, 2014).

Table 4.5: Descriptive Analysis of Transportation Management Practices

<b>Statements</b>	<b>Mean</b>	<b>Std. Deviation</b>
Delivering the right product to the right person at the right time	3.49	.50
Efficient transportation of telecom product to maximize the business efficiency.	3.59	.49
Quick transportation of telecom product to minimize the cost of operation	3.59	.55
Using various transport optimization models to deliver products with least possible cost	3.11	.78
Using multimodal transportation in non-emergency conditions to achieve flexibility and resilience	2.81	.63
<b>Grand Mean</b>	<b>3.31</b>	

*Source: Survey Result 2021*

The responses using multimodal transportation in emergency conditions has the lowest mean value of 2.81 which is moderately practiced activity. More emphasizes should be given to the use of multimodal transportation since most of the transportation infrastructures are damaged during disasters. According to Gavidia (2017), transportation flexibility and resilience can be achieved through the use of multimodal transportation that goes beyond conventional modes.

In general, transportation management practices with the exception of the use of multimodal transportation mechanisms to achieve flexibility and resilience and transport optimization models to deliver supplies with least possible costs are implemented in the organization. This is indicated by an overall mean of 3.31. The standard deviation for the responses also lies in between 0.5 & 0.8 which implies slight variation in agreement from the common mean.

#### 4.4.4 Responses on Warehouse Management Practices

The descriptive analysis of warehouse management practices is presented in the table below. Availing appropriate warehouses to temporarily store supplies for sells has high mean value of 3.43 implying that these practices is well implemented by the organization. The organization ensures the accessibility of the warehouse to deliver the perfect order in the region has moderate mean value which is 3.41 indicating that the organizations strives to avail the right products, at the right place, at the right time and in the right quantity. Delivering the right product in the right quantity by using the warehouse to properly pick and dispatch products has mean value of 3.37 which indicates moderately practiced activity. The organization ensures that the product leaves the warehouse clean and damage free for efficient delivery to the beneficiaries scored a mean value of 3.44 which implies a well implemented warehouse activity.

Table 4.6: Descriptive Analysis of Warehouse Management Practices

<b>Statements</b>	<b>Mean</b>	<b>Std. Deviation</b>
Availing appropriate warehouses to store product for sells	3.43	.59
Ensuring the accessibility of the warehouse to deliver the perfect order in the region	3.41	.53
Delivering the right product in the right quantity by using the warehouse to properly pick and dispatch products	3.37	.50
Ensuring the product leaves the warehouse clean and damage free for efficient delivery to the customers	3.44	.59
<b>Grand Mean</b>	<b>3.40</b>	

*Source: Survey Result (2020)*

Generally, warehouse management is well practiced in the organization indicated by an overall mean of 3.40. The standard deviation also lies in between 0.5 & 0.8 which implies slight variation in agreement from the common mean. The findings of the study indicate that the organization is well practicing warehouse management. However, more emphasis should be given to further strengthen the warehouse operation.

#### 4.4.5 Responses on Distribution Management Practices

Descriptive analysis of distribution management practices is presented in the table below. The mean value for the responses distributing supplies based on the demand for them and on the existing stock has a mean value of 4.19 indicating that the organization exerts its efforts towards maintaining a proper match between demand and supply in the region. Ensuring effective distribution by using reliable transportation systems scored a mean value of 3.11 which is moderate or a little bit less which needs more emphasis. Literature shows that, reliable transportation system enables the supply chain, through coordinated transportation nodes and modes, to effectively deliver goods and services in an expeditious and efficient manner. Many aspects of transportation influence success or failure during a response (FEMA, 2019).

Table 4.7: Descriptive Analysis of Distribution Management Practices

Statements	Mean	Std.Deviation
Distributing product based on the demand for them and on the existing stock	4.19	.61
Ensuring effective distribution by using reliable transportation system	3.11	.61
Proper organization of the distribution team by encouraging the use of on the spot situational decisions	3.43	.60
Using a well-established distribution center to minimize cost and ease distribution	3.41	.55
Providing appropriate training to the distribution team to make sure that they execute their duties at high level of passion and commitment	3.59	.52
<b>Grand Mean</b>	<b>3.54</b>	

*Source: Survey Result 2021*

The mean value for the response proper organization of the distribution team by encouraging the use of on the spot situational decisions is 3.43 implying that the organization is working towards providing appropriate responses to provide telecom supplies to the region.

The use of well-established distribution center to minimize cost and ease distribution scored mean value of 3.41 implying that distribution management is well practiced and implemented in the organization. Providing appropriate training to the distribution team to make sure that they execute their duties at high level of passion and commitment scored a mean value of 3.59 which is practiced well in the organization.

*Interview with the senior manager of the organization confirmed that the organization strives to achieve flexibility to accommodate changes. However, the unpredictable shortage makes preparation and planning a difficult task. The manager also added that the distributions of supplies are made with optimum cost by the company by way of eliminating wrong supplies.*

In general, most of the respondents agreed that the organization is well practicing distribution management practices as indicated by the overall mean value of 3.54. The standard deviation also lies in between 0.5 & 0.8 which implies slight variation in agreement from the common mean.

#### **4.3.6 Responses on Logistics Challenge**

The study attempts to identify the challenges faced by the company related to logistics practices. According to the data collected from the respondents, the major external challenges faced by the company are legislative challenges. From the legislative challenges logistics, accessibility and security situations is ranked first with 78.3% of the responses. Government law and regulation challenges the logistics operation has the second highest rank with 64.4% responses, whereas the response prevalence of conflicting interest between the organization and the government has the lowest rank with 62.1% responses. The findings indicate that accessibility and security situation is the most critical legislative challenge. The major external challenge faced by the organization is economic challenges. As depicted in the table below, 58.1% of respondents agreed that infrastructural conditions affect the logistics practices of the company which is ranked first.

*According to the interview with the procurement manager, infrastructural conditions are the major logistics challenge faced by the organization. In most instances, infrastructural conditions are not well developed which leads to longer response times.*

The respondent's response also indicates that 54.5% of the respondents perceive inaccessibility of financial institutions as majorly faced challenge which is ranked second and only 30.4% of the respondents perceive the lack of local suppliers that avails telecom supplies as logistics challenges.

Table 4.8: Rank Analysis of External Logistics Challenges

<b>External Challenges</b>	<b>Specific Logistics Challenges</b>	<b>Rank</b>	<b>Percentage</b>
Legislative challenges	Accessibility and security situation doesn't allow to operate freely in all areas	1	78.3
	Government law and regulation is strict and challenges logistics operations	2	64.4
	Prevalence of conflicting interest between the organization and the government	3	62.1
Economic challenges	Infrastructural conditions affects telecom logistics operations	1	58.1
	Lack of local suppliers that avails telecom product during shortage of forex	2	54.5
Technological challenges	Difficulty of coordinating and managing multiple players due to lack of technology	1	81
	Inadequate technological facilities to expedite information flow between the customers and staff	2	73.2
Socio-cultural challenges	Societal and cultural factors hinders distribution of telecom product	1	74.8
	Prevalence of staff deployment problems related to community resistance	2	67.5
	Lack of support to the distribution team from the local communities	3	58.7

Source: Survey Result 2021

From the technological challenges, difficulty of coordinating and managing multiple players is ranked 1<sup>st</sup> with 81% of the responses, inadequate technological facilities (73.2%) and lack of telecommunication infrastructure (73.2%) are among the technological challenges faced by the organization. The other challenge faced by the organization is socio-cultural challenge. Among the socio cultural challenges, societal and cultural factors scored 1<sup>st</sup> with 74.8% of the responses. Lack of support to the distribution team scored 2<sup>nd</sup> rank with 67.5% of the responses. Staff deployment problems are the ranked last with 58.7% of the responses.

Table 4.9: Rank Analysis of Internal Logistics Challenges

Internal Challenges	Specific Logistics Challenges	Rank	Percentage
Recognition of the importance of logistics	Focus on program services rather than investment in systems and processes	1	67.2
	Occurrence of unanticipated logistics bottleneck causing unnecessary delays	2	80.3
	Exclusion of logisticians from the decision process	3	54.1
Employee availability & motivation	Prevalence of high level of staff turn over	1	74.3
	Lack of skilled manpower in the logistics department	2	69.3
	Lack of knowledge sharing through group brainstorming sessions & regular logistics workshop for staff motivation	3	44.7
Inadequate use of technology	Inadequate use of automated systems or mechanisms	1	75.6
	Restricted use of information technology for decision making	2	65.5
	Inadequate use of automated systems or mechanisms to increase logistics efficiency	3	58.9
Limited collaboration	Lack of investment in assistive technologies that support information flow	1	54.1
	Ability to disseminate accurate and timely information is not satisfactory	2	34.4
	Quality and speed of information flow is below the standard	2	34.4

Source: Survey Result 2021

The internal logistics challenges of the organization are depicted in the above table. The data collected from the respondents reveal that from the challenges related to the recognition of logistics importance, occurrence of unanticipated logistics bottlenecks scored 1<sup>st</sup> with 80.3% of the responses. Focus on program services rather than investment in system and processes ranked 2<sup>nd</sup> with 67.2% of the responses. Exclusion of the logistics from the logistics process is the least faced challenge in this category with 54.1% of the responses. Among internal logistics challenges, employee availability and motivation is the major one. From the major challenges in this category, Prevalence of high level of staff turnover ranked 1<sup>st</sup> with 74.3% of the responses. Lack of skilled manpower in the logistics department is ranked 2<sup>nd</sup> with 69.3% of the responses. Lack of knowledge sharing through group brainstorming sessions & regular logistics workshop for staff motivation is perceived by respondents as poorly faced challenge with the 44.7% of the responses.

Another internal logistics challenge is inadequate use of technology. Among the challenges in these category, Inadequate use of automated systems or mechanisms scored 1<sup>st</sup> with 75.6% of the responses. Restricted use of information technology for decision making scored 2<sup>nd</sup> rank with 65.5% of the responses. Inadequate use of automated systems or mechanisms to increase logistics efficiency is the least faced challenge in this category with 58.9% of the responses. The other internal challenge is the prevalence of limited collaboration. Among the challenges in these category, ability to disseminate accurate and timely information, is ranked 1<sup>st</sup> with 54.1% responses. Secondly, quality and speed of information flow is below standard and lack of access to necessary logistics information, are ranked second with 34.4% of the responses.

The finding indicates that the ability to disseminate accurate and timely information is not satisfactory and is perceived by the majority of the respondents as critical challenges. However, various literatures stress the need for effective communication and information flow. But without an effective communications network and collaboration with numerous partners, supplies are left undelivered, and rest workers are unable to do their jobs, communication and collaboration is essential to boost revenue (Mubaraka et al., 2013).

## **CHAPTER FIVE**

### **FINDINGS, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

The main purpose of the study was to assess the logistics practices and its challenges in Ethio telecom. Furthermore, the researcher points out the major external and internal logistics challenges the company encounters. Based up on the results of the study, summary of findings, conclusion and recommendations are discussed in this chapter.

#### **5.2 Summary of Major Findings**

Based on the data collected through questionnaire and interviews, the major findings of the research are summarized and presented as follows;

- The grand mean of situation assessment practices was 3.71, which indicate that Current Logistics Practices. Assessment of logistics practices in the company according to customer response and Logistics Information System/LIS in Ethio telecom has the highest mean score of 3.95 and 3.73 respectively.
- The grand mean of procurement management practices was 3.39, which indicate that procurement management was moderately practiced by the company. The procurement practices of avoiding delays in availing the required supplies and implementing quick acquisition of supplies are implemented moderately.
- The grand mean of transportation management practices was 3.31, which indicate that transportation management was moderately practiced by the company. The use of multimodal transportation and various transport optimization models are perceived by the majority of the respondents as moderately implemented logistics practices.
- The grand mean of warehouse management practices was 3.40, which indicate that warehouse management was moderately practiced by the company. The warehouse practice of delivering the right product in the right quantity by using the warehouse to properly pick and dispatch products are practiced moderately.
- The grand mean of distribution management practices was 3.54, which indicate that distribution management was well practiced by the company. However, the practice

of ensuring effective distribution by using reliable transportation system is practiced moderately.

- Among the external logistics challenges, in the legislative challenges accessibility and security situation is ranked 1<sup>st</sup> and prevalence of conflicting interest is ranked last, in the economic challenges infrastructural challenge is ranked 1<sup>st</sup> and lack of local suppliers is ranked last, in the technological challenges difficulty of coordinating and managing multiple players is ranked 1<sup>st</sup> and lack of road infrastructure is ranked last and in the sociocultural challenges, sociocultural factor is ranked 1<sup>st</sup> and the prevalence of staff deployment problem is ranked last.
- Among the internal logistics challenges, from the recognition of the importance of logistics, occurrence of unanticipated logistics bottleneck is ranked 1<sup>st</sup> and exclusion of logistician from the decision process is ranked last. From the employee availability and motivation, lack of knowledge sharing is ranked 1<sup>st</sup> and lack of skilled manpower is ranked last. From the inadequate use of technology, restricted use of information technology is ranked 1<sup>st</sup> and lack of investment in assistive technologies is ranked last. From the limited collaboration, ability to disseminate accurate and timely information is ranked 1<sup>st</sup> and lack of access to logistics information is ranked last.

### **5.3 Conclusion**

The study assesses the logistics practices and its associated challenges at Ethio telecom Debre Berhan regional Office. Depending on the data collected by means of questionnaire and interview, descriptive analysis is conducted using mean and standard deviation. In line with the objective of the study, the following conclusions are drawn;

- The study concluded that Current Logistics Practices at Ethio telecom in terms of assessing Assessment of logistics practices in the company according to customer response and Logistics Information System/LIS in Ethio telecom areas, assessing the demography and number of displaced and the size of vulnerable population.
- Broadly translated the findings confirm that procurement management practices at Ethio telecom are implemented moderately. The procurement practices of avoiding delays in availing the required inventories, proper management of telecom goods and

procurement of required supplies and implementing quick acquisition of supplies is well practiced. However, maintaining a proper match between the requested supplies of telecom items and volume of supplies and placing and delivering orders on schedule for purchasing telecom items are practiced to a little extent and require more emphasis.

- As per the findings of the study transportation management practices at Ethio telecom in terms of delivering the right product to the right person at the right time, maintaining efficient transportation of telecom devices to maximize the business competitiveness of the company and quick transportation of telecom items are practiced moderately. However, the use of multimodal transportation in non-emergency conditions to achieve flexibility and resilience and various transport optimization models to deliver inventories with least possible cost are practiced to a little extent.
- The study concluded that warehouse management practices at Ethio telecom are a bit above moderate. Ensuring the accessibility of the warehouse to deliver the perfect order, ensuring the product leaves the warehouse clean and damage free for efficient delivery to the beneficiaries and availing appropriate warehouse to store inventories are practiced moderately. However, availing sufficient warehouses to store telecom inventories and delivering the right product in the right quantity by using the warehouse to properly pick and dispatch products are not well practiced.
- To sum up, distribution management practices at Ethio telecom are well practiced in terms of distributing inventories based on demand and on the existing stock, providing appropriate training to the distribution team to make sure that they execute their duties at high level of passion and commitment and organizing the distribution team properly. However, ensuring effective distribution by using reliable transportation system and the availability of well established distribution center to minimize cost and ease distribution are not well practiced.

- Generally, the major external challenges faced by Ethio telecom includes accessibility and security situations, infrastructural conditions, difficulty of coordinating and managing multiple players and societal and cultural factors which hinders distribution of telecom inventories. The major internal challenges faced by Ethio telecom includes occurrence of unanticipated logistics bottleneck causing unnecessary delays, lack of knowledge sharing through brainstorming sessions and regular logistics workshops, inadequate use of automated systems and ability to disseminate accurate and timely information is not satisfactory.

#### **5.4 Recommendation**

The researcher recommends the following set of actions to be undertaken by the company to improve its logistic practices and tackle the associated challenges.

- It is highly recommended to implement comprehensive and detailed assessment of telecom logistics to capture rapid changes and ensure business competitiveness. Triangulation of data obtained from numerous sources is essential to improve assessment practices. Also, the company can engage in coordinated need assessment with various telecom companies. Ensuring the qualification of the assessment teams is also vital for gathering accurate and reliable data to address the prevailing need. These entail the organization to invest in staff development, trainings and experience sharing platforms which in turn motivate employees and develop resilient teams.
- It is strongly recommended to adopt prepositioning of telecom inventories to improve the procurement practice, Moreover, appropriate training should be provided for the procurement staffs and the use of IT should be encouraged since it results in faster execution of orders and ensure transparency and accuracy. Furthermore, to achieve the objectives resources should be mobilized efficiently in such a way to avoid misuse and wastages.
- Based on the findings of the study, there is need for improvement of transportation practices. Therefore, it is recommended to maintain reliable means of transport by using multimodal transportation mechanisms. In the meantime, the government can make greater investments in improving infrastructural conditions in remote areas. Encouraging

larger investment in IT to track and trace inventories and equipment's in Business operations is also beneficial. Providing appropriate communication tools to all vehicles and staff in telecom operations helps to eliminate miscommunication and enhance greater coordination.

- In telecom operations, the warehouse is used to store telecom inventories in order to ensure efficiency, effectiveness and responsiveness of the telecom operations hence, larger space should be allocated to them. It is highly recommended to ensure sufficient warehouse space for prepositioning telecom items. Furthermore, the organization should encourage the application of IT tools in the warehouse to ease decision making, information flow and to minimize errors. Hence, the organization should make use of various information technology tools like GIS and real-time tracking systems. Besides, the use of logistics information system improves information flow regarding procurement, warehouse and distribution practices which enhances efficiency and effectiveness.
- Based on the findings of distribution management practices, it is highly recommended to ensure effective distribution by using reliable transportation system. Ensuring the accessibility of the distribution centers is essential to deliver supplies at the right time and at the right place. Increasing the logistics staff at field level, monitoring staffs and using various technologies that facilitate timely reporting helps to improve the distribution practices. Encouraging communication and coordination among business partners, private sectors and local communities optimizes the flow of managing telecom items distribution process. Placing sufficient logistician to track and control telecom items in last mile distribution is also vital for improving the distribution practices.
- The company should improve coordination and collaboration by improving the existing platforms for communication and information sharing. These could be achieved by developing system for managing information flow.
- Implementation of fleet management system improves the visibility of available trucks and improves fleet operation efficiency and productivity that result in reduced transportation costs,

- The integration should exceed beyond information exchange through email and plan to strengthen the integration through advanced systems like enterprise resource planning (ERP) and warehouse management systems (WMS) for order and inventory management; and document and information sharing.

### **5.5 Suggestion for Further Study**

This study provides a lot of facts and findings about the logistics management practices and challenges of Ethio telecom in Debre Berhan regional office. Apart from the findings that this research had described and explained, it has also provided valuable implications for studying logistics issues for future research. The suggestions for further studies are as follows:

Firstly, it needs to expand the respondents of the primary research into the whole company, and further in to other location to have an industry wise understanding.

Secondly, next studies should test hypothesis to measure the relations among logistics management practices in Ethio telecom and the effects of practices on Ethio telecom performance, operational or financial performance by using more advanced technique to analyze the primary data such as: Pearson Correlation, Correlation Coefficient, and effect size.

Finally, while the present assessment has contributed to the understanding of these practices, further analysis in some areas is required to ensure the capacity needs of LM addressed adequately.

## References

- Adams, J, Khan, Hafiz T.A., Raeside, R. and White, D. (2007). *Research Methods for Graduate Business and Social Science Students*. New Delhi: Business books from SAGE. .
- Adegum, O. (2017). *Housing conditions in Kano,Nigeria :A Qualitative assessmwnt of adequacy*. Nigeria.
- Agrawal, D.K. 2007. (2007). *Distribution and Logistics Management: Strategic Marketing Approach. India: Macmillan Publisher India Ltd.*
- Akshaya Kumar Sahoo& Uma Sankar Mishra 2013. (2013). *Evaluation performance of Supply Chain* .
- Alan Rushton, Phil Croucher, Peter Baker 2014. (n.d.). *The Hand Book of Logistics and Distribution Management (5th ed.)*. London: Kogan page. .
- Alarcon, R. and Antun, P.J. 2013. (n.d.). *The Hand Book of Logistics and Distribution Management (5th ed.)*. London: Kogan page. .
- Alemayehu, G. T. (2014). *Stocktaking of the Housing Sector in Sub-Saharan Africa pary 3 : Ethiopia*. Boston: Affordable Housing Institute .
- Bagshaw, B.K. 2017. (n.d.). *Integration logistics management though warehousing and inventory management to spawn high market share and profitability*. *Journal of marketing and customer research* Vol. 39. .
- Bogale, W. 2005. (n.d.). *A background paper on telecom and telecom statistics in Ethiopia*. Ethiopian Telecommunications Corporation.
- Boon pattarakan, A. 2012. (n.d.). *Competitive Capabilities of Thai Logistics Industry: Effects on Corporate Image and Performance*. *International Journal of Business and Management*, Vol. 7(5).
- Chiarini, A. 2015. (n.d.). *The impact of logistics solutions on customer satisfaction: an exploratory qualitative study of manufacturing companies*. *Italian journal of management* Vol. 33 (97). .
- Christopher, M., 1998. (n.d.). *Logistics and Supply Chain Management. Strategies for Reducing Cost and Improving Service?*, Financial Times Pitman Publishing, London.
- Dubale, E.T. 2010. (n.d.). *Telecommunication in Ethiopia: Multi-year expert meeting on services development and trade: the regulatory and institutional dimension*. United Nations.

- Ethio telecom, Company Profile (2018). (n.d.).
- Fair, M.L and Williams, E.W 1981. (n.d.). Transportation and Logistics Business Publication Inc. .
- Federal Negarit Gazeta 2011. (n.d.). . Regulation Number 197/2010. Federal Democratic Republic of Ethiopia Council of Ministers. .
- Fekadu, D. 2013. (n.d.). Logistics Practices in Ethiopia. Master's Thesis. Swedish University of Agricultural Sciences. .
- Hajiesmaeili, A., Rahimi, M., Jaberi, E. and Hosseini, A. 2016. (n.d.). Studying the influence of logistics on organizational performance through a supply chain strategy: Case study in Goldiran Electronics Co. World academy of science, engineering and technology international journal of economics and management engineering, V.
- International Encyclopedia , o. J. (2012). *2020 merriam - Webster, Incorporated*. Retrieved December 25, 2019, from <https://www.sciencedirect.com/topics/social-sciences/housing-development>.
- Kilasi, L.B., Juma, D. and Mathooko, M.P. 2013. (n.d.). The impact of outsourcing of logistics on the competitive advantage strategy of east African breweries ltd. International Journal of Social Sciences and entrepreneurship, Vol.1 (3), pp. 521-529. .
- Mundia, C., Langat, K.E and Lelegwe, S. 2015. (n.d.). Effect of Information System on Upstream Supply Chain Management Among Supermarkets in Nakuru Town, Kenya. International Journal of Economics, Finance and Management Sciences, Vol. 3 (5), pp. 535-540. .
- Nyaberi, N.J. and Mwangangi, P. 2014. (n.d.). Effects of logistics management practices on organization performance in Kenya: a case of rift valley bottlers limited in Uasingishu County. International Journal of Social Sciences and Entrepreneurship, Vol.1 (12). .
- Roth, M., Klarmann, A. and Franczyk, B. 2013. (n.d.). Future Logistics - Challenges, Requirements and Solutions for Logistics Networks. International Journal of Mechanical, Aerospace, Industrial, Mechatronic and Manufacturing Engineering Vol.7 (10). .
- Shang, K. and Marlow, B.P. 2007. (n.d.). The effects of logistics competency on performance. Journal of international logistics and trade, Vol. 5 (2), pp.45-66. .
- Stank, T.P., Davis, B.R. and Fugate, B.S. 2005. (n.d.). A strategic framework for supply chain oriented logistics”, Journal of Business Logistics, Vol. 26 No. 2, pp. 27-45. .

Thomas, A. S., and Kopczak, L., 2005. (n.d.). From Logistics to Supply Chain Management: The path forward in the humanitarian sector. San Fransisco. .

Tilokavichai, V., Sophatsathit, P. and Chandrachai, A. 2012. (n.d.). Analysis of Linkages between Logistics Information Systems and Logistics Performance Management under Uncertainty. European Journal of Business and Management, Vol 4 (9). .

## **QUESTIONNAIRE**

### **DEBRE BIRHAN UNIVERSITY**

#### **DEPARTMENT OF LOGISTICS AND SUPPLY CHAIN MANAGEMENT**

#### **GRADUATE PROGRAM**

#### **Dear respondents**

I'm a graduate student at Debre Birhan University in the Department of Logistics and Supply Chain Management. Currently, I'm conducting a research entitled Evaluation of logistics practice and its challenge in Ethio telecom as a partial fulfillment for the award of Masters of Art Degree in Logistics and Supply Chain Management.

The purpose of this questionnaire is to gather data for the proposed study, and hence you are kindly requested to assist the successful completion of the study by providing the necessary information. Your participation is entirely voluntary and the questionnaire is completely anonymous. I confirm you that the information you share will stay confidential and only used for the aforementioned academic purpose. So, your genuine, frank and timely response is vital for the success of the study. I want to thank you in advance for your kind cooperation and dedication of your precious time to fill this questionnaire.

#### **Instructions**

- In order to make the research outcomes complete, reliable and fruitful, please complete the questionnaire by considering each question thoughtfully and honestly.
- If you have any questions or difficulties do not hesitate to contact me through  
Phone No: - +251 912128960

**Part I: Demographic Profile of the Respondents**

**General Information**

Please put a tick mark (√) on the appropriate response category:

- 1. Gender** Male  Female
- 2. Age** 20 - 30 years old  41 - 50 years old  31 - 40 years old   
above 50 years' old
- 3. Education level**  
 Primary School  College Diploma  Master's Degree  
 Secondary School  Bachelor Degree  PHD & Above
- 4. Years of experience in the organization**  
 Less than 2 years  2 - 5 years  6 - 10 years  above 10 years

**Part II**

a. Level of agreement on logistics practices

Please rate your level of agreement regarding current logistics practices using the following 5 point scales. Put a tick mark (√) on the appropriate response category:

1. Never practiced 2. Poorly practiced 3. Moderately practiced 4. Well-practiced 5. Extensively practiced

No.	Logistics Practices	Rating				
		1	2	3	4	5
<b>I. Current logistics Practices</b>						
1	There are formalized logistics department in Ethio telecom					
2	The logistics practices in the company according to customer response					
3	There are Logistics Information System/LIS in Ethio telecom					
<b>II. Procurement Management Practices</b>						
1	Avoiding delays in availing the required supplies in telecom item					
2	Placing and delivering orders on schedule at a good price for purchasing telecom items					
3	Proper management of goods and procurement of required supplies					
4	Implementing quick acquisition of supplies to minimize the business interruption					
5	Maintaining a proper match between the requested supplies of telecom items and the volume of supplies					

No.	<b>III. Transportation Management Practices</b>				
1	Delivering the right product to the right person at the right time				
2	Efficient transportation of telecom product to maximize the business efficiency.				
3	Quick transportation of telecom product to minimize the cost of operation				
4	Using various transport optimization models to deliver products with least possible cost				
5	Using multimodal transportation in non-emergency conditions to achieve flexibility and resilience				
<b>IV. Warehouse Management Practices</b>					
1	Availing appropriate warehouses to store product for sells				
2	Ensuring the accessibility of the warehouse to deliver the perfect order in the region				
3	Delivering the right product in the right quantity by using the warehouse to properly pick and dispatch products				
4	Ensuring the product leaves the warehouse clean and damage free for efficient delivery to the customers				
<b>V. Distribution Management Practices</b>					
1	Distributing product based on the demand for them and on the existing stock				
2	Ensuring effective distribution by using reliable transportation system				
3	Proper organization of the distribution team by encouraging the use of on the spot situational decisions				
4	Using a well-established distribution center to minimize cost and ease distribution				
5	Providing appropriate training to the distribution team to make sure that they execute their duties at high level of passion and commitment				

b. Level of agreement on logistics challenges

According to various literatures the common challenges faced by organizations are presented below. Please rate the logistic challenge that your company faces using the following 5 point scales. Put a tick mark (√) on the appropriate response category:

1. Never faced 2. Poorly faced 3. Moderately faced 4. Well faced 5. Extensively faced

No.	Internal Challenges	Rating				
		1	2	3	4	5
<b>I. Recognition of the importance of logistics</b>						
1	Focus on program services rather than investment in systems and processes					
2	Occurrence of unanticipated logistics bottleneck causing unnecessary delays					
3	Exclusion of logisticians from the decision process					
<b>II. Employee availability &amp; motivation</b>						
1	Prevalence of high level of staff turn over					
2	Lack of skilled manpower in the logistics department					
3	Lack of knowledge sharing through group brainstorming sessions & regular logistics workshop for staff motivation					
<b>III. Inadequate use of technology</b>						
1	Restricted use of information technology for decision making					
2	Inadequate use of automated systems or mechanisms to increase logistics efficiency					
3	Lack of investment in assistive technologies that support information flow					

<b>IV. Limited collaboration</b>					
1	Ability to disseminate accurate and timely information is not satisfactory				
2	Quality and speed of information flow is below the standard				
3	Lack of access to necessary logistics information from the data base of other organizations				
<b>External Challenges</b>					
<b>I. Legislative Challenges</b>					
1	Accessibility and security situation doesn't allow to operate freely in all areas				
2	Government law and regulation is strict and challenges logistics operations				
3	Prevalence of conflicting interest between the organization and the government				
<b>II. Economic Challenges</b>					
1	Infrastructural conditions affects telecom logistics operations				
2	Lack of local suppliers that avails telecom product during shortage of forex				
<b>III. Technological Challenges</b>					
1	Difficulty of coordinating and managing multiple players due to lack of technology				
2	Inadequate technological facilities to expedite information flow between the customers and staff				
<b>IV. Socio-Cultural Challenges</b>					
1	Societal and cultural factors hinders distribution of telecom product				
2	Prevalence of staff deployment problems related to community resistance				
3	Lack of support to the distribution team from the local communities				