ADDIS ABABA UNIVERSITY

SCHOOL OF COMMERCE

DEPARTMENT OF LOGISTICS & SUPPLY CHAIN MANAGEMENT

Assessing Logistics Practices in Textile and Apparel Industry

The Case of Industry Parks around Addis Ababa Area

BY

SEWNET SEIFU

June 2019

Addis Ababa, Ethiopia

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A Thesis Submitted to Addis Ababa University college of Commerce in partial Fulfillment of the Requirements for the Award of the Degree of Masters in Logistics and Supply Chain Management

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Chairman, Graduate Studies	Signature and date
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External Examiner	Signature and date

Declaration

I, the undersigned, declare that this thesis entitled "Assessing Logistics Practices in Text and Apparel Industry: The Case of Industry parks around Addis Ababa area" is my original work and has not been presented in any of other university and that all sources of material used for the thesis have been duly acknowledged.

Sewnet Seifu	_____	_____
Name	Signature	Date

Statement of Certification

This is to certify that this thesis entitled as "Assessing logistics practice in the textile and apparel industry in the case of industry parks around Addis Ababa Area, is her original work and is suitable for submission for the award of Masters of Art Degree in Logistics and Supply Chain Management, done by Sewnet Seifu is an authentic work carried by her under our guidance. The theme embedded in this thesis has not been submitted earlier for the award of any degree or diploma in any other university to the best of our knowledge.

Tariku Jebena	_____	_____	Addis Ababa, Ethiopia
Advisor	Signature	Date	Place

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List of Abbreviations and Acronyms

IP – Industry Parks

EIC – Ethiopian Investment Commission

GDP - Gross Domestic Product

H&M - Hennes & Mauritz

SIDA – Swedish International Development Corporation

QR – Quick Response

BTE – Bureau of Transport Economics

FDI - Foreign Direct Investments

3PL – Third Party Logistics providers

IOTEX – Institute of Technology for Textile Garment and Textile and apparel Design

TIDI – Textile Industry Development Institute

ETGMA – Ethiopian Textile and Garment manufacturers Association

IPD – Industrial Park Development

GTP - Growth and Transformation Plan

GoE – Government of Ethiopia

EPRDF – Ethiopian People's Revolutionary Democratic Party

SAP – Structural Adjustment Program

Abstract

Logistics performance is significant in the textile and apparel industry because it is a valuable way of securing competitive advantage through enhancing operational performances since the sector is more complex, demanding and predicting changing styles and consumer demands is impossible to do. The purpose of this study is to assess and identify the current logistics practices in the textile and apparel industry in the case of industry Parks around Addis Ababa area. For the accomplishment of this study, the study was employed through descriptive design and quantitative and qualitative data was collected related with the extent of factories logistics practices using structured questionnaires and different secondary documents. The target population covers all the fourteen factories around Addis Ababa because the total population is small and seventy questionnaires were distributed but 61 respondents fully filled and return the questionnaire. The collected data was analyzed using descriptive statistics, and secondary document analysis is done for confirming the findings. The result indicates almost all the modern logistics infrastructures like usage of automated system in warehouse activities, wastage free utilization of materials system and using organized marketing research team to find new and potential suppliers are not applied by these factories for ease of logistics operation, and commonly logistics is practiced at the lesser extent. Even though the factories practiced the logistics activities in their day to day operations, most of the factories have no logistics department in their organizational structure. Foreign currency shortages, low efficiency of customs, lack of integrated system and low quantity of vehicles are found to be the critical challenges for industry parks. Finally, the researcher recommends, In order to have a good supply as well as customer integration factories should not accept orders which are above their capacity, familiarize measuring customer satisfaction level by continuous assessment, apply inventory control software and better design of warehouse to handle and manage their inventory and warehouse management generally it would be better for all stakeholders to work with equal commitment and sense of urgency to strengthen the logistics practice of textile and apparel industry and to improve the competitiveness of the sector in the international market level.

Key Words: Logistics, Logistics Practices, Textile, Apparel

CHAPTER ONE - INTRODUCTION

1.1. Introduction

This chapter gives a brief description of logistics, what logistics practice in textile and apparel industry looks like and the challenges on the logistics management in the textile and apparel Industry specifically in the case of industry parks around Addis Ababa Area.

1.2. Background of the study

In today's fast paced economic climate, many firms increasingly realize that globalization has made the world smaller and more competitive. A change in one place impacts another quickly. As such, firms are now looking at securing cost, quality, technological and other competitive advantages as a strategy to pursue in a globally competitive environment. One currently popular competitive advantage for firms is to promote and provide value to its customers by practicing logistics more efficiently than competitors. (Melkamu, 2016)

Best logistics practices represent an important option not only because they can lead to more efficient operations but because they can effectively increase customer loyalty. (Innis D and. LaLonde, B, 1994 as cited in Stanley, E. and Steven, R, 2015). Effective logistics operations can lead to more efficient operations that increase the firm's competitiveness and increase customer loyalty where distances are frequently greater and many environmental barriers increase the complexity and uncertainty of worldwide operations (Cilliers and Nagel, 1994 as cited in Mark Goh, 1998). Practicing logistics more efficiently and effectively increases the competitive advantage of the firm. Textile and apparel industry shares the same objective of making the best use of Logistics management because the textile and apparel industry is one of the world's most geographically mobile industries and has been one of the most dynamic and very volatile industries globally (Dicken, 2011).

Since 2010 the Ethiopian government put an effort to improve, support and expand the textile industry, both in serving the domestic market but mainly with the aim to export and be competitive at the global market (TIDI, 2014). The access to human labor, raw material and governmental support interested global business investors to come and invest in Ethiopia. (*Clara Alderin, 2014*)

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.

According to *Alderin, C. 2014*, the textile and apparel/textile industry is made up of complex global production network and due to the possibilities of minimizing the costs of production, many companies use suppliers located in developing countries. Ethiopia is one of these countries. According to ETIDI Value chain Roadmap, (2015) the global textile market has become increasingly accessible to developing countries including Ethiopia. As a result Ethiopia's advantages have been recognized globally and the industry has now parallel support and access both to the domestic and international markets.

The industrial park development and expansion plays as key instrument for attracting investment, promoting technology transfer, export promotion and generating employment; thereby achieving economic transformation. The industrial park development can significantly boost Ethiopia's attractiveness for investment and business, as demonstrated by intense interest to take up space in one of the parks that are under construction (IPDIE, 2018).

Due to the possibilities of minimizing the costs of production, many companies (like H&M, TCP, PVH, VF) outsource their production from suppliers located in developing countries. During the recent years Transnational Corporations (TNCs) have started to outsource textile production to African countries, one of them is Ethiopia. (*Clara Alderin, 2014)* There are different worldwide investors who are working on the field of textile and apparel industry who are interested to come and invest in Ethiopia; some of the investors are H&M, TCP, PVH, VF, New Look and etc... are bringing different textile producers who supply for them to come and start the business in Ethiopia.

One of the identified problems in the textile and apparel business of today is that much of the garments that are bought must be sold in the stores at discounted prices, which results in poor results such as, low sell-through percentage, stock-turnover and lost-sales. Logistics for textile

and apparel products are marked by a climate of uncertainty due to rapid changes in trends and fluctuating customer demand. For this reason, it can be an advantage to bring products to market as quickly as possible or retailers may be left holding unsalable merchandise because items have gone out of textile and apparel. Such logistic activities require different kinds of sourcing, production, and inventory management than are currently being used. A supply chain and logistics system must be integrated in order to reduce lead time. This imposes special requirements on the companies in the supply chain. (*Peterson,J, 2016*)

1.3.Statement of the problem

There have been considerable changes in the textile and apparel environment since the turn of the century. Globalization of markets has led to increased competition and the quest to develop new products and markets while reducing costs in the supply chain (*John Fernie, David B. Grant, 2015*).

Among the major problems contributing to the poor performance of logistics in the textile and apparel industry is lack of adequate knowledge and skills in managing logistics practices is the critical one (LIDI Annual report, 2013). A World Bank study by McKinno, Flothmann, Hober, and Bushch (2017) argued that developing countries like Ethiopia encountered many problems related to logistics sector. 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 et al. 2013*). He indicated that Ethiopian logistics system is characterized by poor logistics practices and lack of coordination of goods transport, low level of development of logistics infrastructure and inadequate fleets of freight vehicles in number and age, damage and quality deterioration of goods while handling, transporting and storage.

According to *Fekadu et al. 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.

A good logistics practice can increase a country's competitiveness and ability to attract foreign investments relative to its neighbors' (Cilliers and Nagel, 1994 as cited in Mark Goh, 1998). Therefore, studying the current logistics practices of textile and apparel industry in Ethiopia is very essential to make improvements on the poor logistics practices, for revising policies, and to add information for further researches.

As per ETIDI Value Chain Roadmap (2015), Ethiopia's textile and apparel sector suffers from different logistics practices like lack of sufficiently skilled manpower and specialists in the industry, despite the presence of a large labor pool in the country which leads to lower productivity and quality, which inhibit the ability of the sector to add value, meet buyer requirements and increase profitability. The other problem area in the textile and apparel industry is input supply, Inefficient Customs system leads to high costs and delays. The length of time required for trade procedures is just as worrisome, as it reduces the ability of the sector to respond flexibly to buyer demands after receiving an order. İn international markets it hinders the ability of enterprises to deliver goods in a timely fashion. As a landlocked country, Ethiopian goods must travel long distances before reaching the port of Djibouti, from where they are shipped throughout the world, despite Ethiopia's proximity to important markets and lower labor and electricity costs. The other causes of weak logistics practice in the textile and apparel industry are the road infrastructure, shortage of foreign currency, Energy shortages, and blackout.

As stated on the above statement, there are gaps in the logistic practice in different sector, the main purpose of the study is to assess how logistics is practiced in textile and apparel industry, to identify which logistic gaps are practiced in the textile and apparel industry from the above identified gaps and to mention how to fill the gaps in the sector.

Hence, the following research questions and specific objectives are used to assess the logistics practices on the textile and apparel industry and identify the challenges of logistics in the textile and apparel industry in Ethiopia.

1.4. Research Question

Based on the above problems stated, the following research questions will be raised:

1.4.1. How customer service practice is practiced in the textile and apparel industry?

1.4.2. How inventory management practice is practiced in the textile and apparel industry?

1.4.3. How Supply activity is practiced in the textile and apparel industry?

1.4.4. Do the Transportation activities well- practiced in the textile and apparel industry?

1.4.5. To what extent Warehousing practice is practiced in the textile and apparel industry?

1.4.6. What logistics challenges are faced in the textile and apparel industry?

1.5.Research Objectives

1.5.1. General Objective

The general objective of the research is assessing the logistics practices in the textile and apparel industry in the case of industry Parks around Addis Ababa Area.

1.5.2. Specific Objectives

The specific objective of the thesis will be:

- To assess the customer service practice in the textile and apparel industry.
- To describe the inventory management practice in the textile and apparel industry.
- To access the supply management practice in the textile and apparel industry.
- To examine the transportation practice in the textile and apparel industry.
- To analyze the warehouse practice in the textile and apparel industry.
- To identify the challenges of Logistics practice in the textile and apparel industry.

1.6. Scope of the study

As logistics practice has vast area of managerial activities it is difficult and unmanageable to study in all areas the study is focused on the logistics practices in the textile and apparel industry. Therefore, the scope of the study is delimited to specific to the logistics practice in textile and apparel industry located around Addis Ababa Area. To manage the sample size and

methodological part, the study considers only three industrial parks which have more experience in the logistic practice from the eleven industrial parks. These industry parks are the first IP in Ethiopia which are constructed from 2008GC to 2014GC one is owned by the government and the other two are private owned IPs.

The scope of the study is also defined to the factories point of reference towards: Customer service, Inventory management, Supply management, Transportation and Warehousing at the industry parks located around Addis Ababa area.

1.7.Significance of the Study

The study has significance for the government policy makers, factories working on textile and apparel sector and new investors by providing an insight on the practice of logistics in the textile and apparel industry and pinpoints the gaps and challenges in the sector. It support the factories to easily understand the gap on their logistics practices and take corrective actions that can enhance their capacity to get competitive advantage in the industry.

The outcome of the study also assists the government policy makers to examine the current policy toward the industry and to improve the policy accordingly. It also helps investors by giving a realistic idea and informational data on what to expect to start investment in Ethiopia.

The study also planned to serve as an input for future studies by giving a comprehensive starting point for future researches on the field of Logistics practice in the textile and apparel industry in Ethiopia and in addition, the study will also benefit the academic community as reference on the same field of study.

1.8. Limitation of the study

Due to time, distance and resource limitation the research is limited to some of textile factories located around Addis Ababa area only and that makes difficult to generalize the findings to all textile and apparel industries in Ethiopia. Since the research is focused on the selected logistics practices it is difficult to apply the finding to all logistics practices that are described by different researchers and authors

Also failure to get willingness of the respondent, busy schedule of managers, getting the correct answer from respondents and unavailability of supporting secondary data become challenging and takes long time for responses. However, a pilot study was administered in order to test for feasibility, validity and reliability of the research instruments.

1.9.Organization of the study

This section of the thesis is outlining the components of the research.

The research paper is organized with five chapters. Chapter one composed of introductions which deal with the detail explanation on the background of the study, statement of the problem, research questions, general and specific objectives of the study, significance of the study, scope, limitation and organization of the study.

The second chapter which is literature review which reviews basic and relevant related literatures to the logistics practices that are done previously by other researchers and the conceptual framework will be presented in this chapter.

In chapter three, type and design of the research, the research methods, sample and sampling technique, sample size, data source and type and methods of data collection addressed.

The fourth chapter contains result and findings which focused on the data analysis and interpretation.

The last chapter, which is the conclusion, deals with the summery, conclusion and recommendations of the study.

1.10. Definition of terms

The conceptual and operational definitions will be mentioned under this section.

- **Logistics**: is 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*)
- **Textile -** is a flexible material consisting of a network of natural or artificial fibers (yarn or thread). Textile also refers to the yarns, threads and wools that can be spun, woven, tufted, tied and otherwise used to manufacture cloth. (Wikipedia)
- **Apparel** – means clothes, especially formal clothes worn on an important occasion.
- **Industry Parks/Park -** An industrial park is an area Parked and planned for the purpose of industrial development. An industrial park can be thought of as a more "heavyweight" version of a business park or office park, which has offices and light industry, rather than heavy industry. (Wikipedia)

- **Logistics Management**: is a supply chain management component that is used to meet customer demands through the planning, control and implementation of effective movement and storage of related information, goods and services from origin to destination. Logistics management helps companies reduce expense and enhance customer service. (*Rouse, 1997*)
- **Practice**: is the act of rehearsing a behavior over and over, or engaging in an activity again and again, for the purpose of improving or mastering it (Wikipedia)
- **Challenges**: is something that needs a lot of skill, energy, and determination to achieve or deal with (Macmillan dictionary). Cambridge dictionary defines challenge as something that needs great mental or physical effort in order to be done successfully and therefore tests a person's ability.

CHAPTER TWO – RELATED LITERATURE REVIEW

2.1 Introduction

The Literature Review discussed about Logistics in detail from historical background of logistic to definition and role of logistics and logistics actives will be discussed in detail. Then it will explain logistic practices in textile and apparel industry, the starting point of textile and apparel industry in Ethiopia and the challenges of logistic management in textile and 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 textile and apparel industry.

2.2 Review of Theories and Concepts

2.2.1 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. (*Ravi Kain & Ajay Verma, 2017)*

According to Matiwos, (2013) Logistics is what happens in the supply chain. Logistics activities (customer response, inventory management, supply, transportation, and warehousing) connect and activate the objects in the supply chain. 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 (*Tseng, Yue, & Taylor, 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.

2.2.2 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.

2.2.3 Importance of Logistics practice

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 (Tilokavichai & Sophatsathit, 2011).

Fugate, at el., (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.

Generally, a good logistics management used as a key enabler which allows a company to gain and maintain its competitive advantage and ensure maximum customer satisfaction.

2.2.4 The textile and apparel industry in Ethiopia

Textile and apparel manufacturing is accessible to establish in most countries, even at low levels of economic development because it is a labor intensive industry (*Dicken, 2011*). According to MacKinnon & Cumbers, 2007, relocation of production has changed dramatically globally. Until the 1960s and 1970s, textile production was mainly domestically manufactured in Europe. This shifted in the 1980s when production started to be outsourced to South East Asia. During the 1980s and 1990s China dominated the textile manufacturing which employ around 3.6 million people.

Sheresta et al. (2008, p. 5) states that Sub-Saharan Africa can be considered as a territory with massive potential because of all the vital resources and cheap labor, compared to other regions in the world, even south East Asia.

Africa is internationally perceived as the next sourcing destination for textile and apparel production. With access to the raw material, large and growing population, strong government support and increasing international investments, the textile and leather industry got the potential to compete with Asia (Source of Africa, Responsify News, 2013).

A conscious move to stimulate industrial growth in Ethiopia began only in the mid-1950s with the formulation of three times five-year plan which covered from 1958 to 1962 and 1963 to 1973. The implementation of these initiatives attracted foreign investors and gave boost to the manufacturing sector in Ethiopia. (*World Bank, 1985*)

The nationalization and continued systematic restriction by the government policy since 1974, slow the private sector from engaging in major economic activities had virtually reduced the emerging vibrant sector into micro- and small-scale manufacturing activities.

Since 1991, EPRDF (Ethiopian People's Revolutionary Democratic party, adopted various economic reform measures under the structural adjustment program (SAP). The aim of the SAP was to shift resources into industrial sector that has clear comparative advantage over the other sectors and eliminating insufficient use of resources by public enterprise. (*Gebreeyesus, 2013*)

The Ministry of Industry is the major entity tasked with coordination and implementation of the industrial policy. Various sector-specific institutes have been established or upgraded under the Ministry of Industry to oversee the development of the priority sectors.

The Ethiopian government has through its agricultural development led an industrialization economic policy where the government has implemented new policies and strategies. One strategy is prioritizing the textile industry, where the choice is made due to rich natural resources, as raw cotton, power supply, as well as a high population of youths. The country also has a tradition of weaving textile production. Additionally Ethiopia has a rich textile spinning and weaving history (TIDI presentation, 2011). In 2010 the government initiated the Textile Industry Development Institute (TIDI) with the aim to support and strengthen the textile industry in textile, garment and the cotton sectors.

Since 2010 the Ethiopian government has put effort to improve, support and expand the textile industry, both in serving the domestic market but mainly with the aim to export and be competitive at the global market (TIDI, 2014). Ethiopia has potential of building a textile

industry with governmental support, offering low-cost production, raw material and with a growing young population eager for jobs (Responsify, 2013).

The government in Ethiopia affects the textile and apparel industry in many ways, mainly in designing the arena through initiating strategies for the textile cluster to expand and strengthen its production. Some of these policies are; the establishment of TIDI, supporting the education system and regulations such as second-hand import. Therefore the role of government is central in the textile cluster. Most textile enterprises in Ethiopia are situated in densely populated large or medium cities. Out of the total textile enterprises in Ethiopia, Most of them are in Addis Ababa, the capital city, others textile enterprises located in Amhara, Oromia, Tigray and Southern (S.N.N.P) regions. Their main engagements of companies are spinning, weaving, dyeing and finishing. The Ethiopian textile industry is the third largest manufacturing industry, only second to the food processing, beverage and leather industry according to Alderin, C. 2014.

As per the report by EIC 2019 indicated that there are about 11 industry Parkss in Ethiopia which are operational currently and out of them 6 are government owned IPs (Bole Lemi I, HawassaI Mekelle, Kombolcha, Adama and Jimma Industrial Parks and 5 are private owned IPs (Eastern, Huajian, Vogue, DBL and George Shoes Industrial Parks. There are 11 additional Industrial parks under construction which are owned by government and private

Fig1. Industrial Parks in Ethiopic

Source: EIC March, 2019

The textile and apparel industry is used as a bridge for development, because it integrates the agriculture with the industry. It is labor intensive, starting from cotton cultivation to textile and apparel product, many people get employed. From all these things Ethiopia can be benefited. A critical thing is unemployment, but it will be solved by industrialization. Poverty's reason is unemployment so I think when you get employment you can survive. That's why textile industry is a key to reduce poverty (*Addisu Ferede, Scientific director IOTEX Bahir Dar University, 2013*).

Even though countries, such as Ethiopia that have assets needed, the textile industries located in developing countries have been afflicted by exploitative production processes where hard working conditions is usual.

In its Growth and Transformation Plan (GTP), the government of Ethiopia (GoE) has already highlighted industrialization as a key to sustaining growth and as an impetus for economic structural transformation. More importantly, the GoE gives special attention to manufacturing development in particular and industrialization in general. Thus, massive expansion of domestic and foreign direct investment in manufacturing is expected to drive the development of manufacturing industry. (*Alebel, Mulu, Girum & Berihu, 2017*)

2.2.5 Components of Logistics 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, Theo notteboom, 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 (*Bowersox, Closs and Drayer, 2005, as cited in Wescley and Ricardo, 2011*).

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

2.2.5.1 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 (*Frazelle, 2010*).

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 (*Adriana & Daniela 2010*).

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

2.2.5.2 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.

2.2.5.3 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 Fasika, Klaus and Marcus (2014) 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.

2.2.5.4 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*)

2.2.5.5 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.

2.2.6 Recent Trends in Logistics Practices

According to J. Roy, 2001 as cited in shiromi, 2008, the logistics practices are dramatically changed due to the volatility of the business environment, intense competition and

improvements in technology. The major recent logistics practice trends by different scholars are described as follows:

2.2.6.1 Quick Response (QR)

Martin, 2011 define QR as the umbrella term for the information systems and the logistics practices that combine to provide the right product in the right place at the right time. According to martin, in the case of fashion industry the aim of QR is to link the retail sales with the textile and apparel manufacturers and manufacturers with suppliers.

The level of quick response (QR) implementation by fashion retailers by exploring its impact on replenishment processes as discussed by Birthwhistle, 2003. He found that information technology is particularly important in driving customer responses. On the other hand, Walters (2008) argues that demand chain management with effective response management results in high level of customer satisfaction.

As per the study on the experiences of 50 manufacturing companies participating in a Government-funded program in Australia which is carried out by Marcia (2000) found that development of effective logistics practices will require the adoption a range of QR enabling practices and technologies by manufacturers and upstream suppliers.

2.2.6.2 The development of Electronic Commerce

The standard of logistics practices is uplifted through different electronic technologies like Fax, Email, voice mail, Electronic Funds Transfer (EFT), internet, intranet, image processing, barcode and electronic data interchange (EDI) (Glauser, 2005 as cited in Shiromi, 2008). According to the study conducted by Fakhraddin (2012) on Tabriz, Tehran, Kurdistan and Esfahan (Iran) firms operating in the shoe manufacturing industry finds that reducing the lead time has a positive impact on new shoe products. In this study it has been pointed out that the adoption of advanced ICT tools, such as Enterprise Resource Planning (ERP), significantly reduce lead time of most of the logistics and producing processes of the shoes manufacturing industry. Thus, application of ICT tools can be considered as one best logistics practice.

Srivastava (2006) on his study indicated that the Indian economy is currently experiencing a boom in logistics sector due to the rapid growth in ICT. Similarly, a survey made on 200 top managers of logistics and transportation in the United States by James and Williams, 1999, as cited in Shiromi, 2008 pointed out that information and communication technologies are the most important success factor in their domain.

The logistics information capability to facilitate seamless flows of timely information is crucial in improving the efficiency of logistics practices and it can even reduce the demand for better transport infrastructure (Kang and Kwong, 1997 as cited in Goh and Pinaikul, 2002).

2.2.6.3 Outsourcing of Logistical services to third party providers

According to Shiromi (2008) with the globalization of markets, companies are increasingly focusing on their core competencies. He argues that if they feel logistics practices of the organization do not add adequate value, or in the worst case the function dilutes the overall value they would not hesitate to outsource it to a 3rd party logistics facility.

2.2.6.4 Cross Docking

Cross docking is the practice of expediting the flow of product from receiving to shipping with a minimum of handling in between (Shiromi, 2008). He indicated that to enable proper cross docking system there should be sound processes, supply chain relationships and clearly established systems like automated material handling, Warehouse Management Systems (WMSs), order processing systems, and quality controls systems.

2.2.6.5 Collaborative Planning Forecasting and Replenishment (CPFR)

According to Framling and Smaros (2001) CPFR is a model that offer guidelines for developing collaborative processes that enable trading partners to do joint planning and demand forecasting, and to synchronize their material flows according to end-customer demand.

2.2.6.6 Human Friendly Logistics

The Golden Rule – “treat people the way you would like to be treated” is what mean human-friendly logistics (Frazelle 2002).

2.3 Review of Empirical Literatures

2.3.1 Logistics Practice

The available empirical literatures on logistics research have conceptualized (defined) and further measured logistics practice and challenges in various ways.

2.3.1.1 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, Juma, & Mathooko, 2013).

Fekadu (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 including textile processing firms, 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*)

2.3.1.2 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 observe 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.

2.3.2 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 et al. 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 Birkinesh (2012) 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 competiveness 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).

2.4 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

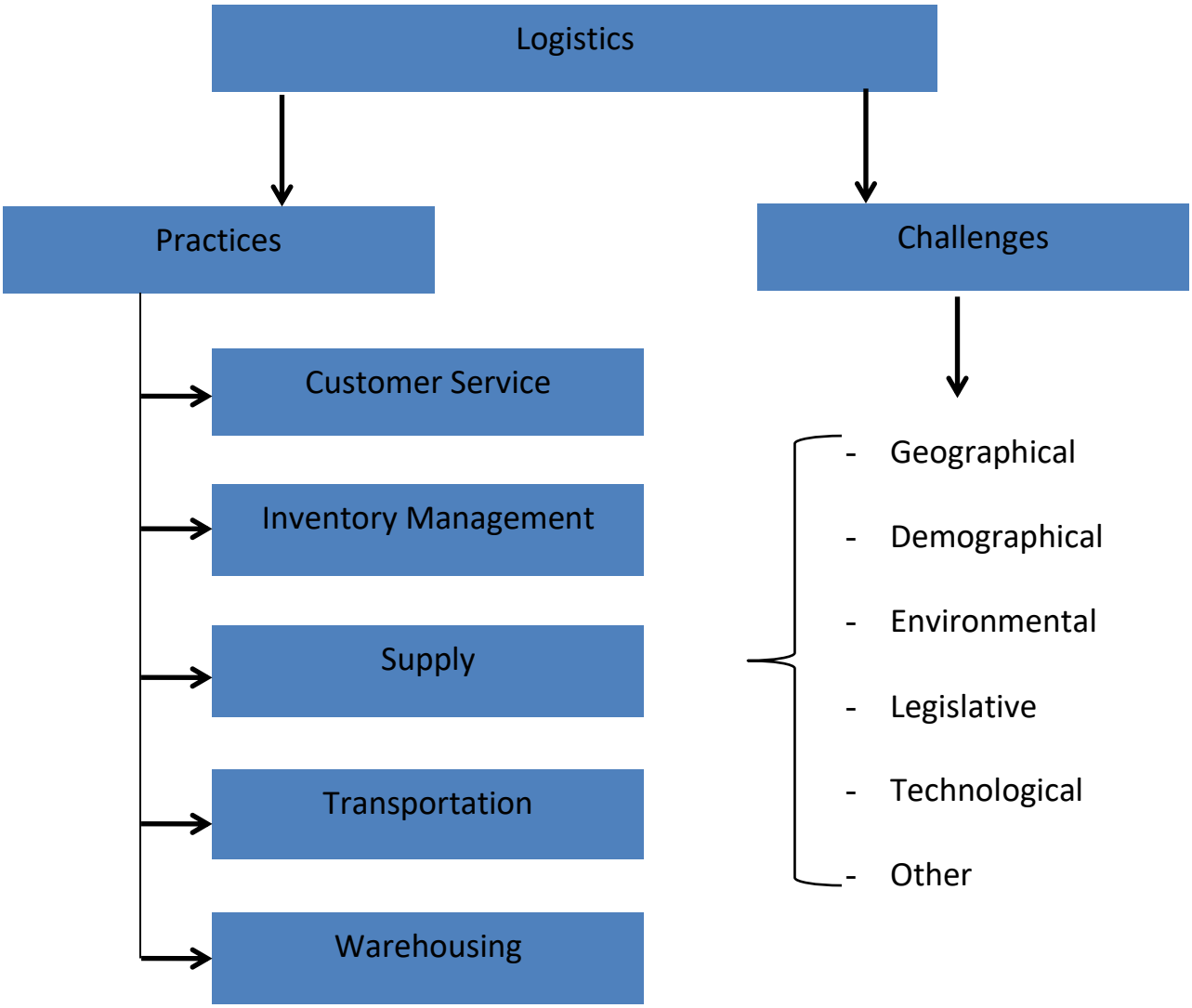

Fig2. Conceptual Framework of the study: Adopted from Frazelle (2002) and Neil (2011)

CHAPTER THREE – METHODS OF THE STUDY

3.1 Introduction

This chapter sets out the methodology that was used for the study, which involves the research approach, the research design, sample and sampling techniques, source type and tools/instruments of data collection, procedure of data collection and methods of data analysis. After giving a theoretical demonstration of each part of the methodology, the researcher explained why and how she used these approaches to conduct the research.

3.2 Research Design

Descriptive type of research design is employed in the study because the main objective of the study is to describe the logistics practice in the textile and apparel industry and related logistics challenges. Descriptive design is useful for describing the data collected in research studies and to accurately describe the variables under observation.

3.3 Research Approach

The research adopted mixed approaches which (qualitative and quantitative approach) which is often the best way of handling research questions through triangulation (Russel, 2005 cited in Ahmed, 2005). The study 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 Population and Sample

As per the report by EIC 2019 indicated that there are about 11 industry Parks in Ethiopia which are operational currently and there are 11 industry Parkss under construction. From operational IPs, 6 are government owned IPs (Bole Lemi I, Hawassa I, Mekelle, Kombolcha, Adama and Jimma Industrial Parks and 5 are private owned IPs (Eastern, Huajian, Vogue, DBL and George Shoes Industrial Parks. Within this IPs there are different factories that are producing textile and

apparel products for export and local consumption there are 11 factories in Bole Lemi, 21 factories in Hawassa, 9 factories in Adama, 6 in Kombolcha, 5 in Mekele, 1 in Addis and 1 factory in Jimma industry.

The study targets on three IPs one from government and two from private owned industries which are Bole Lemi I, George shoes and Eastern industrial parks. These Industry parks are the first to finalize the construction and fully operational since 2008 and 2014 respectively (EIC report 2019). The researcher believes that IPs practiced the logistics activities for long time than other industry parks that will help to understand what the logistic practice and its challenges looks like in the textile and apparel industry. 14 factories located in the three industry parks and the participants are the one who are working in the fields of Logistics and sourcing/Merchandize departments. More specifically from the fourteen factories, 5 employees from each factory who are department managers, Supervisors/assistances and officers are selected participants in the study as they are well aware of the logistics practices and easily observed the related challenges.

As the total population is small in number which is 70, the study does cover all the total population of the study and census method is used.

3.5 Data Sources and Types

The required data for the study is collected through both primary and secondary data collection method to achieve the objective of the study. The primary sources of data were collected from respondents through structured open ended and close ended questionnaires in addition, the secondary data is collected from different available documents and reports related to the textile and apparel industry.

Primary data for the study included data of respondents to questionnaires. Quantitative data collected through survey method particularly through semi-structured questionnaire. Secondary data was also gathered from the websites, journals, and books along with different related studies about practice and challenges of logistics to supplement the research.

3.6 Data Collection Procedures

In order to obtain the relevant and adequate information the researcher was used the questionnaire as instruments of data collection. The questionnaire contains open ended which the respondents can easily mention their idea and close ended questionnaire which is easy for respondents as it has small set of responses that generate precise answers to develop the study.

In designing the questionnaire, a five point likert-type scale was used to provide the extent of the respondent's agreement on the practice of logistics and the challenges of logistics in different manufacturing firms found by different researchers are inculcated and factories are given chances to select from each category what they observe as logistics challenges in their day to day operations.

In the questionnaire the logistics practices are grouped into five constructs that are adapted from Frazelle (2002). They are customer service (5 items), inventory management (5 items), supply management (5 items), transportation (5 items), and warehousing (5 items). Totally 25 best logistics practices are included in the questionnaire.

And for the logistics challenges, the six category of logistics challenges classification was applied from Neil (2011). Which are Geographical challenges (4 items), Demographical challenges (5 items), Environmental challenges (3 items), Legislative challenges (7 items), Technological challenges (6 items), and other challenges (5 items). The questionnaires are adopted from different researchers who used the same questions to assess logistic practice and logistics challenges in different sector with small amendments to make the questions easy for respondents.

3.7 Reliability Test

Reliability refers to the extent to which data collection techniques or analysis procedures yield consistent findings (Saunders *et al*., 2007). Dunn (2001) also defines reliability as a measure of stability or consistency across time. Before going to data presentation, analysis and interpretation; Cronbach's Alpha was calculated as part of the reliability test to assess how valid the results were and should produce similar generalized results if the sample size were increase (Field, 2006).

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.

Table4: Cronbach Alpha Value

S. No	Variables	Cronbach's Alpha Value	Number of items
1	Customer Service	.710	5
2	Inventory Management	.762	5
3	Supply	.748	5
4	Transportation	.712	5
5	Warehousing	.899	5

Source: *SPSS Output, 2019*

The Alpha value ranges from a maximum of 1.0 for a perfect score to minimum of zero, good measure of the alpha should be 0.70 or higher (Neuman, 2007). According to the Cronbach's Alpha values presented in table 4.1, the value of individual variables ranges from minimum 0.710 to maximum value of 0.899.

Therefore, the researcher concluded that the data has a high level of internal consistency and is reliable for further analysis.

3.8 Data Analysis

As the study collected both qualitative and quantitative data, the data was analyzed according to its type. The required data collected through the data collection tools is edited first through field and office editing and the edited data is coded.

For data gathered from quantitative data suing questionnaires has been analyzed through descriptive statistics mean and standard deviation and frequency and percentage supported by SPSS (Statistical Package Program for Social Sciences) software version 20.0 and for qualitative data document analyses were done and use it to provide explanations, understanding and interpretation.

Generally, data presentation and interpretation applied tables in order to display the collected data in a concise and meaningful way. Depending on the result of the analysis, interpretations and discussions were made to clarify the issue. At the end major findings of the study reported and recommendations forwarded.

3.9 Ethical consideration

In this thesis the researcher adheres to all ethical and legal issues and handles it professionally. A formal letter from Addis Ababa University, School of commerce send to industry Parks. And the names of employees selected in the sample are not mentioned in the questionnaire for confidentiality purpose. Also the researcher respect the respondents right to participate or not at any time.

CHAPTER FOUR – RUSULTS, DISCUSSION AND INTERPRETATION

4.1 Introduction

The purpose of this research is to assess the logistics practice in the textile and apparel industry. The findings of the study are presented in this chapter, the data obtained from the primary data source using structured questionnaires and secondary data are presented.

In order to conduct this research a total of 70 questionnaires were distributed to 14 factories in the industry parks around Addis Ababa Area, each getting 5 questionnaires. From this 11 factories have completed and returned the questionnaires while 3 factories one didn't respond at all and the other two didn't complete the questionnaires so three factories with 11 questionnaires are excluded from further analysis, explicitly 61 responses in all were collected out of the 70 questionnaires administered. This indicated that the response rate was 87.14%. The rate is satisfactory according to the argument of Cooper and Schindler (2003) that sets a response rate of 30% to 80% as adequate.

The data collected using quantitative method was tabulated and analyzed using SPSS version 20. Data were sorted and ranked according to the mean/standard deviation and frequency/percentage values to be dealt with descriptively to provide insight into the practice of logistics and its challenge in the textile and apparel industry in the industry Parks around Addis Ababa Area.

The chapter has two sections:

Section1: Summarize the response rate and describe the demographic data of employees by descriptive statistic (Frequency and Percentage)

Section 2: Analyze the practice of logistics and its challenges Mean/Standard Deviation and frequency/percentage value of descriptive statistics.

4.2 Respondent 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. In the following table, the demographic statistics of respondents is presented. These include Gender of respondents, age, educational level and experience of respondents. To get information

on these issues the respondents were asked and their responses are analyzed as follows. The results of this survey processed with the help of SPSS software.

The gender information of sampled respondents, 57.4% of sampled respondents was Male and 42.6% were female. This indicates that majority of employee in this sector are Male.

Regarding the age group of the respondents, the larger portion of the respondents that is 27 (44.3%) falls within the age group of 26-35, 19 respondents (31.1%) falls within the age group of 36-45, 10 respondents (16.4) falls within 18-25 and the remaining 5 respondents (8.2%) of age group less than 46-55. From this the researcher conclude that 46 (75.4%) of the factory is filled with most actively working age group that can be able to transform the mission and vision of the

Among the 61 respondents, 80.3% hold bachelor degree in the academic qualification, 19.7 % hold a master's degree. The result shows that most of the respondents furthered their study at higher level. Most of the respondents involved in this study were managers and followed by the Assistance Managers and Supervisors. In general, the senior positions were actively involved in this study.

In terms of years in the factory, almost half of the total factories (47.5%) had experience in the sector from 6 to10 years, 29.5% of the respondents worked for from 11 to 15 years, 11.5% of the respondent worked for 16-20 years whereas 9.8 % and 1.6 % of the respondent worked for 0 to 5 years and more than 21 years respectively.

All of the respondents either have direct or indirect involvement in logistics practices including transportation, merchandising and warehousing activities. Therefore, majority of respondents are seen as experienced enough and sufficiently knowledgeable about the logistics practice in their firm.

Table 4.1 Respondent profile

SN.	Description	Characteristics	Frequency	Percent
1	**Gender**	Male	35	57.4
		Female	26	42.6
2	**Age**	18-25	10	16.4
		26-35	23	37.7
		36-45	15	24.6
		46-55	12	19.7
		56 and Above	1	1.6
3	**Work Experience**	0-5	6	9.8
		6-10	29	47.5
		11-15	18	29.5
		16-20	7	11.5
		21 and Above	1	1.6

Source: *SPSS Output, 2019*

4.3 Descriptive Data Presentation and Discussion

The data collected through questionnaire have been analyzed, presented and discussed in order to give meaningful information. Data are presented in Tables and I have also analyzed the data with the aid of statistical tools, descriptive statistics.

Both Quantitative and qualitative data analyze method have been used to analyze the data under study. Data obtained from questionnaires and documentary sources were carefully checked to ensure completeness, accuracy and uniformity.

The research questionnaire designed using 5 point Likert scale to collect appropriate responses, in relation to this the respondents indicated the extent they agree with the statements by choosing: 5- Strongly Agreed, 4-Agreed, 3-Neutral, 2- Disagree and 1- strongly disagree. Based on the response of the respondents Mean computed on below in the below section. A mean (M) score of 0-1.5 means that the respondents Never practiced, between 1.50 to 2.50 implies respondents' Poorly practiced, 2.50 to 3.50 means the respondents were Moderately practiced, 3.50-4.50 means respondents were well practiced and a mean above 4.50 represent the

respondents are Extensively practiced. In the process of examining of the data, standard deviation was used. Small standard deviations (relative to the value of the mean itself) indicate that data are close to the mean whereas a large standard deviation (relative to the mean) indicates that the data points are distant from the Mean. Standard deviation is a measure of how well the mean represents the data (Field, 2009).

4.3.1 Logistics Practices of Textile and Apparel Industry

Concerning the logistics department all of the factories mentioned that they have a logistics department. Most of the factories have directly named logistics and others mentioned that they are practicing logistics activities in shipping, sourcing, marketing, production and purchasing departments.

4.3.1.1 **Customer Service**

Among 61 responses of distributed questionnaires, 40 respondents' i.e. 8 factories indicated that they have a customer service policy. Based on the reply, it is observed that the most common answer was that the companies have any customer service policy but it is not properly managed and evaluated to meet customer requirements.

Table 4.2: Customer Service practice

Descriptive Statistics **N= 61**		
	Mean	**Std. Deviation**
The employees in customer service area has enough knowledge to serve customers	3.98	.532
The company uses up to date information for forecasting customer's needs	3.70	.803
The company applies electronic communication like EDI or ERP with other section for joint planning	4.02	.562
Orders are fulfilled in the promised date	2.79	.897
There is a well-developed tool for measuring and evaluating customer satisfaction level	2.79	.897
Ground Mean	**3.46**	

Table 4.2 illustrates the distribution of customer service practices mean scores and standard deviation.

The mean for The Company applies electronic communication like EDI or ERP with other section for joint planning found to be the leading practice among all of the customer service practice, with mean score 4.02 which indicates it is well practiced.

Other customer service practices that have been also well practiced are: The employees in customer service area have enough knowledge to serve customers (3.98) and the company uses up to date information for forecasting customers' needs (3.70).

The least practiced customer service practices are Orders are fulfilled in the promised date and there is a well-developed tool for measuring and evaluating customer satisfaction level which score same (2.79). This finding revealed that most of the factories face a problem to meet the customer's order in the promised date and they don't have well-developed tool for measuring and evaluating customer satisfaction level. The document found from six factories indicated that due to inability to fulfill the ordered quantity of customer on time, they are forced to ship the cargo via air and sometimes the orders are cancelled which lead them to extra expenses and bad relationship with their customer.

Among the customer service practices the four highest values of standard deviation were observed for, there is a well-developed tool for measuring and evaluating customer satisfaction level (0.90), orders are fulfilled in the promised date (0.90), and items of the company uses up to date information for forecasting customer's needs (0.80) of which showed low inconsistencies among respondent firm responses than other items.

This signifies that for the above items, there is a higher difference in the level of practice by the factories; specifically, some factories perform them highly, whereas others to a small extent.

In contrast, the lowest standard deviation was found for The employees in customer service area has enough knowledge to serve customers (0.53) and The company applies electronic communication like EDI or ERP with other section for joint planning((0.56) which indicates that there is low variation on responses for this item.

In general, customer service activities are practiced in a medium extent by textile and apparel industry in Ethiopia.

4.3.1.2 Inventory Management

Inventory management practices were also assessed and the below table presents the results of the questionnaire on the inventory management practices in the respondent factories.

Table 4.3: **Inventory Management Practice**

Descriptive Statistics **N=61**		
	Mean	Std. Deviation
The inventory model used to determine the quantity ordered is based on real demand analysis	3.82	.940
The Inventory model used target to minimize overall total inventory costs like holding, ordering and stock out	2.79	1.002
Replenishment planning and inventory has a positive impact on customer satisfaction	3.84	.879
The Company has a system for wastage free utilization of materials inventory	2.72	.951
Materials in stock are correctly identified	3.98	.866
Ground Mean	**3.43**	

As shown above from the entire inventory management activities, Materials in stock are correctly identified, Replenishment planning and inventory has a positive impact on customer satisfaction and The inventory model used to determine the quantity ordered is based on real demand analysis are found to be well practiced with mean score of 3.98, 3.84 & 3.83respectivly.

However, the Inventory model used target to minimize overall total inventory costs like holding, ordering and stock out and the Company has a system for wastage free utilization of materials inventory are found to be practiced to the lesser extent with mean values of 2.79 and 2.72 respectively.

The documents found in eleven of the factories signified that, most of the factories followed a modern inventory forecasting procedure which allow them to know the stock and demand but most of them are not using automated system which make them to not know the exact amount of stock in the warehouse and they face shortage of raw material to fulfill the customer orders. Comparing individual items in the constructs, there were some differences among respondent's answer. The higher standard deviation values indicate that still there is a higher variation on responses given for all items in the inventory management practices.

Comparing individual items in the constructs, there were some differences among respondent's answer. The higher standard deviation values indicate that still there is a higher variation on responses given for all items in the inventory management practices.

For instance, The Inventory model used target to minimize overall total inventory costs like holding, ordering and stock out (1.00), the company has a system for wastage free utilization of materials inventory (.94) The inventory model used to determine the quantity ordered is based on real demand analysis (.94) shows the highest variation. This also indicates that for the above items, there is a higher difference in practice level by the factories; specifically, some factories perform them highly, whereas others to a lower extent.

In contrast Replenishment planning and inventory has a positive impact on customer satisfaction (0.88) and Materials in stock are correctly identified (.866) indicates a lower variation in responses among respondents.

In general, inventory management activities are practiced at a medium level by the textile and apparel industry

4.3.1.3 Supply

Following the supply practices of the factories are presented.

60 percent of the responding factories indicated that the first criteria for selecting their suppliers is price of products or service, availability of raw materials or services is selected by 38 percent of the responding factories as the first criteria for supplier selection and 21 percent of the respondent mentioned quality of raw materials or services is their first criteria for selecting supplier.

The finding indicated that the emphasis given for the purchase of the right quality raw materials is lower as compared to price of the raw materials by these firms. This shows also that are most of the firms are price sensitive.

92 percent of the firms showed that supplier responsiveness is the last criteria for selection of their suppliers. From this it can be understood that most of the firms are not worrying about the responsiveness of their suppliers.

The findings by Fasika and his Colleagues (2014) indicated that mostly supplier evaluation is made using the minimum price as the first criteria which is in line with the finding of this study.

Table 4.3: Supply Practice

Descriptive Statistics **N=61**		
	Mean	Std. Deviation
The company has an organized marketing research team to find new and potential suppliers	2.80	.928
The company create long-term relationships with suppliers	4.18	.764
The company target to minimize acquisition and logistics cost	3.80	.872
The company settle payment and close contracts on time	3.84	1.003
The company has an information communication technologies (E-procurement) and data base systems in facilitating procurement practices.	2.89	.950
Ground Mean	**3.50**	

In the supply practice the analysis shows that creating long-term relationships with suppliers (4.18), settling payment and close contracts on time (3.84) and target to minimize acquisition and logistics cost (3.80) are well practiced whereas, The company has an information communication technologies (E-procurement) and data base systems in facilitating procurement practices. (2.89)

and The Company has an organized marketing research team to find new and potential suppliers (2.80) are performed to a lesser extent.

The higher standard deviation values for all items indicate that still there is a higher variation on responses given for supply practices, and the level of practice in each factory is highly different.

Generally, the analysis signifies that there is a high level of long term relationship between suppliers and textile and apparel industry.

This also reveals that the factories have strong linkage with suppliers, and more efforts shall be made for sustainability of their relationship.

4.3.1.4 Transportation

The transportation practices of the factories are presented below.

For the transportation of cargo for export and import shipments all the factories used the service of freight forwarders. This shows that they outsource the transportation activity to the freight forwarders or transporters.

Table 4.4: **Transportation practice**

Descriptive Statistics **N=61**		
	Mean	**Std. Deviation**
The current transportation practice or system provides efficiency in logistics	**3.02**	**1.025**
The current transportation system (like timely delivery and safety) satisfy users	**2.85**	**1.030**
The company reach or applied economies of scale and economies of distance to minimize transportation cost per unit	**2.16**	**.860**
The transport service providers has sufficient transportation units	**2.00**	**.856**
The available trucks are enough for efficient logistics operation	**1.92**	**.714**
Ground Mean	**2.39**	

The result shows on the area of transportation practices, current transportation practice or system provides efficiency in logistics (3.02) and the current transportation system (like timely delivery and safety) satisfy users (2.85) are moderately practiced.

The company reaches or applied economies of scale and economies of distance to minimize transportation cost per unit (2.16), The transport service providers has sufficient transportation units (2.00) and The available trucks are enough for efficient logistics operation (1.92) are poorly practiced. Among the items under this variable, the two higher standard deviations were observed for the current transportation practice or system provides efficiency in logistics and the current transportation system (like timely delivery and safety) satisfy users (1.03).

In general, except from the current transportation practice or system provides efficiency in logistics (3.02) which moderately practiced the rest transportation activities are poorly practiced by the companies and their transporters.

4.3.1.5 Warehousing

Finally, the warehousing activates of the firms are presented as follows.

Concerning warehousing 100 percent of the factories are used private owned warehouses for storage of row materials and finished products.

Regarding material handling equipment usage 92.86 percent of factories explicitly 13 of them used conveyors, carts and forklifts, the rest 2 of the factories are used only forklifts.

Table 4.5: Warehouse Practice

Descriptive Statistics **N=61**		
	Mean	**Std. Deviation**
The design of the warehouse is easy to access items, free from damage of items and convenient to loading and unloading	**2.80**	**.980**
The design of the warehouse system is properly done to improve customer service and eliminate errors in warehouse operation	**2.97**	**1.032**

Warehouse operators are skilled to use computer and other technologies to perform warehouse activities	**3.07**	**1.063**
The Company has various dockets like internal request form, waybill, etc…	**3.98**	**.806**
Most warehouse activities are automated	**2.51**	**.849**
Ground Mean	**3.07**	

The warehousing practices are assessed and the analysis indicates that warehouse activities are automated (2.51), the design of the warehouse is easy to access items, free from damage of items and convenient to loading and unloading (2.80) and the design of the warehouse system is properly done to improve customer service and eliminate errors in warehouse operation (2.97) are not practiced well in the factories.

On the other hand using various dockets like internal request form, waybill, etc… (3.98) and Warehouse operators are skilled to use computer and other technologies to perform warehouse activities (3.07) are well practiced by these factories.

The high standard deviation values also show that there is an inconsistency in responses of respondents.

Generally, warehousing activities are moderately practiced, except warehouse activities are not automated by most factories.

4.3.2 Challenges of Logistics Practice in Textile and Apparel Industry

The respondents are asked to select what they believe is a logistics challenge, that are collected from different literatures, for their firm during their logistics operations, and the frequency and percentage of each category of logistics challenges are calculated and presented as follows.

Table 4.7: Challenges of Logistics

N=61

SN	Type of Logistics Challenge	Specific Logistics Challenge	Rank	Percentage
1	**Geographical Challenges**	Longer Distance	**1**	**82**
		Insufficient road development and maintenance	**2**	**62.3**
		Traffic congestion	**3**	**34.4**
		Difficult geographical location of some places	**4**	**19.7**
2	**Demographical Challenges**	Resistance to change	**1**	**70.5**
		Bad Human behaviors	**2**	**23**
		Growing concentration of population	**3**	**13.1**
		In appropriate culture	**4**	**0**
		Ageing of population	**4**	**0**
3	**Environmental Challenges**	Natural disasters like cyclones and floods	**1**	**29.5**
		Green logistics	**2**	**27.9**
		Climate changes	**3**	**18**
4	**Legislative Challenges**	Foreign currency shortage	**1**	**96.7**
		Regulation and lengthy bureaucratic procedures	**2**	**78.7**
		Low efficiency of customs	**3**	**78.7**
		Higher taxes	**4**	**50.8**
		Long lead time in port	**5**	**29.5**
		Funding disagreements	**6**	**26.2**
		Restriction on imported items	**7**	**9.8**

5	**Technological Challenges**	Lack of integrated system	**1**	**91.8**
		Costly new technology	**2**	**67.2**
		Poor exchange of information	**3**	**54.1**
		Insufficient logistics management capacity	**4**	**34.4**
		Lack of modern management techniques	**5**	**31.1**
		Inability to access and apply the growing logistics knowledge base	**6**	**9.8**
6	**Other Challenges**	Low quantity of vehicles	**1**	**80.3**
		Security issues like terrorism, Unrest	**2**	**52.5**
		Delay due to maintenance of roads	**3**	**34.4**
		Changes in fuel prices	**4**	**31.1**
		Short product life cycle	**5**	**8.2**

4.3.2.1 Geographical Challenges of Logistics

From the geographical challenges of logistics Longer Distance is ranked 1st with 82 percent of the respondents and Insufficient road development and maintenance is 2nd with 62.3 percent respondents as a higher challenge, whereas difficult geographical location of some places is the least rank which indicates that this challenge is not critical for them.

The finding indicated that for these factories longer distance during transporting the cargo form/to Djibouti port is the critical challenge.

4.3.2.2 Demographical Challenges of Logistics

The 1st score from the demographical challenges of logistics is resistance to change which is selected by 75.5 percent of the respondents. This reveals that there is high resistance for changes, like using modern technology for practicing logistics activities efficiently by the stake holders. Ageing of population and inappropriate culture are the least challenge in this category which is not selected by any factory.

4.3.2.3 Environmental Challenges of Logistics

The analysis made indicates that from the environmental challenges Natural disasters like cyclones and floods is found to be a medium challenge with 1st score, which is selected by 29.5 percent of the respondent.

Climate changes being a logistics challenge are chosen by only 18 percent of the respondents. This shows that environmental challenge is not a critical challenge with all categories.

4.3.2.4 Legislative Challenges of Logistics

The analysis indicates legislative challenges are the major critical challenge from all logistics challenges. Foreign currency shortage is the most critical challenge from legislative challenge which scores first with 96.7 percent of the respondents; Regulation and lengthy bureaucratic procedures and Low efficiency of customs are the second critical challenge which the second score value. Under this category most of the challenges are selected by many respondents.

4.3.2.5 Technological Challenges of Logistics

The finding shows that from the technological challenges of logistics lack of integrated system, which is the most critical challenge, is scored the 1st value with 98.8 percent of respondents. New technology expenses, which was chosen by 62 percent of the respondents which score the 2nd value as the second critical challenge for these firms.

However, Inability to access and apply the growing logistics knowledge base is chosen by only 9.8 percent of the respondents are not critical for them under this category with last score value.

In general, the challenges under this category are selected by most of the respondents next to legislative challenges. This shows that most of the challenges of logistics for the firms are found under the category of legislative and technological.

4.3.2.6 Other Challenges of Logistics

From this category Low quantity of vehicles, which score 1st with 80.3 percent of the respondents, is the most critical and Security issues like terrorism, Unrest is the second critical

challenge which is selected by 52.5 percent of the respondents with the 2nd score value. Most of these challenges under this category are external challenges that are difficult to control.

In general, the finding shows that from the geographical challenges of logistics longer distance (82 Percent), resistance to change (70.5 percent) from demographical challenges, Natural disasters like cyclones and floods (29.5 percent) from environmental challenges, foreign currency shortage (96.7 percent) from legislative challenges, lack of integrated system (91.8 percent) from technological challenges, and Low quantity of vehicles(80.3) from other logistics challenges are the most critical challenges of logistics in their category.

This indicates that most of the logistics challenges are highly concentrated around custom offices, and are more of legislative issues.

This also signifies that most of the challenges of logistics are beyond the control of the factories, and need coordination between all the stakeholders for reducing the impact of these challenges.

CHAPTER FIVE - SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The final chapter of the study presents the summary of the research findings and conclusion drawn from the analysis as well as the recommendation based on the finding results.

5.2 Summary of Findings

The study was aimed at analyzing the practice of logistics activities on the textile and apparel industry around Addis Ababa area. The specific objectives of the study include Customer service practice, inventory management practice, supply practice, transportation practice, warehouse practice and challenges of logistic practice in the textile and apparel industry. The data were collected from both primary and secondary sources. The primary data were generated from employees using questionnaires, while the secondary data were collected from brochures and different reports of Ethiopian Investment Commission. Descriptive statistics, mean, standard deviation and frequency analysis were used for analyzing the data.

According to the data analysis in the previous section, summary of the findings is presented as follows:

- Wastage free utilization of materials system, organized marketing research team to find new and potential suppliers and usage of automated warehouse activities are poorly practiced by the factories.
- Fulfilling orders in the promised date, measuring and evaluating customer satisfaction and applying different transportation system to satisfy users like timely delivery and safety are moderately practiced.
- Using knowledgeable employees to serve customers, Replenishment planning and inventory for customer satisfaction, identifying materials in the stock, settling payments and close contracts on time and using different dockets like internal request form, waybill are well practiced.
- Usage of electronic communication like EDI or ERP with other section for joint planning and having long-term relationship with suppliers are extensively practiced by factories

- The higher standard deviations obtained in most of the items indicated that there is a higher variation in respondent responses.
- Longer distance, foreign currency shortages, low efficiency of customs, lack of integrated system and low quantity of vehicles are the major challenges of logistics facing in textile and apparel industry.
- The age of population and inappropriate culture are not mentioned as a challenge of logistics by the respondents.

5.3 Conclusion

This paper aims to describe the extent of logistics practices and challenges in the textile and apparel industry. Based on the results of the study and the summary of findings the following conclusions are given.

- Textile and apparel industries are not practiced activities of wastage free utilization of materials system in the warehouse, organized marketing research team to find new and potential suppliers and usage of automated warehouse activities for easy access of items in the warehouse and improve customer satisfaction.
- The result indicated that using knowledgeable employees to serve customers, Replenishment planning and inventory for customer satisfaction, identifying materials in the stock, settling payments and close contracts on time and using different dockets like internal request form, waybill are well practiced by the factories in the textile and apparel industry.

- It is observed by the study, Logistics practices are not effective due to Longer distance to transport cargo from/to Djibouti, foreign currency shortages, low efficiency of customs, lack of integrated system and low quantity of vehicles
- Some of the issues which doesn't affect the logistic practice are the age of population and inappropriate culture

5.4 Recommendations

Based on the above study findings and conclusions drawn from them, the researcher suggests the following points as credible recommendation to the problem for action to be undertaken by each stakeholder at different levels.

- As per the collected data, orders are not fulfilled in the promised date and there is no well-developed toll for measuring and evaluating customer satisfaction level. In order to have a good supply as well as customer integration, factories should facilitate all required materials in advance and they should not take order which is above their capacity. Also factories must familiarize measuring customer satisfaction level by continuous assessment that enhance their good relationship with them as well as can get feedback for corrective action.
- The inventory management system of the firms can consider the real demand of the market, and plan using software which helps for efficient utilization of the available resources, minimize cost and reduce waste. They can apply different simple inventory control software to easily handle and manage their inventory level.
- Even if the respondent try to pretend on their relationship with supplier, the secondary data reviled that, most of the factories are price sensitive and use different service providers. In order to have a good supply as well as customer integration, the factories must have advanced mechanisms to choose supplier and build long term relationship.
- In order to enhance the activity in the sector, the factories should work closely with transport companies and freight forwarder to analyze the available truck against their order in advance. The government and transport companies also should work on making qualified and available trucks to the sector which transports the cargo to/from Djibouti.
- As per the collected data, all factories own their warehouse for storing of raw and finished products. But its poor design and non-automated activities affect its operation. It should be better to design the warehouse in such a way that is easy to access items, free from damage of items and convenient to loading and unloading to easily identify the required items and improve service for their customers.
- It is also recommended that the government should work on the quality of the road, giving priority on the road maintenance on time which delays the import/export process.

Also as Ethiopia is a land locked country it is better to see other opportunity with other countries than Djibouti to minimize the distance.

- Since it is one of the priority sectors that get a great consideration, the Government is expected to increase the efficiency of customs office operations and arrange adequate amount of foreign currency for import of raw materials for factories. Customs clearance procedures can be simplified so that factories waiting time will be reduced significantly. Also creating integrated system between different stakeholders in the sector increase the efficiency of the logistics practice.
- Generally, it would be better for all stakeholders to work with equal commitment and sense of urgency to strengthen the logistics practice of textile and apparel industry and to improve the competitiveness of the sector in the international market level.

5.5 Suggestions for further study

Based on the contractual responsibility, this study has focused only on 5 logistics practices and 6 categories of logistics challenges on the textile and apparel industry. However, as there are other logistics practices and challenges future researchers may expand the scope i.e. by including the stakeholders of these firms like Ministry of Industry, transporters and customs office, etc. is recommended. Other logistics activities like sourcing, manufacturing, etc shall also be studied in detail.

References

Alderin, C. Made in Ethiopia - *Challenges and Opportunities in the emerging textile industry in Ethiopia*, June 2014

Tiringo G. (May, 2013) *Supply Chain Management challenges and prospects in Ethiopian Leather industry*

Anna N, & Min Y, *Textile and apparel Supply Chain Management through cost and time minimization* T.-M. Choi, Editor, IGI Global, Hershey, PA, pp. 1-20.

Tiringo G. (May, 2013) *Supply Chain Management challenges and prospects in Ethiopian Leather industry*

LIDI *annual reports* 2013, 2014 and 2015

International Trade Centre, *Textile and Clothing Value chain road map of Ethiopia* (2016-2020)

Textile and apparel Products using Complete Garment Technology - A Case Study. J Textile Sci Eng 6: 232.

H&M looks to source clothing from Ethiopia – Addis standard / August 16, 2013 / 0 / 3.1k

Supply Chain Challenges in Apparel Industry and How You Can Fix Them – December 8, 2017

Website: https://www.k3software.com/single-post/2017/08/30/Supply-Chain-Challenges-in-Apparel-Industry-and-How-You-Can-Fix-Them , October 2019

Tsan-Ming Choi, 2012, *Supply Chain Management in Textiles and Apparel*

Fawad Z, and Adil Z, *Best Practices in Supply chain management at H&M*

Avizit B, M.M Israfil S, MD. Rifaul I & MD. Omar Faruk A, - *Supply chain management in garment industry* - Volume 14 Issue 11 Version 1.0 Year 2014

Cilliers and Nagel 1994. Logistics Trends in South Africa. International Journal of Physical Distribution and Logistics Management, Vol. 24 Iss7, pp. 4-14.

H&M Group sustainability report 2017

Ronald H. Ballou, 2006 , *The evolution and future of logistics and supply chain management* – V16, n. 3, p. 375-386,2006

Peterson J 2016, *Customization and Textile and apparel Logistics Effects of Flat Knitted*

Fredrik Nilsson, 2006, *Logistics management in practice – towards theories of complex logistics*, The International Journal of Logistics Management, Vol. 17 Iss 1 pp. 38 – 54

Mark Goh & Parooj Pinaikul, 1998 – *Logistics management practices and development in Thailand*

Patrick W, M.2016, *Influence of Logistics Management on Performance of Manufacturing firms in Kenya*

John F. & David B,G, 2015, *The Logistical Challenges Facing Textile and apparel Retailers – Study on Industrial Park Development*: Issues, Practices and Lessons for Ethiopia, Alebel Bayrau Weldesilassie, Mulu Gebreeyesus, Girum Abebe & Berihu Aseffa, 2017

Xiaodi, Dejene, Ciyong, Zhen, Jie, Eneyew, 2018) *Industrial park development in Ethiopia* case study report.

Ronald H. B, *The evolution and future of logistics and supply chain management*, v. 16m n.3, p.375-386, 2006

Michael Tracey, (1998), *the Importance of Logistics Efficiency to Customer Service and Firm Performance*, Vol. 9 Iss 2 pp. 65 – 81

Ethiopian Textile Industry Development Institute (2014). *Textile Industry Development in Ethiopia*: an Overview of Facts and Opportunities.

Ethiopian Textile Industry Development Institute (2015). *Textile and Clothing Value Chain Roadmap*

Industrial park Development in Ethiopia, Case Study Report, 2018

Fasika, Klaus and Marcus (2014), *Identifying the Characteristics of the Supply Chain Processes in Developing Country: A Manufacturing Industry Perspective*

Frazzle, E. (2002). *Supply Chain Strategy strategy-the logistics of supply chain management.* New York: McGraw-Hill.

Goh and Pinaikul (1998), *Logistics management practices and development in* Thailand, Logistics Information Management.

Kent (2001), *Global Logistics Management: p.17*

LIDI *annual reports* (2013, 2014 and 2015).

Vasco, S. and Andrew, P. (2012). *A Comparison of FMCG Logistics practices in the UK and South Africa*, Cardiff University.

World Bank Report (1991)

Appendix I - Industrial Parks in Ethiopia (as of February 2017)

Industrial zone in Ethiopia (as of February 2017) AFRICA BUSINESS PARTNERS

No.	Name of Industrial zone	Location	Distance from Addis	Distance from Djibouti	Progress	Organizer	Constructor	Main industry	Size
1	Eastern Industry Zone	Oromia, Dukem	80km	860km	Completion in 2008	China(江蘇其元集団)		Chinese companies	500ha
2	Bole Lemi Industrial Park 1	Addis Ababa	–	860km	Completion in 2014	Government, WB funds	23 Local companies	Garment	157ha
3	Hawassa Industrial Park	SNNPR	275km	998km	Completion in 2016	Government, WB and foreign government funds	CCECC	Garment	400ha(100ha in phase I)
4	Mekelle Industrial Park	Tigray	760km	750km	Under constriction	Government, WB funds	CCECC	Garment	1000ha(75ha in phase I)
5	Kombolcha Industrial park	Amhara	363km	480km	Under constriction	Government, Indian government funds	CCCC	Garment	750ha(75ha in phase I)
6	Jimma Industrial Park	Oromia	346km	1200km	Decided constructor	Government	CCCC	Garment	1000ha(75ha in phase I)
7	Bole Lemi Industrial Park 2	Addis Ababa	–	860km	Decided constructor	Government, WB funds	CCCC	Garment	170ha
8	Kilinto Industrial Park	Akaki, Addis Ababa	–	860km	Decided constructor	Government, WB and China funds	CTCE	Pharmaceuticals, medical equipment	279ha
9	Dire Dawa Industrial Park	Dire Dawa	445km	380km	Decided constructor	Government	Chinese company	Assembling, Garment, Foods	4000ha(150ha in phase I)
10	Adama Indudstrial Park	Oromia	74km	678km	Decided constructor	Government	Chinese company	Assembling, Garment, Foods	2000ha(365ha in phase I)
11	Bahir Dar Industrial Park	Amhara	578km	985km	Under planning	Government		Garment	1000ha(75ha in phase I)
12	Arerti Industrial Park	Amhara	105km	860km	Under planning	Government	CCCC	Constriction products, Home appliance	
13	Aysha Indsutrial Park	Somali	620km	150km	Under planning	Government			
14	Debre Birhan Industrial Park	Amhara	130km	895km	Under planning	Government			
15	Huajian Group Industrial Park	Lebu, Addis Ababa	–	863km	Under planning	China		Shoes	138ha
16	Mojo George Shoe Industrial Zone	Oromia, Mojo	74km	797km	Under planning	China		Leather	50ha
17	Arlines and Logistics Park	Addis Ababa	–	863km	Under planning	Government		Transportation	200ha
18	Kingdom Linen Industry Zone	Dire Dawa	515km	400km	Signed MoU	China (Zhejiang Jinda Flax)		Linen	
19	Bure Integrated Agro-Industrial Park	Amhara			Under planning	Government		Agri products processing	154.99ha
20	Bulbula Integrated Agro-Industrial Park	Oromia			Under planning	Government		Agri products processing	263ha
21	Yirgalem Integrated Agro-Industrial Park	SNNPR			Under construction	Government		Agri products processing	108.8a
22	Baeker Integrated Agro-Industrial Park	Tigray			Under construction	Government		Agri products processing	150.92ha

Source: Stakeholders related in establishing industrial Parks, 2017

ADDIS ABABA UNIVERSITY SCHOOL OF COMMERCE
DEPARTMENT OF LOGISTICS & SUPPLY CHAIN MANAGEMENT
GRADUATE PROGRAM

Appendix II: Questionnaire

Dear Respondent:

My name is Sewnet Seifu conducting a thesis entitled Assessing Logistics practices in the textile and apparel industry for partial fulfillment of my MA in logistic and supply chain management Addis Ababa university school of commerce. The main purpose of this questionnaire is to collect necessary data for the study on Logistics Practice in the textile and apparel industry.

This questionnaire designed to seek information for purely academic purposes and hence would not affect any one in any case. The information collected through the questionnaire is kept confidential and only used for academic purposes, and thereby, to come up with some workable solutions to overcome the known challenges and difficulties related to logistics practices in the textile industry. To this end, the outcome of this study highly depends upon your response. Therefore, you are kindly requested to fill the questionnaire as per the instruction, carefully and responsibly.

General Directions

1. You are not required to write your name
2. Respond to all close-ended question items by circling o the item you choose

In case of any question or problem please contact me via phone and mail

Sewnet Seifu

+251912049683

sewnetseifug@gmail.com

Thank you in advance for your cooperation!

Part I: General Information

1. **Gender**
    a. Male
    b. Female
2. **Age**
    a. 18-25 b. 26-35 c. 36-45

    d. 46-55 e. 56 and above

3. **Level of Education**
    a. Diploma b. Degree

    c. Masters d. PhD

4. **Years of Work Experience**
    a. 0-5 b. 6-10 c. 11-15

    d. 16-20 e. 21 and above

5. **Your Current Position in the Company _____**

Part II: Questionnaire Related to Logistics Practices

1. Is there a formalized Logistics department in the factory you are working?
   a.Yes b. No

   If not in which department you exercise logistics practices? _____

2. Do you Measure your factory logistics practices according to customer response?
   a. Yes b. No
   If your answer is yes, what is the performance metrics used for measurement?
   _____
   _____
3. Did your company develop and Maintain customer service policy?
   a. Yes b. No
   If your answer is yes, please state your customer service policy shortly
   _____
   _____
4. What are your criteria for selecting your suppliers? Please give them rank as 1st, 2nd, 3rd, 4th and 5th.
   a. Availability of raw materials_____
   b. Quality of raw materials or service_____
   c. Reliability of delivery of service_____
   d. Supplier flexibility_____
   e. Supplier responsiveness_____
   f. Price of products or service_____
5. Transportation
   a. How do you transport the cargo from/to your company?
      a. Using your own fleet b. outsourcing c. renting
   b. Does your firm outsource the transportation of recycled plastics to foreign customers?
      a. Yes b. no
6. Which type of warehouse you are currently using?
   a. private b. public c. both public and private
7. Which type of material handling equipment you are using?
   a. Conveyors b. Carts c. Cranes
   d. Forklifts e. Automatic Guided Vehicles

Please indicate your level of agreement on Logistics practice in your company

1= Strongly Disagree, 2= Disagree, 3= Neither, 4= Agree, 5= Strongly Agree

6	**Customer Service practice**	**1**	**2**	**3**	**4**	**5**
CP1	The employees in customer service area have enough knowledge to serve customers					
CP2	The company uses up to date information for forecasting customer's needs					
CP3	The company applies electronic communication like EDI or ERP with other section for joint planning					
CP4	Orders are fulfilled in the promised date					
CP5	There is a well-developed tool for measuring and evaluating customer satisfaction level					
7	**Inventory Management Practice**	**1**	**2**	**3**	**4**	**5**
IP1	The inventory model used to determine the quantity ordered is based on real demand analysis					
IP2	Is the Inventory model used target to minimize overall total inventory costs like holding, ordering and stock out					
IP3	Replenishment planning and inventory has a positive impact on customer satisfaction					
IP4	The Company has a system for wastage free utilization of materials inventory					
IP5	Materials in stock are correctly identified					
8	**Supply Practice**	**1**	**2**	**3**	**4**	**5**
SP1	The company has an organized marketing research team to find new and potential suppliers					
SP2	The company create long-term relationships with suppliers					
SP3	The company target to minimize acquisition and logistics cost					
SP4	The company settle payment and close contracts on time					
SP5	The company has an information communication technology (E-procurement) and data base systems in facilitating procurement practices.					

9	**Transportation Practice**	**1**	**2**	**3**	**4**	**5**
TP1	The current transportation practice or system provides efficiency in logistics					
TP2	The company reach or applied economies of scale and economies of distance to minimize transportation cost per unit					
TP3	The transport service providers has sufficient transportation units					
TP4	The available trucks are enough for efficient logistics operation					
TP5	The response for truck request is satisfactory					
10	**Warehousing practice**	**1**	**2**	**3**	**4**	**5**
WP1	The design of the warehouse is easy to access items, free from damage of items and convenient to loading and unloading					
WP2	The design of the warehouse system is properly done to improve customer service and eliminate errors in warehouse operation					
WP3	Warehouse operators are skilled to use computer and other technologies to perform warehouse activities					
WP4	The Company has various dockets like internal request form, waybill, etc…					
WP5	Most warehouse activities are automated					

Part III. Logistics Challenges

Different literatures identified the following logistics challenges. Please circle the challenge that faces your firm from the following lists (you can circle as much as possible).

Geographical Challenges	**Demographical Challenges**	**Environmental Challenges**	**Legislative Challenges**	**Technological Challenges**	**Other Challenges**
1. Traffic congestion	1. Ageing of population	1. Climate changes	1. Regulation and lengthy bureaucratic procedures	1. Costly new technology	1. Changes in fuel prices
2. Insufficient road development and maintenance	2. Growing concentration of population	2. Green logistics	2. Funding disagreements	2. Inability to access and apply the growing logistics knowledge base	2. Security issues like terrorism, unrest
3. Longer distances	3. In appropriate culture	3. Natural disasters like cyclones and floods	3. Higher taxes	3. Lack of modern management techniques	3. Delay due to maintenance of roads
4. Difficult geographical location of some places	4. Bad Human behaviors		4. Restriction on imported items	4. Insufficient logistics management capacity	4. Low quantity of vehicles
	5. Resistance to change		5. Foreign currency shortage	5. Poor exchange of information	5. Short product life cycle
			6. Low efficiency of customs	6. Lack of integrated system	
			7. Long lead time in port		

Thank you for your kind cooperation!!