



**ST. MARY'S UNIVERSITY**

**SCHOOL OF GRADUATE STUDIES**

**VALUE CHAIN ANALYSIS OF INDUSTRIAL SEWING MACHINERIES;  
IN THE CASE OF ADDIS ABABA, ETHIOPIA**

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**JUNE, 2019**

**ADDIS ABABA,ETHIOPIA**

**VALUE CHAIN ANALYSIS OF INDUSTRIAL MACHINERIES; IN THE CASE OF  
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## **LISTS OF ABBREVIATIONS**

AACCSA	Addis Ababa Chamber of Commerce and sectoral Association
AGOA	African Growth and opportunity Act
COMESA	Common Market for Eastern and Southern Africa
GDP	Gross Domestic product
LC	Letter of Credit
OLS	Ordinary Least Square
R&D	Research and Development
VC	Value Chain
CBI	Centre for the Promotion of Imports
FDI	Foreign Direct Investment



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## **ABSTRACT**

*The purpose of this study was to assess the value chain analysis of sewing machine in Addis Ababa. Specifically the objective of the study was to Identify the functioning's of sewing machinery marketing support services, to identify the key factors affecting the supply of sewing machineries and to analyze the constraints that suppliers and customers encounter in the market. As a methodology the study used explanatory research design where data were collected from importers and sewing machine operators from two different garments. Data were collected from 90 randomly selected respondents which were selected from two different garment factories. Furthermore, data were analyzed using descriptive data analysis methods such as tables, frequency and percentages and inferential statistics. The findings of the study revealed that there are ten types of sewing machines that are delivered in the market; however, the sewing machine value chain is constrained by lack of professional technicians, continuous maintenance service, excess price fluctuations and knowledge gap. Apart from these, the supplies of sewing machine are significantly determined by the price of the sewing machine, the capital of the importing company and exchange rate.*

Key Words: Value Chain, Sewing Machine, Industrial

## CHAPTER ONE

### INTRODUCTION

#### 1.1. Background of the study

Economic development is a process that causes per capital income to increase in the long-term (Sukirno,2003). The industrial sector has an important role in economic development marked by changes in the economic structure of the community especially the home industry. The existence of a home industry will be able to increase household income by encouraging the fulfillment of community needs through production so as to reduce dependence on outside goods and to expand employment Hasanah and Widowati (2011). The household industry requires a strategy to continue and survive. A strategy is a continuous and simultaneous action that is done consistently, and that is carried out based on the point of view of what is expected in the future Aulia and Ikhwana (2012). The reality is that many household industries experience a collapse because they cannot compete with other large industries, and because the welfare of home industry owners is decreasing. Due to the increased globalization and its effects throughout different organizations and industries, global value chains have become more important for understanding global economy from viewpoints of both business and academia. As barriers for international trade and transactions have fallen, communication technologies have advanced and transportation costs have declined, companies around the world are moving towards more task-oriented approach rather than traditional product-oriented approach. New Intra-sectorial linkages are constantly being formed between companies and other actors, reconfiguring and reorganizing the geographical and organizational construction of global production. Understanding these specialized and complex linkages i.e. global value chains, allow enterprises to gain a better understanding of their direct and indirect costs of production, locate their operations more efficiently, outsource various operations and focus on their core-competencies Bair, Gibbon and Ponte (2008).

The concept of Value Chain was first introduced in management literature already in the 1980's by Michael Porter (1985), who explained the basic steps and process of value creation in his book "Competitive Advantage: Creating and Sustaining Superior Performance". As mentioned, the sequence of transactions and transformations reaching from raw materials to the final product

and customer has become very global in nature for most international companies. Value chain is a relatively simplified way of describing these production systems, in which interdependence and interpenetration have achieved levels never experienced before. Ironically, even though maximization of value remains as the major objective for most enterprises, many of them are unaware of where in the chain the value is actually created (Dembinski,2009).

Sewing machine is a device used to assemble pieces, this machine may operate mechanical, electrical and electronic equipment, which is mainly used to produce junctions between tissues, using a needle and thread, sewing machine is a product that is aimed at manufacturing companies as these are the major plaintiffs, but people who do not exercise the work of the clothing are also buyers of these machines as it is common to see in our society that in most households there at least one sewing machine (threads, 1995)

Invention of the sewing machine was a simple idea based on the seam and mechanical fundamentals which gradually evolved into an efficient machine a positive impact in the apparel industry because it increases productivity through optimization and standardization assembly processes of garments that will impact ultimately on increasing the utility of the owners of the companies and customer satisfaction by getting a better product and better prices (Parton, 2008)

The invention of the sewing machine revolutionized the manual labor in garment factories and homes, because the sewing is one of the old idea of art; with the use of sewing machines in antiquity, tailors optimized their work because the seam was faster and better than hand sewing; equally sewing machines in the industry today bring great benefits to people, then they have helped the economy, we see in the middle not only large companies in the seam, but small companies that live of this work and at the same time create jobs. At the industry level can be highlighted the following benefits, Moving from manual sewing to seam more tech Generation of industrial growth since its invention many found the opportunity to earn income and eventually the creation of clothing companies Decreased operating times in the process of assembly of the garment factories and therefore increasing productivity Ability to innovate in the design of the clothes because machines optimize the assembly of these Sewing machine is designed with a computer system which is simple and practical, for facility confection of clothing Cunningham and Gladys (1988).

The sewing machines today are very different from the old machines, but all the sewing machines are based on the frame operation models, most of the sewing machines have a needle oscillating current that is able to sew in a zigzag pattern. Under the tissue, with an elongated hole where the needle increases or decreases its speed from right to left, making stitches you can make other alternative to today has been incorporated into the sewing machines new technologies that facilitate the manufacture of garments. The present trend in the development of sewing machines is to shorten the sewing times in the sewing process and to increase the productivity of this process (parton, 2008).

In today's business climate, every company needs to maximize the value of every process in their business. This is where the "Value Chain Analysis" tool is useful. Value Chain Analysis helps companies identify the ways in which the companies create value for their customers, and then helps the companies think through how they can maximize this value (Porter, 1985)

According to Michael Porter (Porter, 1985) value is "...what buyers are willing to pay for a product or service, and the cost of performing the activities involved in creating it, determines profits." Porter defines the value chain as "the basic tool for diagnosing competitive advantage and finding ways to enhance it..." In his model, Porter explained about the primary activities that comprise a set of activities that contribute to the creation of value in a direct manner and support activities as tasks that are intended to support primary activities towards improving the competitive advantage of a firm.

The Ethiopian cotton, textile and garment sector is one of the key manufacturing industries prioritized by the government in transforming the country's traditional agricultural based economy to industrialization and expected to substantially boost performance in the second GTP. In addition, the industry is believed to contribute towards employment of skilled and unskilled labor in the country and a major source of foreign exchange (Addis Ababa Chamber of Commerce and Sectorial Association (AACCSA), 2015).

Value addition in textiles is the key to success for transforming the sector's GDP share of the nation. As a result of integrated efforts by the government and the private sector, Ethiopian and foreign investors are recently moving aggressively in the direction of higher value addition

through investing in the balancing, modernization, establishing and up-gradation of the textile manufacturing industry by acquiring new technologies and knowhow (Addis Ababa Chamber of Commerce and Sectorial Association (AACCSA), 2015).

This project is about the sewing machine, which is being implemented through of an historical and descriptive research that aims to show what are sewing machine and its operation, but primarily to identify its value chain.

## **1.2. Statement of the Problem**

Success in business depends on finding competitive advantage, i.e. what makes a firm superior to competitors and is perceived as valuable by customers. One approach for figuring that out is through value chain analysis, as developed by Michael Porter. The value chain is a sequence of activities that exist in almost every business. Profit is determined by performing these activities efficiently and/or with suitable quality results such that customers are willing to pay more for the resulting product than it cost you to carry out these activities. And customers will buy from you rather than your competitors if you can tweak the value chain to lower costs or achieve superior differentiation (Rolfe Larson, 2011).

Value chain analysis is essential to explain the connection between all the factors in a particular chain of production and distribution and it shows who adds value and where, along the chain. It helps to identify pressure points and make improvements in weaker links where returns are low (Schmitz, 2005) . Sewing machinery market are unlikely to exploit market opportunities as they cannot attain the necessary economies of scale and lack enough supplies of these machines and its accessories as well as a low bargaining power of customers in negotiating prices for the garment factories as mentioned above. The existing constraints of availabilities and marketing of sewing machines such as price increment through times, easy break ability of the machines as well as low distribution of the machines and its accessories have played their deterring role on garment and its related production and trade in Ethiopia.

Sewing machineries demand and its accessories have played their deterring role on garment production and trade in Ethiopia. In this regard, sewing machinery value chain analysis is an interesting process. Value chain analysis of sewing machines will help to study on factors

affecting sewing market supply, factors affecting market supply system and the benefit share of different actors in the value chain as well. Therefore, this study investigate the value chain analysis of major market supplied in selected sub-cities of Addis Ababa; thus, this study would help to find the weakest link of the chain and to narrow the information gap on the subject. The study would light on required efforts to enhance the availabilities and accessibilities of sewing machines at proper supply in the market to bring about economic development in the area.

### **1.3. Research Questions**

#### **1.3.1. Main Research Questions**

- What is the nature of value chain of sewing machines?

#### **1.3.2. Specific Research Questions**

- What are the functioning's of sewing machinery marketing support services
- What are the determinants of sewing machine supply?
- What are the constraints that suppliers and customers encounter in the market

### **1.4. Objectives of the study**

#### **1.4.1. General objective**

The general objective of the study is analyze the value chains of industrial sewing machines.

#### **1.4.2. Specific Objectives**

- To Identify the functioning's of sewing machinery marketing support services
- To identify the determinants of sewing machine supply
- To analyze the constraints that suppliers and customers encounter in the market



### 1.5. Research hypothesis

- Age of the company has a significant effect on sewing machine supply
- Capital of companies has a significant effect on sewing machine supply
- Price of sewing machine has a positive and significant effect on sewing machine supply
- Exchange rate has a negative and significant effect on sewing machine supply

### 1.6. Definition of terms

**Value:** It is the money worth of an asset or a product. Value does not necessarily include dollar value only. There could be value in information exchange, in building networks and in learning new processes (Vermeulen, 2008)

**Value Chain :** It is the full range of activities which are required to bring a product or service from conception through the different phases of production (involving a combination of physical transformation and the input of various producer services), delivery to final consumers, and final disposal after use. It is the sequence of activities required to make a product or provide a service (Vermeulen, 2008)

**Value chain analysis:** It is examining of a full range of activities in the chain that elaborate the competitive strength of the organization. It is useful for identifying constraints and opportunities for the provision of financial services through identifying demand for financial services within value chains. Value chain analysis is an original methodological tool that enables design teams in the product definition phase to comprehensively identify pertinent actors, their relationships with each other and their role in the product 's life cycle. Donaldson, Ishii and Sheppard (2006).

Three important levels of value chain could be identified according (Bammann,2007). These are:

**Value chain actors:** The chain actors, who directly deal with the products, i.e. produce, process, trade and own them.

**Value chain supporters:** The services provided by various actors who never directly deal with the product, but whose services add value to the product.

**Value Chain influencers:** The regulatory framework, policies, infrastructures, etc.

The value chain concept entails the addition of value as the product progresses from input suppliers to producers and then to consumers. A value chain, therefore, incorporates productive transformation and value addition at each stage of the value chain. At each stage in the value chain, the product changes hands through chain actors, transaction costs are incurred, and generally, some form of value is added. Value addition results from diverse activities including bulking, cleaning, grading, packaging, transporting, storing and processing (Anandaja and Berhanu, 2009).

**Sewing machine:** The industrial sewing machine is a substantial duty form of a typical home sewing machine. It is used in the apparel and other industries related to it such as furnishings stitching. One of the most common uses for the industrial sewing machine is to make the mass produce on sewing of pockets into a res made out of heavy opus, like denim for blue jeans (threads, 1995)

### **1.7. Significance of the Study**

The study analyzes the entire sewing machineries value chain. It will also provide a holistic picture of existing challenges, opportunities and entry points in the value chain. Moreover, the study also provides information on the determinants of sewing supply system to the market and identifies opportunities and constraints of value chain in the study areas. Therefore, it would shed light on required efforts to enhance the supply and availabilities of sewing machines at larger scale to bring about economic development in the country. The information generated might also help a number of organizations including: The Ethiopian industry, research and development organizations, traders, garment manufacturers, policy makers, extension service providers, government and non-governmental organizations to assess their activities and redesign their mode of operations and ultimately influence the design and implementation of policies and strategies.

### **1.8. Scope and Limitation of the Study**

This study was conducted in Addis Ababa and data were collected from sample respondents involved in the sub sector. A longer time and enough resources would have helped to discover

more findings as the study limited geographically as well to make the study more representative in terms of wider range of area, and time horizon. Since the Ethiopian Industry is still in progress, the result of the study may have limitations to make generalizations and make them applicable to the country as a whole. However, it may be useful for areas with similar context with the study areas. The limitations that are faced in this research is lack of comprehensive and systematic study on value chain and lack of books and other related reference materials on value chain management of the manufacturing industries as well on industrial sewing machines and also time constraint.

### **1.9. Organization of the study**

The study is organized five chapters. Chapter one the introductory chapter covers background of the study, problem statement, objectives of the study, scope of the study, significance and limitation of the study. Chapter two presents review of literature on value chain analysis from different sources. Subsequently, description of the study area and methodologies is presented in Chapter three. In Chapter four, a descriptive result is presented and discussed in detail. Chapter five summarizes the main findings of the study and draws conclusion and appropriate recommendations.

## **CHAPTER TWO**

### **REVIEW OF RELATED LITERATURE**

This chapter contains the theoretical framework, conceptual framework drawn from the theoretical perspective and empirical framework.

#### **2.1. Theoretical Literature**

##### **2.1.1. Value and Value Chain**

According to Philp, Kotler, Kavin Lane and Keller(2009), value reflects the perceived tangible and intangible benefits and costs to customers. It can be seen as primarily a combination of quality, service and price called the “customer value triad.” Value increases with quality and service. It is a capability provided to a customer of the highest quality, at the right time, at an appropriate price as defined by the customer. (Porter, 1985)has described value is the amount buyers are willing to pay for what a firm provides them. Accordingly, the consumer is viewed as the source of value. The demand for products created by consumers’ drives product value, Value is measured by total revenue, a reflection of price a firm’s product commands and the unit it can sell. A firm is profitable if the value it commands exceeds the costs involved in creating the product. Creating value for buyers that exceeds the cost of doing so is the goal of any generic strategy. Value instead of cost, must be used in analyzing competitive position since firms often deliberately raise their cost in order to command premium price via differentiation (Porter, 1985)

A value chain can be defined as the full range of activities which are required to bring a product or service from conception, through the different phases of production (involving a combination of physical transformation and the input of various producer services), delivery to final customers, and final disposal after use. Value activities are the physically and technologically distinct activities a firm performs. The chain actors who actually transact a particular product as it moves through the value chain include input suppliers, traders, processors, transporters, wholesalers, retailers and final consumers (Mitchell, 2009).

### **2.1.2. Value Chain Analysis**

According to Porter “Competitive advantage cannot be understood by looking at a firm as a whole. It stems from the many discrete activities a firm performs in designing, producing, marketing, delivering and supporting its product. Each of these activities can contribute to a firm’s relative cost position and create a basis for differentiation” (Porter, 1985). (Porter, 1985) identify that a company’s profitability is a function not only of industry conditions, but also of the amount of value it creates relative to its competitors. A firm can achieve competitive advantage if it possesses ‘capabilities’ that allow it to create not only positive value but as well additional total value than its competitors. Therefore, a firm must understand how its products serves customer needs better than potential substitutes; the technology of production, distribution and sales; and the business’s costs (Porter, 1985).

According to Hill and Jones,(2001) maintain that the term “value chain” refers to the concept that a company is in chain of activities for transforming inputs into outputs with purpose to deliver value to the customers. The value chain is therefore a logical way of looking the overall business activities with purpose to mobilize these various strategic impacts (Porter, 1985). These activities in the value chain are core (primary) and supplementary (secondary or support) activities. Companies, primarily have to identify the core activities that would give them sustainable competitive advantage and then identify the assets and competencies needed to achieve this advantage. Value can be created in one of the following two ways.

- i. Cost advantage: reducing the costs of activities wherever possible and use the cost benefit to reduce the price of their final products or services; or
- ii. Differentiation: focusing on activities closely associated with their competitive advantage. Businesses investing in activities adapted as sources of competitive advantage that allows the business to increase the quality of their products and services and sell them for higher prices.

The basic principle is that activities should be isolated and separated that (1) have different economies, (2) have a high potential impact of differentiation, or (3) represent a significant or growing proportion of cost (Porter, 1985).

(Porter, 1985) introduced the concept of value chain as the basic tool for examining the activities a company performs and their interactions with a view to identifying the sources of sustainable competitive advantage. It separates the activities of a firm into a sequential stream of activities and is used to analyze and establish the importance of the different activities in delivering the final product/service, thereby facilitating the identification of core and non-core activities. Defining relevant value activities requires that activities with discrete technologies and economies be isolated. Broad functions such as manufacturing or marketing must be subdivided into activities. The product flow, order flow, or paper flow can be useful in doing so. Subdividing activities can proceed to the level of increasingly narrow activities that are to some degree discrete (Porter, 1985).

Value chain analysis examines the labor inputs, technologies, standards, regulations, products, processes and markets in specific industries and locations in order to provide a holistic view of these global industries. Gereffi, Humphrey, and Sturgeon (2005).

The factors are examined from four perspectives: (1) the input-output structure, which describes the process of transforming raw materials into final products; (2) geographical distribution, which identifies the firms and countries participating in the chain; (3) the governance structure, which explains how access to and upgrading in the value chain is controlled; and (4) the local institutional context of the countries in which the value chain is embedded. Gereffi et al. (2005).

The value chains framework helps explain how industries are organized by examining the structure and dynamics of the different actors involved. The value chain describes the full range of activities that firms and workers perform to bring a product from the design stage through to consumption and beyond. This includes both tangible and intangible value adding activities, such as research and development, design, production, distribution, marketing and support to the final consumer.

### **2.1.3. Why Value Chain Analysis?**

Production is not the only way of creating value. A product is brought to market through a combination of different activities, all of which contribute to its final value. The type and amount of value added differ at different stages of activities. This has a huge implication in analyzing

which values are considered the most valuable in terms of cost or differentiation. Although, complexity of business operations is time consuming in analyzing firms value chain, according to Dorothy and Hubert (2001) the application of value chain analysis offers the following advantages;

- It helps to show where the firm's competitive advantage lies. The tool assists businesses to appreciate potential sources of competitive advantage. If a firm competes through differentiation advantage, it will try to perform its activities better than competitors would do. If it competes through cost advantage, it will try to perform internal activities lower costs than competitors would do. When a company is capable of producing goods at lower costs than the market price or to provide superior products, it earns profits.
- The value chain analysis helps to understand challenges in the value addition process and ways of improving the situation of the "weaker" links in the chain, i.e., those with low returns and little bargaining power.
- Value chain analysis can play an instrumental role in terms of detecting organizational, tactical and strategic issues related to the business.
- The analysis of the value chain also helps to understand problems of market access. By identifying the type of network a firm operates, it will gain access to the lead firms in the chain and thereby enjoy the different tariff reductions and trade barrier eliminations the lead firm's country provides.
- Value Chain Analysis is a useful tool for working out how you can create the greatest possible value for your customers. Raw inputs are taken then and "value is added" on them turning them into something of worth to other people. This is easy to see in manufacturing, where the manufacturer "adds value" by taking a raw material of little use to the end user (for example, wood pulp) and converting it into something that people are prepared to pay money for (e.g. paper). The more value created, the more people will be prepared to pay a good price for a product or service, and the more they will keep on buying.
- Value Chain Analysis helps you identify the ways in which a firm creates value for its customers, and then helps to think through how its value can be maximized: whether through superb products, great services, or jobs well done

#### **2.1.4. Porter's (1985) Value Chain Framework**

These are the activities that are involved with a product's physical creation; its sale and distribution to buyers, and its service after the sale. These activities are termed 'primary' because are the most important ones as they add value to the product or those involved in either producing or selling the product.

##### **i) Inbound Logistics-**

It involves supplier relationships and refers to all the processes/ activities involved in receiving, storing and disseminating raw materials, inputs, components, and parts used in the production process (Porter, 1985).

Raw Material Inspection- Raw materials used for garment should be of good quality; they must be stored and handled properly. This is because the quality of raw materials going into the production has a direct effect on how the final product will turn out.

Storage -The storage and handling of raw materials will play an important role in determining a plant's layout and equipment needs. Materials handling is the movement and storage of materials at the lowest possible cost through the use of proper methods and equipment. The handling could be done manually or automatically. After receipt from suppliers, raw materials or inputs, like fabric, trims, accessories, buttons should be stored and handled carefully with the appropriate handling systems as their efficient handling is an important part of logistics and production (Sultan, 2017)

Inventory control is the supervision of the storage, supply and accessibility of items to ensure an adequate supply without excessive oversupply (Miller, 2010). It relates to policies and operating procedures designed to optimize the organization's use of inventory. The decision making factors in inventory control are cost of holding stock, cost of placing an order and cost of shortage. With adequate data on these three variables available, businesses can know to what extent they can hold inventory to avoid mark downs and losses.



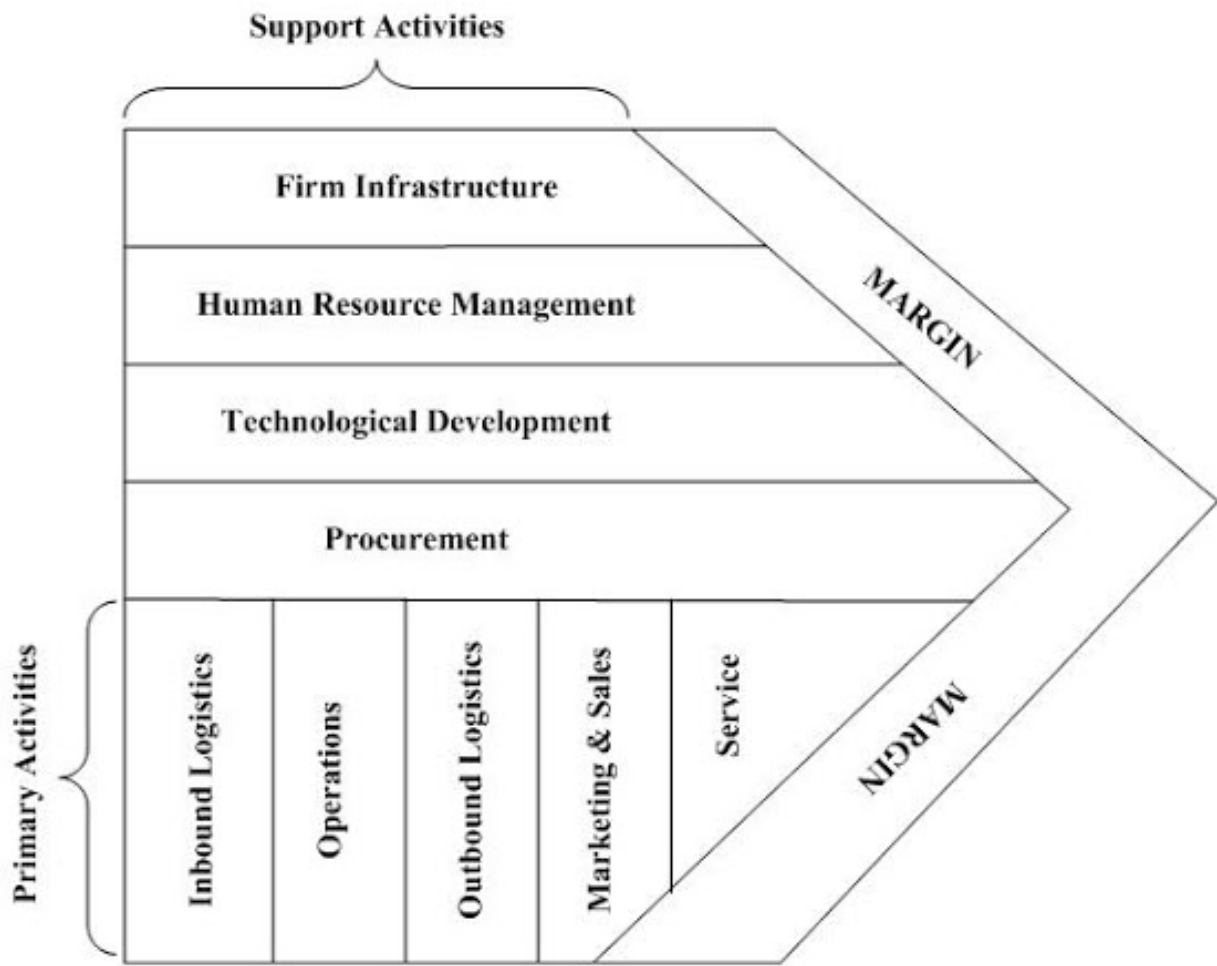


Figure 2.1- Porter's Value Chain Framework

Source: (Porter, 1985) "competitive advantage"

## ii) Operations

These are the value-adding activities that are used to turn a company's raw materials into a final product. These includes processes or activities of manufacturing, assembly, packaging, maintenance of the equipment, testing, printing, and facilities operation in transforming inputs to final products. Operation management may be defined as the design, operation, and improvement of the production systems that create the firm's primary products or services.

**Production** : Production is characterized by the transformation of input goods into output goods using resources such as machineries or assets as well as human resources.

**Production scheduling** of resources and detailed production orders as well as changeovers and throughputs is one of the most challenging problems specifically when multi-purpose resources and production changes have to be considered. Production scheduling can be decoupled from orders using inventories and make-to-stock production.

**Capacity Planning and Production Control** Production planning decides on production volumes and values by site and production resource. Production planning normally considers total volumes only, while production scheduling in operations decides on the respective schedule. However, cases exist where production lead times and change-over constraints may require also considering the sequence of products in production master planning.

**Quality Control** – Quality control to ensure that each element of the production is completed as intended. Errors must be found as early as possible to minimize rework and waste. While quality control involves inspecting units produced, quality assurance refers to the process of ensuring that adequate processes are in place.

### **iii) Outbound Logistics**

It relates to associated with collecting, storing, processing orders, transporting, and physically distributing of the product to the final consumers; such as finished good warehousing, material handling, delivery vehicle operation, order processing and scheduling (Sultan, 2017).

#### **2.1.5. Value Chain Actors**

According to Getnet (2009) value chain (VC) actors are those involved in supplying inputs, producing, processing, marketing, and consuming products? They can also be those that directly involved in the value chain (producers or suppliers, processors, traders, retailers, contractors, builders, manufacturers and consumers) or indirect actors who provide financial or non- financial support services, such as credit agencies, business service and government, researchers. Collaboration and partnership of value chain actors is needed to get mutual benefit from the business. Even though it is difficult to share responsibility formally between and among the value chain actors, they can make ease if they create partnership and become loyal.

Typical value chain linkages include input supply, production, assembly, transport, storage, processing, wholesaling, retailing, and utilization, with exportation included as a major stage for products (Anandajayasekeram and Berhanu, 2009).

A value chain is made up of a series of actors from input suppliers, producers and processors, traders and end users (Kaplinsky and Morris, 2001). Bammann (2007) has identified three important levels of value chain.

- Value chain actors: The chain of actors who directly deal with the products, i.e. produce, process, trade and own them.
- Value chain supporters: The services provided by various actors who never directly deal with the product, but whose services add value to the product.
- Value chain influencers: The regulatory framework, policies, infrastructures, etc.

The value chain concept entails the addition of value as the product progresses from input suppliers to producers and consumers. A value chain, therefore, incorporates productive transformation and value addition at each stage of the value chain. At each stage in the value chain, the product changes hands through chain actors, transaction costs are incurred, and generally, some form of value is added. Value addition results from diverse activities including bulking, cleaning, grading, and packaging, transporting, storing and processing (Anandajayasekeram and Berhanu, 2009).

#### **2.1.6. Value chain Governance**

Governance refers to the role of coordination and associated roles of identifying dynamic profitable opportunities and allocating roles to key players. The governance of value chains emanate from the requirement to set product, process, and logistic standards, which then influence upstream or downstream chain actors and results in activities, roles and functions (Kaplinsky and Morris, 2000).

According to Raikes *et al.* (2000), trust-based coordination is central for goods and services, whose characteristics change frequently, making a standardized quality determination for the purposes of industrial coordination. This applies to the manufacturing industry as well as agri-

food chains. It is possible to identify in one industry several coordination forms used by different firms where the choices rely on the trust existent between the firms. Value chains can be classified into two based on the governance structures: buyer-driven value chains, and producer-driven value chains. Buyer-driven chains are usually labor intensive industries, and so more important like in international development and agriculture. In such industries, buyers undertake the lead coordination activities and influence product specifications.

In producer-driven value chains which are more capital intensive, key producers in the chain, usually controlling key technologies, influence product specifications and play the lead role in coordinating the various links; some chains may involve both producer and buyer driven governance. Yet in further work (Humphrey and Schmitz, 2002; Gibbon and Ponte, 2005) it is argued that governance, in the sense of a clear dominance structure, is not necessary a constitutive element of value chains. Some value chains may exhibit no governance at all, or very thin governance. In most value chains, there may be multiple points of governance, involved in setting rules, monitoring performance and/or assisting producers.

Chain governance should also be viewed in terms of ‘richness’ and ‘reach’, *i.e.*, in terms of its depth and pervasiveness (Evans and Wurster, 2000). Richness or depth of value chain governance refers to the extent to which governance affects the core activities of individual actors in the chain. Reach or pervasiveness refers to how widely the governance is applied and whether or not competing bases of power exists. In the real world, value chains may be subject to multiplicity of governance structure, often laying down conflicting rules to the poor producers (MSPA, 2010).

#### **2.1.7. Value chain Upgrading**

Upgrading refers to the acquisition of technological capabilities and market linkages that enable firms to improve their competitiveness and move into higher-value activities Upgrading in firms can take place in the form of process upgrading, product upgrading, functional upgrading and chain upgrading. Upgrading entails not only improvements in products, but also investments in people, knowhow, processes, equipment and favorable work conditions (Kaplinsky and Morris, 2000).

**Table 2.1 Upgrading types and challenges**

Upgrading types	Specific challenges
Improving process efficiency	Improvement in overall manufacturing efficiency Better coordination of deliveries and learning to use cost effective materials input  Different product specifications for production Improved and consistent input quality
Introducing new products o	Designs suitable for woodchips and particles And for over all manufacture  Learning to utilize new and environmentally friendly lacquers and paints (adhesive chemicals)
Functional upgrading	Increasing domestic design content, within individual links or in collaboration between links and with the national system of innovation
Moving to a new value chain	-Moving from pine and logs furniture to advanced industrial products with sharp and competent demand which is research driven

**2.1.8. Relationships and Linkages between Primary & Secondary Activities**

Dess et al (1995) and Reid et al (1993) state that companies can use the value chain framework to understand their cost position and to identify the multiple means that might be used to facilitate implementation of a chosen business-level strategy. According to Hitt et al (2007), the value chain shows how a product moves from a raw material state to an output that will be deliver to the final customer. Hence, the essential idea of the value chain is to create additional value without incurring significant costs while doing so and to capture the value that has been created. Moreover, value adding activities are not independent but interrelated and inter-dependent within the value chain (Morden, 1999). Porter states: “value activities are related by linkages within the value chain. Linkages are relationships between the ways one value activity is performed and the cost or performance of another” (Porter, 1985).

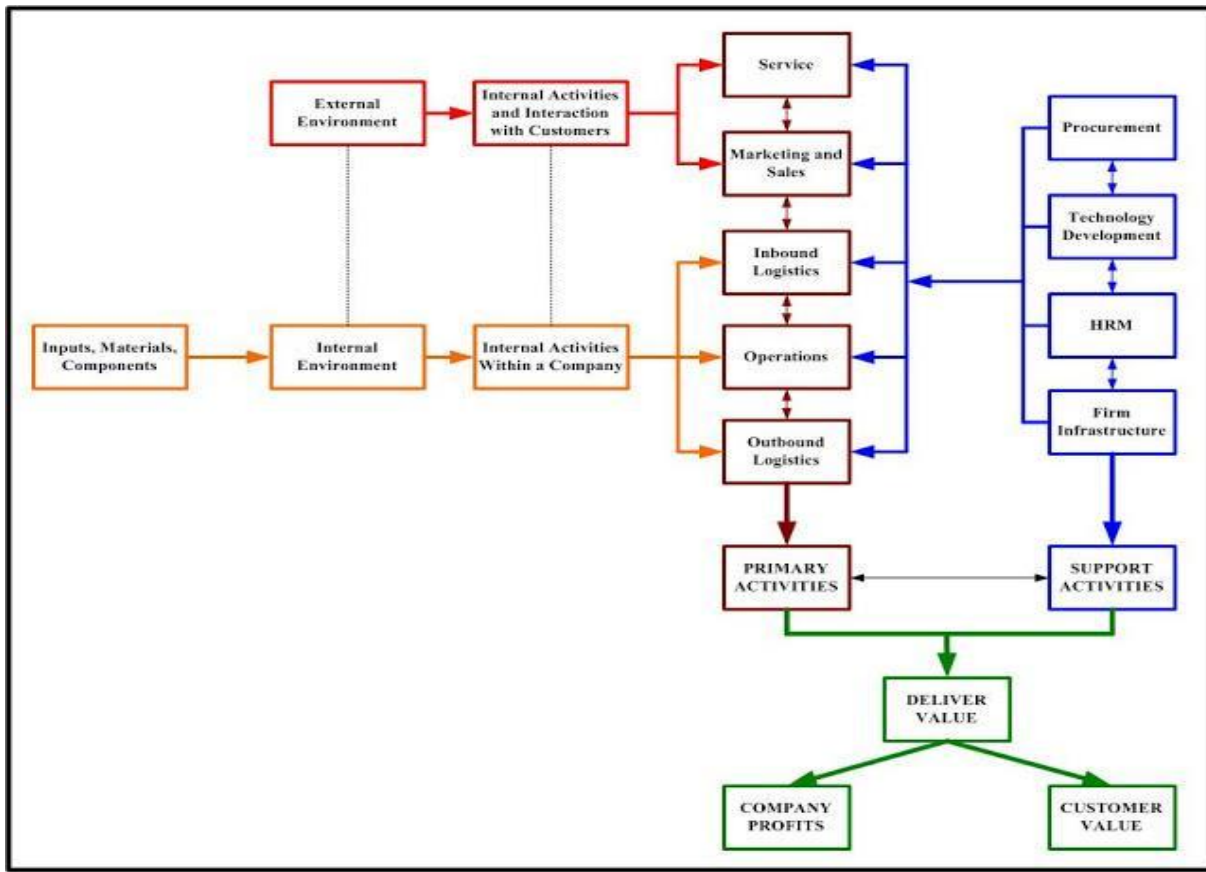


Figure 2.2. Linkages among Primary and support activities

(Source: Business Models & Strategy, Dr. Antony Michail, 2011)

(Porter, 1985) notes that value analysis cannot be sufficient to guide strategic decision making; the linkages between the different activities are also essential. The following figure explains the relationships between primary and secondary activities and separates the primary activities into internal and external environment. The starting point is the purchase of inputs, raw materials and components. Those are delivered into a company's internal environment. Activities such as inbound logistics facilitate the processes where all the inputs are stored and distributed internally. Operations in turn are responsible to develop an output where it will be delivered to the customer by various activities carried out by the outbound logistics. The remaining primary activities, Sales, Marketing, and Service consist of numerous activities that facilitate interaction with the external environment which is the customers. Support Activities interact with the primary ones with purpose to deliver value for the organization but as well as for the end user.

Porter maintains that a company's competitive advantage derives as much from the nature of the linkages among activities as it does from the activities themselves. Thus, competitive advantage may derive from:

- The optimization of the use of resources/capabilities required to accomplish linkages by seeking more efficient and effective ways for doing so (Morden, 1999)
- Coordination between the discrete activities that are inter-related by the linkages (Morden, 1999).

### **2.1.9. Industry Value Chain Theory**

Inspired by the Porter's Value Chain Theory (Porter,1985) many scholars apply the methods of the value chain to the industry and expand it to the industry chain so as to study the organizational form of the value. Industry chain applies the ideas and methods of the value chain to the industry circle, considering the organizational form of value creation in more micro perspective is a natural extension of the analysis method of the value chain, value system and value network. Kapanliksy (2000) expands the Michael Porter Value Chain Theory to consider the relationship between companies. The value chain between industries, the value chain in the industry and different industry value chains are different, so is the process of the value creation. Industry value chain extends the concept of value chain to the scope of overall the industry.

### **2.1.10. Sewing**

Garments are sewn in an assembly line, with the garment becoming more complete as it progresses down the sewing line. Sewing machine operators receive a bundle of cut fabric and repeatedly sew the same portion of the garment, passing that completed portion to the next operator. For example, the first operator may sew the collar to the body of the garment and the next operator may sew a sleeve to the body. Quality assurance is performed at the end of the sewing line to ensure that the garment has been properly assembled and that no manufacturing defects exist. When needed, the garment will be reworked or mended at designated sewing stations. This labor-intensive process progressively transforms pieces of fabric into designer garments. (www.textileschool.com, Apparel Manufacturing Processes)

### **2.1.11. Ethiopian Textile and Garment Industry**

Textile and apparel sub sector is among the priority subsector identified by the Ethiopian government in transforming the country's traditional agricultural based economy to industrialization. It has been one of Ethiopia's traditional domestic business mainly relied on traditional based and home grown old age spinning drop wheel and handloom up to the modern textile and garment integrated mill was established in 1939 in Dire-Dawa by the name of Dire-Dawa Textile Factory, which marked the beginning of textile industrialization by foreign capital. Currently, Ethiopian textiles and apparel industry encompasses spinning, weaving, finishing of textiles, manufacture of cordage, rope, twine, netting, knitting mills, and manufacturing of wearing apparel. The firms in the industry produce products such as cotton and woolen fabrics, nylon fabrics, acrylic and cotton yarn, blanket, bed sheet, shirts, carpets, gunny bags, wearing apparels, and sewing thread.

Ethiopia's economy is primarily based on agriculture (46% of GDP) but over the last 5 years the government has been determined to diversify the exports with a priority set for strategic sectors like light manufacturing, textile- and garment manufacturing. The business opportunities in the Ethiopian textile- and apparel sector are huge. With a large set of incentive schemes to attract FDI, the Ethiopian government is determined to make the industry sector flourish. The Ethiopian textile – and apparel industry has grown an average of 51% over the last 5-6 years and some 65 international textile investment projects have been licensed for foreign investors. Retailers like H&M, Primark and Tesco have established offices in 2012 and are buying clothing- finished products- from Ethiopian manufacturers. (Business Opportunity Report Textile & Apparel)

According to the same report, the following were mentioned as major challenges in the sector

- Low production of local cotton, Ethiopia cultivated cotton on 75,000ha of land in 2010/2011. It planned to cultivate 265,000 ha by the end of 2014/2015 but it managed 125,000 ha.
- Matching supply and demand has been a grant challenge for the industry - local production of cotton in 2010 was 2,500 ton which was equal to the demand of textile factories and



even had a surplus. The year after the production surged to 79,500 ton while the demand stood at 39,000 ton.

- Lack of diversification in products, relative low quality of the products as well as limited productivity affected export performance as well
- The inability to compete on the international market due to price pressure caused many textile-and garment manufacturers to renew their interest for the domestic and local market.
- It is further motioned that, despite constraints the sector faces the potential for the Ethiopian textile-and apparel industry is huge thanks to good demographics, low costs of commodities, utilities like water and electricity and the fact the sector is still considered “infant” and can only mature from this point. Aligning cotton production with demand, constructing strong forward- and backward linkages and attracting new prospects to the nation enforced by increased FDI efforts give way to the supposition of a bright future and large employment possibilities.

## **2.2. Empirical Review**

The Addis Ababa Chamber of Commerce and Sectoral Association (Addis Ababa Chamber of Commerce and Sectoral Association (AACCSA), 2015).under “an Overview of Ethiopian Manufacturing Sector”, it has stated the Value addition in textiles to be the key to success for transforming the sector’s GDP share of the nation. Further, mentioned that that as a result of integrated efforts by the government and the private sector, Ethiopian and foreign investors are recently moving aggressively in the direction of higher value addition through investing in the balancing, modernization, establishing and up-gradation of the textile manufacturing industry by acquiring new technologies and knowhow Comparative Value Chain and Economic Analysis of the Apparel Sector (in Ethiopia, Tanzania, Zambia, China and Vietnam conducted under Polo Shirts showed that the Ethiopian textile- and apparel industry with its small number of factories, but to have the potential to grow significantly.

However, the study conducted by CBI, center for the promotion of imports from developing countries, part of the Netherlands Enterprise Agency the comparison on the current status of the industry to the regional market or to the African continent as a whole showed the

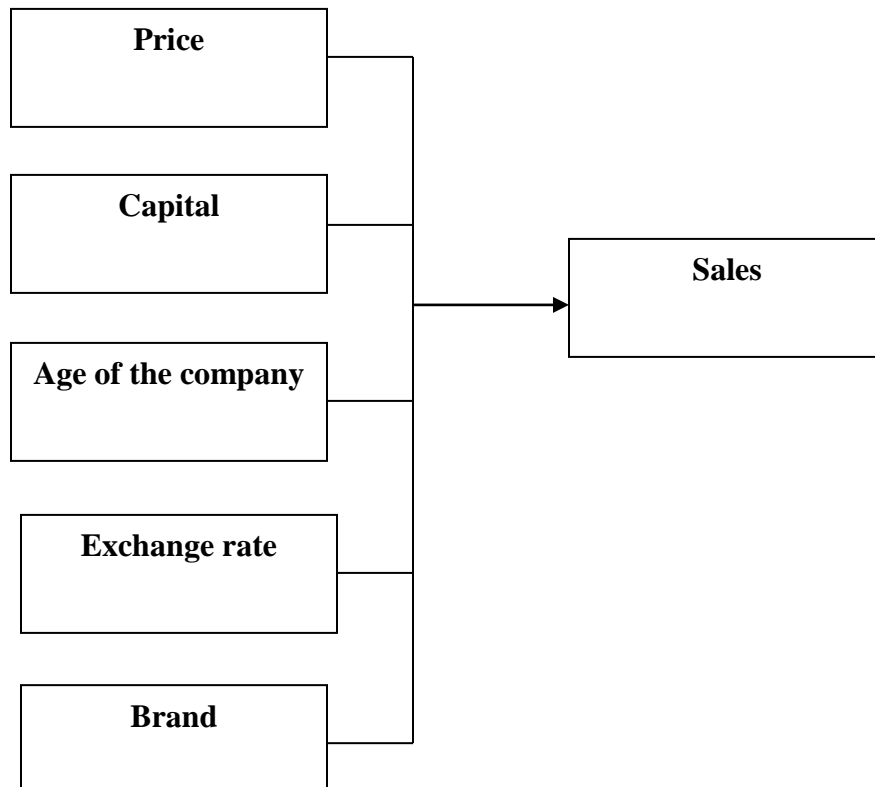
competitiveness of Ethiopia to be fairly limited still with little export variety in the “product mix” and of a limited level of sophistication. According to the same research; related to the potential international exports Ethiopia is now on 1/3 of the use of its capacity and on 1/10 of potential export value. Given the forecasted growth of the population, double to 180 million inhabitants in 2025-2030, it is imperative the industry sector needs to grow rapidly and mature a lot faster than other developing nations.

The African Development Bank Group under Ethiopia Country Report of 2014 regarding East Africa Manufacturing Sector, has indicated the availability of easy trainable workforce with a demographic structure which provides not only cheap labor but also creates a huge potential domestic demand for the output of the sector. Improvements and investments in infrastructure particularly power, investment in industrial zones and clusters, improvement in regional integration, through free trade like COMESA, AGOA are reported as further opportunities in the sector. However, the report also indicated the key weakness in the textile sector to be technology. Existing textile mills in Ethiopia are relatively weak and the sector is not in a position to produce world class competitive fabric due to a low level of technology and obsolete machinery, lack of skilled human resources, financial constraints to acquire adequate technology, and suboptimal capacity utilization.

Limited innovation and design input in production, limited awareness of international market trends, designs and product development, lack of information about needs of buyers in export market, limited awareness of costing and pricing strategies, lack of market skill, customer service, customer acquisition, finance management, high cost of logistics and trade infrastructure, business planning, lack of supply of domestic inputs and supply of industrial sewing machine are considered as weakness and threats of the garment industry and local market as well.

### 2.3. Conceptual framework

The conceptual framework shows how the dependent variable related with the independent variables. There for this study will set a framework identifying the relationships among price, capital, age of the company, exchange rate and brand as related to their effects on sales.



**Figure 1: Conceptual Framework of the Study**

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

This chapter discuss the methodology that was used in the study: the research approach and design, selection of the target population, sources of data, data collection procedures, method of data analysis ,reliability test and ethical consideration.

#### **3.1. Research Approach And Design**

A mixed research approach was employed. Mixed research approach is an approach to an inquiry that combines or associates both qualitative and quantitative forms (Creswell and Plano 2007). The qualitative one mean for exploring the meaning individuals or groups ascribe to a social or human problem and a quantitative one as a means of testing objective theories by examining the relationship among variables. In considering the nature of the research meaning that the research employees both type of data that is a quantitative and qualitative data and hence, to handle both type of data mixed method research were employed. Furthermore, considering the objective of analyzing the management of the primary and support activities in the value creation process explanatory research design were employed. The reason to use explanatory research design was since the nature of the research has a cause and effect relationship explanatory research design is the appropriate one to handle the problem. According to Creswell (2009), research designs are plans or procedures for research and the selection of a research design is based on the nature of the research problem or issue being addressed.

#### **3.2. Population and Sampling Procedure**

Because of the researcher is expecting to lack on various resources including time and money to gather information from every machine suppliers in the value chain process, the goal becomes finding a representative sample of the population. The population of this study wore supplier's buyers, and different concerned stakeholders. Basically there are only five suppliers of sewing machine who sell their products in Merkato (Addis ketema sub-city); therefore, all of the suppliers were taken as a source of information. Apparently data were also collect from garment representatives and sewing machine operators. The reason why data were collected from the machine operators since they are always with their sewing machine nobody may have a better

information about the situations of the sewing machines; in addition to these, on behalf of the machine operators mostly it is the garment representatives who communicate with suppliers in case of emergencies and hence, next to the machine operators the garment supervisors and representative have the better information next to the machine operators. Concerning analyzing the determinant of sewing machine supply a five year secondary data were collected from five sewing machine importing companies.

For the purpose of the primary data collection data were collected from customers of the sewing machine. Five garments were identified Cotex garment, Saberom garment, Jeylan garment, Jan A garment and Tufa garment. From these garments two garments, cotex and Jan A, who are main users of the sewing machines were selected purposely. Furthermore, the sewing machine operators were selected randomly. Totally, the two garments had 208 sewing machine operators/employees where 150 employees belongs to codex and 58 belongs to Jan A. accordingly, The sample size for employees was calculated based on Yamane's formula (Yamane, 1967).

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

Where, n = the sample size

N= the size of population

e =the error of 5 percentage points

By using Yamane's formula of sample size with an error 5% and with a confidence coefficient of 95% (Yamane, 1967), the calculation from a population of 208 employees came up to a sample of 90 employees. The distribution for each garment is done proportionally, accordingly, 65 employees from codex and 25 employees from Jan A was selected

### **3.3. Method of Data Collection**

Both primary and secondary data was conducted; for the purpose of primary data collection semi-structured questionnaires was used. A survey is advantageous for the collection of significant amount of data in an economic and efficient manner and it typically allows for much

larger sample size on the other hand. Apart from the survey an interview schedule was conducted with selected stakeholders for crystalizing the data collected through questionnaire. Secondary data were also collected from different sources by analyzing documents to develop research background and further justifications of the findings.

### **3.4. Method of Data Analysis**

In order to describe the data, descriptive statistics such as percentages, means and maps were used in the process of examining and describing marketing functions, facilities, services, and household characteristics. Apparently, inferential statistics such as Ordinary Least Square (OLS) method were employed. OLS is employed since the nature of the dependent variable is continuous the simplest and easy way to estimate is using OLS. STATA software was used to analyze the data collected from different sources including sewing machinery traders, buyers and consumers. The OLS were employed to estimate the determinants of sewing machine supply therefore, the general model of sewing machine supply will have a form of:

$$Y = B_0 + B_1X + B_2X^2 + B_3X^3 + B_4X^4 + B_5X^5$$

Y = Sewing machines Sales

X1 = Price of the Machine

X2 = Capital of the company

X3 = Brand of the machine

X4 = Exchange Rate

X5 = Age of the Company

### 3.5. Reliability test

Reliability is the degree to which an assessment tool produces stable and consistent results, Cronbach's Coefficient Alpha method was used to test the reliability of the data, and therefore, the data was 79.51% reliable.

Item	Obs	Sign	item-test correlation	item-rest correlation	average interitem covariance	alpha
sex	10	+	0.5037	0.4730	.1729345	0.7882
age	10	+	0.2802	0.2427	.1771763	0.7927
experience	10	+	0.6864	0.6639	.1692308	0.7841
Education	10	-	0.4470	0.4141	.1740108	0.7893
marital	10	+	0.8458	0.8360	.1691358	0.7835
constraints	10	-	0.0634	0.0234	.1812915	0.7970
different	10	+	0.6864	0.6731	.1740424	0.7885
ifyesbad	10	-	0.6864	0.6290	.1543843	0.7730
ifyesgood	10	-	0.6038	0.5345	.1578981	0.7777
technician~e	10	+	0.4971	0.4660	.1730611	0.7883
enoughtech~n	10	+	0.3105	0.2729	.1765116	0.7921
brand	10	-	0.1512	0.1190	.1798987	0.7951
howmanytimes	10	+	0.8458	0.8360	.1691358	0.7835
typespareb~d	10	+	0.4996	0.4549	.1697373	0.7860
perception	10	-	0.3241	0.2762	.1749921	0.7913
nuofcompan~s	10	+	-0.0218	-0.0463	.1822729	0.7972
brandscarce	10	+	0.6864	0.6731	.1740424	0.7885
intimeofsc~e	10	+	0.7539	0.7160	.156157	0.7724
mostspare	10	+	0.7539	0.7160	.156157	0.7724
towhatexte~e	10	+	0.7539	0.7160	.156157	0.7724
updated	10	+	0.4654	0.4037	.1678696	0.7858
proffesional	10	+	0.7539	0.7160	.156157	0.7724
quality	10	+	0.1961	0.1159	.1773029	0.7970
rate	10	-	0.0082	-0.0245	.1821146	0.7974
supplyscar~y	10	-	0.3638	0.3306	.1759418	0.7912
enoughmain~e	10	+	0.5025	0.4775	.1744539	0.7894
service	10	+	0.3101	0.2623	.1754036	0.7917
Agescategory	10	+	0.7361	0.4618	.1176322	0.8850
Test scale					.1687537	0.7951

### **3.6. Ethical Consideration**

All the participants included in the study were appropriately informed about the purpose of the study and Full consent has been obtained from the participants prior to the study. Respect for their dignity has been prioritized. Adequate level of confidentiality of the research data were ensured by keeping their Anonymity for individuals. But organizations participating in the research gave approval for utilizing their information. Any deception or exaggeration about the aims and objectives of the research were avoided and all communication in relation to the research has been done with honesty and transparency.



## CHAPTER FOUR

### RESULT AND DISCUSSION

#### 4.1. Demography of Customer Respondents

Apart from the interviewed importers and key informant garment representatives, a collective data were collected from directly from the sewing machine operators in pursuit of generating supplementary data.

Table 4.1 demography of sewing machine operator's respondent

<b>Sex</b>	<b>Freq.</b>	<b>Percent</b>
Male	7	7.78
Female	83	92.22
Total	90	100.00
<b>Age</b>	<b>Freq.</b>	<b>Percent</b>
18-25	34	37.78
26-35	55	61.11
>35	1	1.11
Total	90	100.00
<b>Experience</b>	<b>Freq.</b>	<b>Percent</b>
1-5	50	55.56
6-10	40	44.44
Total	90	100.00

Data were collected from garment employees, totally from 90 employees out of which 92.22 % of them were female and the rest were male. Age wise 38 % of them were in the age range between 18 to 25 and 61 % were in the age range of 26 to 35. Apparently, 55.5 % of the respondents had 1 to 5 years work experience and the rest 44.4 % of the respondents worked for 6 to 10 years.

Majority 82.2% of the respondents work only for one garment only, the rest 17.7 % of the respondent's work for two garment companies. Respondents were also asked if there was a time supply of brand scarcity; 72.2 % of the respondents replied that there was a time when their first priority swing machines disappeared from the market. When the first priority machines were become not functional the garment company makes them to work in shift until the problem is solved. Even though there is scarce of sewing machine that does not stay long; the scarcity is stayed for some time; this was confirmed by 72.2 % of the respondents. The sewing machine operators also asked about the performance of the machines; accordingly, 23.3 % of the respondents replied that the quality and performance of the sewing machines are significantly increases; on the other hand, 25.5 % of the respondents said that there was no change in the qualities of the sewing machines; whereas 15.5% and 6.6% of the respondents replied that the quality of the machines were decreased and significantly decreased respectively.

Table 4.2 response on sewing machine delivery

<b>For how many companies did you</b>	<b>Freq.</b>	<b>Percent</b>
One	74	82.22
Two	16	17.78
Total	90	100.00
<b>Is there a time supply of brand scarcity</b>	<b>Freq.</b>	<b>Percent</b>
Yes	65	72.22
No	25	27.78
Total	90	100.00
<b>Intimeofscarce</b>	<b>Freq.</b>	<b>Percent</b>
Stop sewing	21	23.33
Use alternativesewing machine	4	4.44
Work in shift	65	72.22
Total	90	100.00
<b>To what extent scarce</b>	<b>Freq.</b>	<b>Percent</b>
very highly scarce	21	23.33
highly scarce	4	4.44
moderate scarce	65	72.22
Total	90	100.00
Total	90	100.00
<b>Do the sewing machines are maintained by the same professional/individual</b>	<b>Freq.</b>	<b>Percent</b>
Yes	21	23.33
No	4	4.44
I don't know	65	72.22

Total	90	100.00
<b>Quality</b>	<b>Freq.</b>	<b>Percent</b>
Significantly increased	21	23.33
Increased	26	28.89
no change	23	25.56
Decrease	14	15.56
significantly decrease	6	6.67
Total	90	100.00

#### 4.2. Functioning's of Marketing Support Services and Constraints of Sewing Machinery

Table 4.3 Marketing Support Functioning and Constraints

<b>Brand</b>	<b>Rank according to their demand</b>	
PROTEX	1st	
HANMA	2nd	
MAQI	3rd	
MAREW	4th	
ANYSEW	5th	
Do your company get a enough technician to maintain the machines	Freq.	Percent
Yes	22	24.44
No	68	75.56
Total	90	100.00
Do your company get enough and continuous maintenance service	Freq.	Percent
Yes	25	27.78
No	65	72.22
Total	90	100.00
Is there a time supply of spare parts is scarce?	Freq.	Percent

Yes	61	67.78
No	29	32.22
Total	90	100.00
Is there a time supply of brand scarcity	Freq.	Percent
Yes	65	72.22
No	25	27.78
Total	90	100.00
What are the basic constraints on Sewing machine	Freq.	Percent
lack of spare parts	26	28.89
lack of brands	10	11.11
Lack of after sales provision	54	60.00
Total	90	100.00

Source: Own survey, 2019

There are ten types of sewing machine brands in the market; however, there are many differences in the market. Accordingly, the first highly demanded brand of sewing machine is PROTEX, followed by HANMA, MAQI, MAREW and ANYSEW. The other brands in their order of demand were JACK, JUKI, SIRUBA, JEMSI and ZEWJI.

Either the marketing functioning or the constraints were analyzed from the perspectives of brands mentioned above, as well as analyzed from three different perspectives, from the importers, sewing machine operators and key informant perspectives represented from garment industry. As mentioned in the introduction parts of this sub topic the marketing functioning supportive service concerns about the activities that was taking place after the sales of the sewing machine, accordingly, from the perspectives of the sewing machine operators getting enough technician to maintain the sewing machine were difficult, this was confirmed by 75.5 % of the sample sewing machine operators. Also, Accessing continuous maintenance service was difficult, confirmed by 65 % of sewing machine operators. In considering this the importing companies also mentioned that overall in the country there are lack of professional technicians, for this the importing company representatives justify that in Ethiopia the common sewing

machines are operated manually; whereas, the machines they are importing are somewhat advanced and new for the country, due to this reasons enough amounts of professional technicians is not available in the market. The one that exist in the market are too small and hence, it is difficult to get those technicians easily since every garment companies and individual owner needs them.

The second basic problems raised were scarcity of spare parts, where 68 % of the sewing machine operators confirmed. The intensive interviews made with sewing machine importers justify the reason from three different views, hard currency, profit and taxation. According to the importers there is high shortage of foreign currency and this highly discourage importers to import and sell the machines; not only importers discouraged by the shortage of hard currency, if an importer imports those spare parts at any cost, here the government awaits him to levied high tax on spare parts; this highly discourages business owners to import the spare parts. Furthermore, importers generate high amounts of profit from selling of the sewing machine instead of selling the spars, and hence, business owners give their attention towards those selling activities that has higher profit margins. Apart from these, the intensive interview made with importers revealed that the other problems of the sector is multiple times price increment of the sewing machines, lack of potential technicians and lack of awareness and knowledge of the sewing machine by customers.

### 4.3. Interview Response

In order to formulate a realistic picture of the marketing value chain of sewing machine the five importing companies were asked to recommend some solutions involved in importing and wholesaling, and retailing their product; the qualitative information gained mainly through interviews with the importing company representatives and owners was used extensively. Interviews were based on the interview guideline provided by the researcher. Through the product under investigation importing companies involved in a relatively simple value chain that expands into different regions customers. At the beginning of the value chain there are several different layers to it, and the different steps and functions in it are completed by several different organizations. The value chain process seems simple while especially at the beginning of the value chain there are many different difficulties. Basically, there are two so called nodes in the chain that are clearly visible the importing companies and consumers. The combination of qualitative research data and author's own interpretation is summarized in the figure below, which describes the value chain in hand in as simple manner as possible.

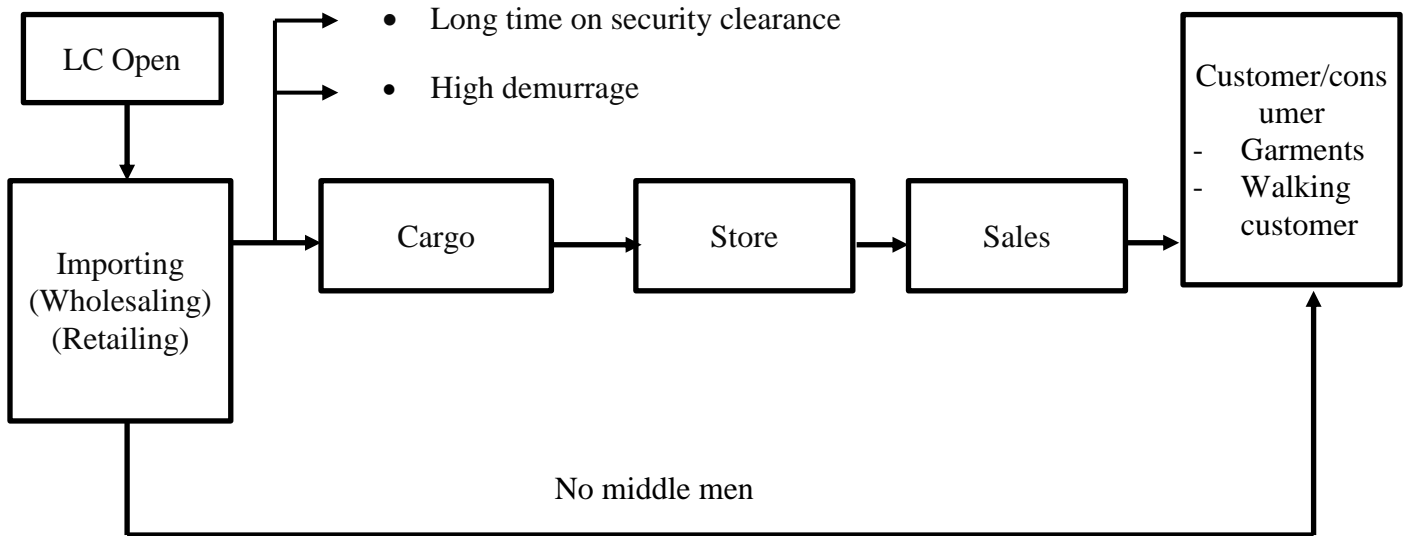


Figure 4.1 Value chain of Sewing Machine

The figure above does not contain any indication to the locations of different functions and actors along the value chain. Neither does it highlight or understate the importance of any single actor or group of actors within the chain. At this point, it is important to lay out the flow of components and different parts from very beginning of the value chain all the way to the end customers without any additional references.

The Value Chain Model presented in Figure 4.1 is divided into two different major stages according to the best judgment of the researcher derived from the data and information gained during the research process. The two main stages are as follows:

- Importer (also work as whole seller and retailers)
- End Customers

The importing companies directly import ten different brand type of sewing machine from different countries. As the product is a little high-tech or digital based and a little complicated, already their sewing machine suppliers operating with relatively basic materials and substances. Secondly suppliers of the sewing machine are the main players of the market their role in this research and investigation is very significant. As the readymade product is being sold to customers there are no many different actors involved in the process, and every sales affair is no unique. The number and form of actors in between importing companies and their end customers is largely determined by whether the customer is improving and maintaining old machinery or buying new sewing machine.

### 4.3.1. Summary of Descriptive Statistics

Under this sub topic the average statistics of the supply and its determinants would be discussed; accordingly, the description of six variables sales, capital, price, exchange rate and age of the companies would be discussed under here.

The first variable was sales volume of sewing machine, here the sales volume is expressed in terms of sales values; accordingly, with in the last five year on average a sales of 22,714,099 birr were sold, and the minimum sales was 10545826 birr and the maximum sales was 29341246 birr. The other variable was capital of the importing companies, the average capitals of importing companies was 1,206,000 birr was 500,000 birr is the minimum capital and 2,000,000 birr were the maximum capital. Apart from these, the average selling price of the sewing machines were considered, accordingly, the average selling price of the sewing machine was 10,700 birr. In considering the selling price 8000 birr were the minimum selling price and 14,000 birr were the maximum selling price of the sewing machines. Exchange rate was also considered in the analysis, within the last five years the average exchange rate was 22.203 birr per dollar, 19.074 were the minimum and 28.34 were the maximum exchange rate. Apparently, the less experienced companies were established 8 years before and the much experienced companies were established before 17 years. However, the average age of importing companies were 12 years of age.

Table 4.4 Average Statistics of Variables

<b>Variable</b>	<b>Obs</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
Sales	25	22714099	5053391	10545826	29341246
Capital	25	1206000	431161.2	500000	2000000
Price	25	10700	2273.03	8000	14000
Exchange rate	25	22.20326	3.327035	19.0748	28.34
Age of company	25	12.16	2.230097	8	17

Source: Own survey, 2019



#### 4.4. Results of the Regression Analysis

Table 4.5 regression estimation result

Source	SS	df	MS	Number of obs = 25 F( 4, 20) = 5.42 Prob> F = 0.0040 R-squared = 0.5204 Adj R-squared = 0.4245 Root MSE = 3.8e+06	
Model	3.1893e+14	4	7.9732e+13		
Residual	2.9395e+14	20	1.4698e+13		
Total	6.1288e+14	24	2.5537e+13		
Sales	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]
Capital	4.633225	4.139065	1.12	0.026	-13.26716 4.000713
Price	3.117085	1.128143	2.76	0.012	7.638188 5470.351
Exchange rate	-2.298481	6.02496.9	-3.81	0.001	-3.555268 1041695
Age of company	-4.1420.19	4.22648.6	-0.10	0.923	-9.23049.8 8.402094
_cons	4.65e+07	6998003	6.64	0.000	3.19e+07 6.11e+07

Source: Own survey, 2019

The regression analysis is done to estimate the determinants of sewing machine supply; the estimation is done using ordinary least square (OLS). The regression is done using a panel data where, a five year data were taken from five importing companies. All of the assumptions of OLS were fulfilled except multicollinearity; hence in order to avoid the problem of heteroskedasticity one variable that is Age of the company were removed from the regression.

The estimation result shows that the coefficient of determination or R<sup>2</sup> of the model was .5204 which indicates 52.04% the independent variables explain the dependent variable. Furthermore, the overall model is statistically significant ( $p < 0.01$ ). The results of the econometric model estimation revealed that capital of the company, selling price of the sewing machines and exchanger rate have found to have significant effect on sewing machine supply. On the other hand, age of the company didn't show a significant association with sewing machine supply.

Capital of the importing company had a positive and significant effect ( $p < 0.05$ ) on sewing machine supply. The analysis shows that as the capital of the importing company increases by one percent the amount of sales volume of the importing company's increases by 4.6 percent. The analysis suggests that capital is the main determinants of sales volume since the finding suggests more capital will lead to a better profit which could give some insight for those importers still sticking on low capitals, or distributing whose capital at different businesses. In support of this finding Jonsson (2007) also briefly concluding that larger firms have tendency to have higher rates of profitability. Akinlo & Asaolu, (2012) also mentioned that firm size in terms of capital has a significant positive effect on profitability which shows simply suggests that firms need to expand in size to enhance their profit level; meaning that firms will be able to enjoy large profit levels if they can increase in size and sales.

The other significant variable was the selling price of the sewing machine; this particular variable had positive and significant effect on sewing machine supply. The analysis revealed that as the price of the sewing machine increases by one percent the sewing machine supply also increases by 3.11 percent. Theoretically, the increase in price leads to increase in supply; meaning that the quantity of a particular good supplied in a market increases as price goes up because suppliers have an increased interest in producing goods to generate higher amounts of revenue; which is the basic principle of the law of supply and demand. However, due to the nature of the product increasing price might have a significant sales reduction; the nature of the product in this context mean that since it is manufacturing machines its price is much expensive; therefore, since the main customers of this importers are garments if there is much price change the manufacturing companies might directly import the product which leave the importers idle.

In contrary to the above findings exchange rate had negative and significant association with sewing machine supply. The analysis revealed that as the exchange rate increases by one percent or as the birr devaluation increases by one the sewing machine supply will decrease by 2.3 percent. It is understandable that the exchange rate has an effect on the trade surplus/deficit, which in turn affects the exchange rate, and so on. In general, however, a weaker domestic currency stimulates exports and makes imports more expensive. Conversely, a strong domestic currency hampers exports and makes imports cheaper. According to Kandil, Berument, & Dincer, (2007) if our one country currency rate increases due to foreign exchange rate declines

then the domestic country can import the goods at cheap prices. In contrast if the home country currency decreases due to an increase in exchange rate then the imports of the home country will decrease due to increasing in other country prices as well. If the domestic currency appreciates due to declining in exchange rate the domestic country exports will bring the high foreign exchange for the country and vice versa. When some countries currency increases or decreases it brings the changes in the whole business of the country at very much extent.

## CHAPTER FIVE

### SUMMARY OF FINDING, CONCLUSION AND RECOMMENDATION

#### 5.1. Summary of major findings

The following are the major findings of the research

- In the market ten types of sewing machine brands are delivered to the market; PROTEX, HANMA, MAQI, MAREW and ANYSEW, JACK, JUKI, SIRUBA, JEMSI and ZEWJI.
- The Value Chain is divided into two different major stage; Importer (also work as whole seller and retailers) and End Customers. How this works is the importing companies directly import sewing machine from different countries and distribute to different final customers. suppliers of the sewing machine are the main players of the market; there are no many different actors involved in the process since readymade product is being sold to customers and every sales affair is no unique
- The findings of the study also shows that it is difficult to get enough technicians to maintain the sewing machine apparently, accessing continuous maintenance service were difficult and overall in the country there are lack of professional technicians.
- Highly demanded brands sometimes don't exist in the market when the garment companies need them badly for the purpose of expanding their product as well as changing the old ones; particularly during the time of old machine failures garment companies oblige to makes tailors to work in shift until the problem is solved. However, the brand scarcity didn't stay long.
- The findings of the study further revealed that there are sewing machines spare part scarcity. It is also found out that the scarcity of spare parts is happening due to shortage of hard currency, taxation and low profit. In addition to this multiple times price increment of the sewing machines were the other problem challenges the sewing machine supply sector.

- The finding of the study also shows the quality of the sewing machines fluctuates time to time; quality in this context means the durability of the sewing machine. This means for some years the quality of the machines are persistent stayed long without changing the quality and for other years if changes.
- The findings of the study further revealed that the sewing machine supply was significantly determined by the price of the sewing machine, the capital of the importer and the exchange rate.

## **5.2. Conclusion**

The purpose of this study was to analyze value chain analysis of industrial sewing machineries in Addis Ababa. Specifically, this research intends to identify the functioning's of sewing machinery marketing support services, identify the key factors affecting the supply of sewing machineries and analyze the constraints that suppliers and customers encounter in the market. Descriptive research design was employed where data were collected from importers, sewing machine operators and garment factory representatives. The findings of the study revealed that ten types of sewing machine are delivered in the market where mainly the five one's are demanded dominantly. Although the sewing machines are delivered to the market the functioning's of sewing machinery marketing support service is not working properly. Furthermore, the value chains of sewing machine have to dominant nodes, the importers who work as whole seller and retailer and the customers. Furthermore, the analysis of the study revealed that the sewing machine supply was significantly determined by the price of the sewing machine, the capital of the importer and the exchange rate.

### 5.3. Recommendation

Based on the finding from the questionnaires and the interview questions, the following are suggested

- As the finding indicates there is communication gap between suppliers and consumers in terms of machines operation and hence, in order to fill this gap importing companies should evaluate their consumer support service by providing proper sales service and training programs for the technicians.
- The other problem of the value chain was lack awareness in adopting and handling new and updated type of sewing machine as well as maintenance technicians; therefore, as supplying sewing machine is not the only job to do, building up sewing skills, spare parts, professional machinery maintainer are those notions needed to be in collection of industrial sewing machinery value chain. Therefore, through creating collaboration between suppliers and customers. There for continuous communication should be there in terms of training, easy ways of providing spare parts and technicians and other related issues.
- As Ethiopians population size is currently increasing as a result the government is giving pre village for the sector of textile industry which will be high demand of industrial machineries but meeting the demand should also be accompanied by prioritization for the importers in the LC process as well fair taxations on the spare parts.
- Garment Factories should regard updating their information to keep in touch with upgraded technology of sewing machinery. They should consider the proper training programs for their employees, and thereby it will be a way of establishing strong link between the machine and the operators which increase durability of the machine and intern less cost which minimize mechanical defect of the machines which creates competitive advantage.
- Further research should be carried out on resolving problems encountered during importing of sewing machineries and awareness of consumers of new high-technology operation machineries

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# APPENDICES

## Appendix A

### OLS Regression: Determinants of Sewing Machine Supply

#### Assumptions of Ordinary Least Square (OLS)

Before running and using ordinary least square the data should fulfill certain assumptions such as multicollinearity, heteroskedasticity, Normality and Linearity. The tests of each of the assumptions are discussed below in detail.

#### The Assumption of Multicollinearity

The assumptions of multicollinearity states that the independent variables should not have a linear relationship, each of the independent variable are expected to have non-linear relationship between each other. Among the method of testing multicollinearity variance inflation factor (VIF) test is the most common one, accordingly, for the purpose of this study a vif test were employed to test the problem of multicollinearity. Here is the details, the interpretation is done through observing the results of the vif test output, if the vif result of is greater than 10 it is the indication of the existence of multicollinearity problem and as it is observed in one variable brand had a vif value of greater than 10, and hence, a remedial solution should be taken, among the remedial actions removing the variable that create the problem is the most common one, accordingly, the variable brand of the sewing machine will be discarded from the regression. Both of the tables that show before and after the solution is shown below;

Assumption test of multicollinearity

Variable	VIF	1/VIF
Price	8.46	0.026003
Brand	15.73	0.027989
Exchange rate	6.58	0.152013
Capital	5.80	0.172479
Age	1.46	0.686079
Mean VIF	7.606	0.212913

Variable	VIF	1/VIF
Price	8.74	0.093132
Exchange rate	6.56	0.152410
Capital	5.20	0.192289
Age	1.45	0.689336
Mean VIF	5.4875	

Source: Own survey, 2019

### **The assumptions of Heteroskedasticity**

The assumptions of heteroskedasticity states that the error variance or the disturbance term should have a constant variance across the whole observation; if the disturbance term didn't have a constant variance the problem of heteroskedasticity will happen. In order to test these problems there are different kinds of test, among those tests for the purpose of this research Breusch-Pagan / Cook-Weisberg test for heteroskedasticity were employed. The interpretation of these test is done through looking the p-values of the result if the p-value is less than five percent it is the indication of the existence of the heteroskedasticity problem; however, if the p-value is greater than five percent it means that there is no the problem of heteroskedasticity. Accordingly, as it observed in the table below the p-value is greater than five percent, and hence, the data is free from heteroskedasticity problem.

Assumption test of heteroskedasticity

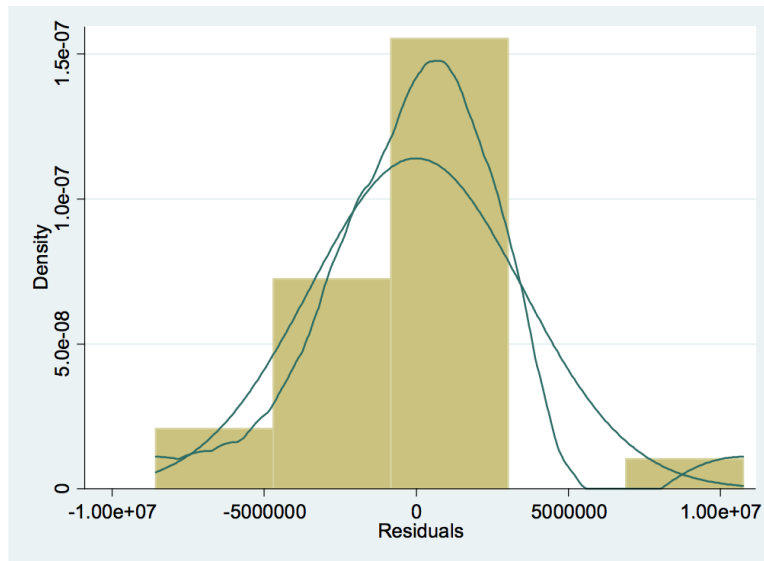
<p style="text-align: center;">Breusch-Pagan / Cook-Weisberg test for heteroskedasticity</p> <p style="text-align: center;">Ho: Constant variance</p> <p style="text-align: center;">Variables: fitted values of sales</p> <p style="text-align: center;">chi2(1) = 2.70</p> <p style="text-align: center;">Prob&gt; chi2 = 0.1001</p>
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Source: Own survey, 2019

### **The Assumptions of Normality**

Normality assumption considers the normality of the disturbance term; the assumption states that the error variance or the disturbance term should be normally distributed. In order to test the

normality a histogram test were performed. As it observed in the graph below the disturbance term is almost normally distributed.

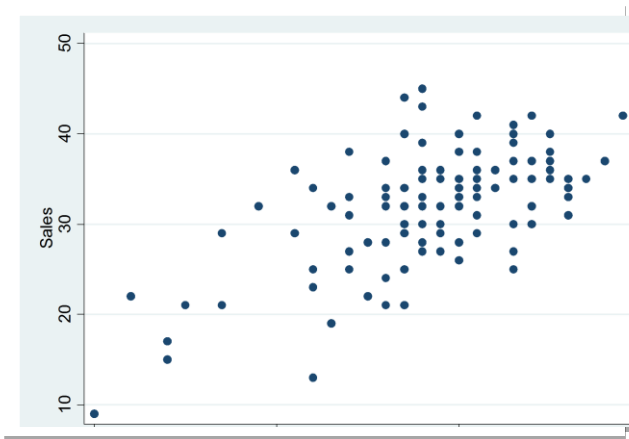
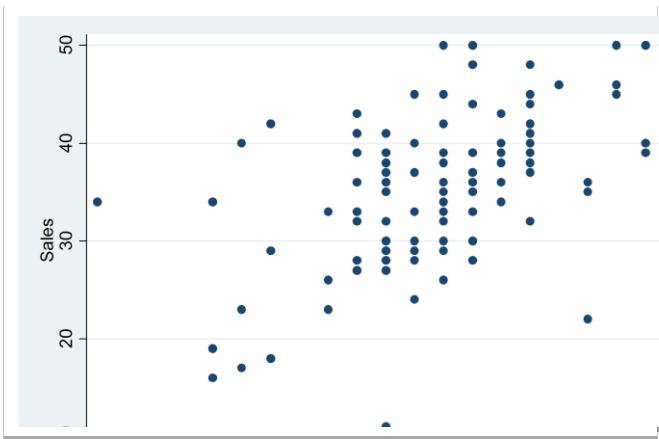
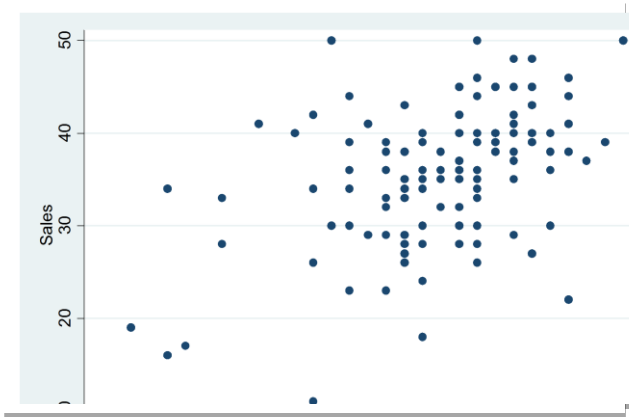
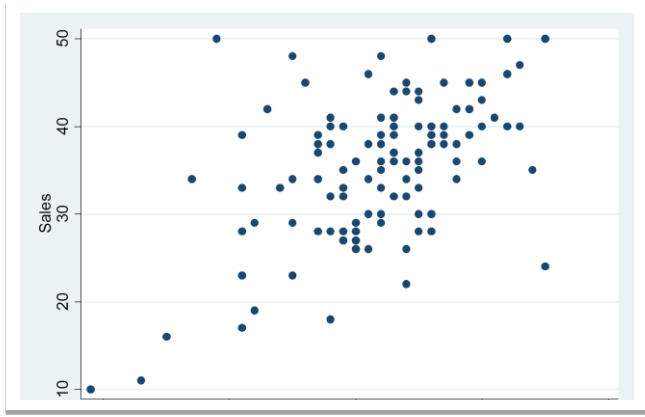


Assumption test of normality

Source: Own survey, 2019

### **The Assumptions of Linearity**

The assumptions of linearity are one of the assumptions that should be fulfilled in ordinary least square estimation; the assumption states that the dependent and all of the independent variables should have a linear relationship. In order to test the linear relationship between the dependent and the independent variables a scatter plot test was performed and as we can see in the diagram below the assumptions are fulfilled.



Assumption test of Linearity

Source: Own survey, 2019

**Appendix B**  
**St. Mary's University**  
**School of Graduate Studies**  
**Department of Business Administration**

Questionnaire to be filled by respondents

Dear respondent,

This questionnaire is designed by a graduate student from St. Mary's University to conduct a study in partial fulfillment of a master's degree program in General Management. As part of the requirement for the award of the degree, I am expected to undertake a research study the value chain analysis of sewing machine. Therefore, seeking your support to fill the questionnaires attached. This questionnaire will take about 15 minutes to complete. Kindly reply all the questions. Participation in this study is voluntary, and all who participate will remain anonymous. Your name is not required. All information offered will be treated confidentially, and the results will be presented in such a way that no individuals may be recognized.

Thank you in advance for the available information you are sharing and the precious time you are going to spend for this purpose.

If you have any enquiry please don't hesitate to contact the researcher on:

Email:- [enas@ethiosewingmachine.com](mailto:enas@ethiosewingmachine.com)

Nam:-EnasMohammed

**Questionnaire for machine Importers and distributors**

1. What is your major means of income generation?

A) Only sewing machine sales B) I have additional business

2. How long have you practiced selling sewing machine? \_\_\_\_\_ Years

3. What is the nature of your business (you can select more than one)

A. Importer

B. Whole seller

C. Retailer

D. Other \_\_\_\_\_

4. If you are importer can you list the brand ? \_\_\_\_\_

Sewing machinetype (brand)	Rank according to their demand

5. Number of employees on your business \_\_\_\_\_

6. Is the shop your own? (√) A) [ ] Yes mine B) [ ] No, it is rent

7. Total capital of your business \_\_\_\_\_ birr

8. Do you have your own transportation facilities? (√) A) [ ] Yes B [ ] No

9. Is your business family owned/oriented? A) [ ] Yes B [ ] No

10. Most of your customers come from which region?

A. Addis Ababa B. Oromia C. Tigrai D. Southern Nation E. Amhara

E. Other \_\_\_\_\_

11. Are your sales increases since you start the business? A)  Yes      B  No

1. If your answer is Yes/No what are the reasons? \_\_\_\_\_  
\_\_\_\_\_

12. Would you like to expand your business? (✓) 1.  Yes      2.  No

1. If your answer for Q.12 is No, why? \_\_\_\_\_

13. What are the basic constraints on your business/Sewing machine trading?

- Availability of spare parts
- Availability of brands
- Price increment
- Lack of after sales provision
- Lack of professional technician
- Lack of awareness about the machines by customers

14. Did you engaged on other business before you start selling sewing machine? (✓)

A)  Yes      B)  No

15. Who are your basic customers? \_\_\_\_\_

16. To whom do you sell most of your products?

A) Directly to customer (companies)    B) whole sellers    C) retailers

17. How is the trend of price per unit of sales of sewing machine during the last 5 years? (✓)

A. Increased      B. Decrease      C. No change

1. If increasing, why? \_\_\_\_\_

2. If decreasing, why? \_\_\_\_\_

18. Do you consider quality requirement of your customers in your sells?

A  Yes      B.  No

19. What was the amount of your initial working capital when you start this trade business? \_\_\_\_\_ birr.

20. What is the amount of your current working capital? \_\_\_\_\_ birr.



21. What is your source of working capital? (✓); A)  Own B)  Loan C)  Family  
 D)  Share 5.  Others (specify).

22. Which are the months of the year when prices are lowest and highest?

Highest \_\_\_\_\_

Lowest \_\_\_\_\_

23. How did you sale your produce? (✓) A)  Direct to the purchaser B)  Through  
 broker C)  Other (specify)\_\_\_\_\_

24. When did you get the money after sale? (✓) A)  As soon as you sold B)  After  
 some hours C)  On the other day after sale D)  Other \_\_\_\_\_

25. Are there problems on sewing machine marketing? (✓) A)  Yes B)  No

1. If your answer to Q.25is Yes, what are the problems?

	Yes	No	Remark
Credit			
Price setting			
Supply shortage			
Excess tax			
Storage problem			
Lack of demand			
Information flow			
Quality problem			
Government policy			
Lack of government support to improve sewing machine marketing			
Others(specify)			

Other problems \_\_\_\_\_  
 \_\_\_\_\_

26. What do you think are the causes of the problems? \_\_\_\_\_

## Questionnaire for customers/garments/machine operators

### Part One: General Information

1. Age of the respondent: [\_\_\_\_\_] years
2. Sex of the respondent (√): A) [ ] Male B) [ ] Female
3. How long have you work in this garment A) 1-5 B) 6-10 C) 11-15 D) >15

### Part Two: Business and Resource

1. What type of sewing machine is are you use to sew

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2. What are the basic constraints on Sewing machine consumption?

- Availability of spare parts
- Availability of brands
- Lack of after sales provision
- Lack of professional technician

3. Have you ever sew using different type of sewing machines\_\_\_\_\_

A) Yes B) NO

1. If you say yes, which one is good brand sewing machine\_\_\_\_\_

2. If you say yes Which one is bad \_\_\_\_\_, what was the problem

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4. Do your company get a enough technician to maintain the machines A) Yes B) No

5. Do your company get enough and continuous maintenance service A) Yes B) No

1. How many times per year your machine maintained\_\_\_\_\_

2. Which brand machine mostly need maintenance \_\_\_\_\_

2. Is there a time supply of spare parts is scarce? A) Yes B) No
3. Is there a time supply of brand scarcity \_\_\_\_\_
4. Which type of brand had most spar part availability \_\_\_\_\_

Is there any other comment concerning the sewing machine

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## **Interview Questions**

1. what is the status of the sales for the last three to four years
2. how do you see the value chain of sewing machine
3. is there more middle men in sewing machine distribution
4. what are the main constraints of your business
5. how do you see the performance of the machines with in the last few years

## **DECLARATION**

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of HAILEMARIAM KEBEDE(PhD). All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

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Name

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Signature & Date

## **ENDORSEMENT**

This thesis has been submitted to St. Mary's University, School of Graduate Studies for examination with my approval as a university advisor.

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Advisor

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Signature & Date