



Assessing Managers' Perception on Supply Chain Practices and Export Competitiveness

(Case of Sesame Seed Exporter Members of Ethiopia Commodity Exchange)

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**ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES**

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CERTIFICATE

This is to certify that the thesis entitle “ASSESSING MANAGERS’ PERCEPTION ON SUPPLY CHAIN PRACTICES AND EXPORT COMPETITIVENESS: CASE OF SESAME SEED EXPORTER MEMBERS OF ETHIOPIA COMMODITY EXCHANGE”, submitted to Addis Ababa University, School of Commerce to undertake a research in partial fulfillment of the requirements for the award of the degree of Master of Arts (MA), has been prepared by Mr. Hailemichael Hailu Gebregiorgiss under my guidance and supervision.

Therefore, I hereby declare that no part of this thesis has been submitted to any other University or Institution for the award of any Degree or Diploma and all the matters embodied in the thesis have been duly acknowledged.

Advisor Name

Signature

Date

DECLARATION

“I declare that ASSESSING MANAGERS’ PERCEPTION ON SUPPLY CHAIN PRACTICES AND EXPORT COMPETITIVENESS: CASE OF SESAME SEED EXPORTER MEMBERS OF ETHIOPIA COMMODITY EXCHANGE is my original work, that all the source I have used or quoted have been indicated and acknowledged as complete references, and that it has not been submitted for degree purposes previously”

Researcher Name

Date

Signature

Hailemichael Hailu

June, 2016

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DEFINITION OF TERMS

- **Spot/Physical/ market:** in this context is a market that trades contracts for immediate delivery.
- **Futures market:** is a commodity exchange that trades a standardized contract for delivery on a specified future date. The contract specifies the commodity, place of delivery, quality, and time of delivery.
- **Over the counter market:** is a platform in which contracts are traded between contracting parties outside of an exchange that could be through phone or e-mail.
- **Member:** Any person recognized as an Exchange Actor by the Ethiopia Commodity Exchange Authority that fulfills the requirements of the Ethiopia Commodity Exchange (Rules of the Ethiopia commodity Exchange, Rev. No 8/2014).
- **Membership Seat:** A permanent, freely transferable, and exclusive right to trade on the Exchange (Rules of the Ethiopia commodity Exchange, Rev. No 8/2014).
- **Market Data:** information on trades completed on the Ethiopia Commodity Exchange including orders like prices bid or offered, opening, closing, highest and lowest prices entered, trading volume and etc. (Rules of the Ethiopia commodity Exchange, Rev. No 8/2014).

ABSTRACT

Competition is no longer between organizations, but among supply chains. Effective supply chain management provides opportunities to create sustainable competitive advantage and enhance the competitive position of business firms. This paper attempts to study the impact of supply chain management practices on competitive position of Sesame Seed Exporter Members of Ethiopia Commodity Exchange (ECX). This research conceptualizes and develops four dimensions of SCM practice (internal and external success factors, strategic buyers' partnership, customer relationship, and information communication) and tests the relationships between SCM practices and competitive position. The data for the study was collected from 78 middle/senior management staff of the exporter firms who are familiar with the corporate strategies and supply chain operations of their companies. The relationships proposed in the framework were tested using Kendall's tau correlation, and the causal relations were analyzed using one-way ANOVA. The results show that efforts in: (1) implementing the right internal and external success factors, (2) enhancing buyers' partnership, (3) effective Information communication and (4) improving Customer Relationship have significant impact on the competitive position of the exporter firms.

Keywords: Supply Chain Management, Exporter, Competitive Position, ECX, Ethiopia.

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LIST OF ABBREVIATIONS

FAO	Food and Agricultural Organization of the United Nations
CSA	Central Statistics Agency
ERCA	Ethiopian Revenue and Customs Authority
ECX	Ethiopia Commodity Exchange
OTC	Over the Counter
UN	United Nations
LPI	Logistics Performance Index
SC	Supply Chain
SCM	Supply Chain Management
QCD	Quality Cost and Delivery
ERP	Enterprise Resource Planning
SPSS	Statistical Package for Social Sciences

CHAPTER ONE: BACKGROUND OF THE STUDY

1.1 Statement of the Problem

The international demand for sesame continues to increase every year. The world's traded sesame seeds recently surpassed one million tons per year, valued at roughly \$850 million. In the last 15 years, the world's trade in sesame has increased by nearly 80 % (FAO, 2015). The oilseed sector in Ethiopia is also one of the fastest growing sectors in the economy, both in terms of its foreign exchange earnings and as source of income for millions of Ethiopians. Sesame is among the most important oilseed crops in the country, mainly as a commercial export commodity. Ethiopia is the biggest sesame exporter in the world next to India. For the year 2014, sesame export amounted nearly 304,000 tons (UN Comtrade, 2015). Sesame marketing has demonstrated highly significant growth. Over the past decade (2002-2012), earnings from sesame exports increased from 66 to 427 million US\$ (ERCA, 2012). Its contribution to national export earnings has increased from 6.7 to 13.8 percent in the same period.

Several commodities, amongst which important export crops like coffee and sesame, are now sold through the Ethiopia Commodity Exchange (ECX). Since 2009 it has been compulsory to sell all coffee through the ECX. For sesame, trades through the ECX become mandatory from the 2010 season onwards. The export market is the main driving factor to sesame production in Ethiopia as there is a very limited domestic use of the crop. Hence, Ethiopian sesame seed exporters are trying to reach the international market passing through the facilities of this modern Ethiopian agricultural market. Around 90 percent of sesame seeds and all white pea beans are bought by exporters on this state-owned commodity exchange (www.ecx.com.et, accessed December 05, 2015).

ECX works on the basis of membership. People, who want to sell or buy, have to purchase a membership seat or they need to sign an agreement with a member so that the member can buy or sell on their behalf. Farmers or traders, who wish to sell, deposit their commodity in an ECX approved warehouse. Most commodities in

Ethiopia are produced by millions of smallholder farmers who each produce small quantities. For sesame, average yields vary from 300 to 600 kg per hectare in Ethiopia (J.H.M. Wijnands, J. Biersteker and E.N. van Loo, 2009). Hence, farmers need to group their produce if they wish to sell through the ECX. This can be done through a cooperative, union or by traders.

ECX's overriding objective is to ensure a fair, orderly, and efficient marketing system to encourage smallholder farmers to produce more for the market, to benefit domestic agro-industry through a more efficient and reliable supply chain, and at the end to enhance commodity exporters' (including sesame exporters') competitive position through getting the domestic market in order (Capital, 2008). Experience of the past seven years that ECX has been operational has shown that trade through ECX provided market integrity (by guaranteeing the product grade and quantity and operating a system of clearing and settling of payments and goods); enhanced the local market efficiency (by operating a trading system where buyers and sellers can coordinate smoothly at minimal costs); and also created market transparency by disseminating market information in real time to all market players (www.ecx.com.et, accessed December 05, 2015). Apart from access to this modern commodity Exchange, a number of competitive advantages also exist for Ethiopian sesame seed exporters: political stability, good access to regional and international export markets, good agro-climatic conditions and generous investment incentives (SBN, 2014).

Contrary to these facts, however, an Exchange that offers only spot trading means that the Exchange does not perform a function central to all Exchanges which is addressing market risks. This, first and foremost, compromises the fundamental value that the Exchange would offer to market actors (Eleni, 2007). Buyers and sellers trading at ECX would not have a mechanism of managing risk of unforeseen movement on price of commodity. This in turn would result in complain from buyers particularly from sesame seed exporters who buy contracts on ECX spot market and sell forward contract in the over the counter (OTC) market. An exporter who signed a forward sale contract is obliged by law to honor the contract regardless of the price difference between agreed price and actual market price. Exporters are exposed to price risk during times of price volatility. The competitive position of sesame exporters

is further depleted due to ECX's free access for information (including market price and volume of stock) through mass media and the internet.

FAO report (2015) indicated that Ethiopia is top raw sesame seed exporter in the world, supplying 14% of the global market for raw seeds. These seeds are then processed abroad and sold at higher prices after some value addition. The report further explained that the domestic processing capacity in Ethiopia is currently quite limited. Hence, Ethiopia is losing out on the opportunity to increase sesame revenues by mainly exporting seeds raw. The country's export performance remains very weak and the export structure rigid. Currently, the price paid for Ethiopian sesame seed is below world average (Researcher's analysis based on UN Comtrade, 2014; accessed January 05, 2016). In the past years, demand for sesame has been high, but incentives for quality production and value addition are weak. Global production has increased, and a price decline is intensified with increased competition and greater demand for quality. Most of the traders at ECX also argue that China takes large quantities, but it wants products as cheap as possible. Hence, they believe that sales of organic farming cannot be sustainable with China, as its focus is more on price than on quality (Sesame Business Network, 2014). Majority of sesame seed traded through ECX goes to the low paying markets of China, Israel, Turkey, and other countries in the Middle East. This is because trading through ECX does not meet the quality requirements by customers in several high value end markets of USA, Europe and Japan (Jennie V. Mheen-Sluijer, 2010). Worldwide, the concept of quality products among consumers is growing: taste is important but so are the conditions in which products were made. Hence, product quality increasingly includes criteria related to environmental and socio-economic sustainability. This can be clearly identified by looking at market trends in Western countries.

Heizer and Render (2007) defined supply chain management as the integration of the activities that procure materials and services, transform them into intermediate goods and final products and deliver them to the customers. Fawcett, Ellram and Ogden (2007) indicated that the nature of competition has changed in that competitions are becoming to be among different supply chains as it is helpful to leverage the strength of the suppliers and customers to gain the competitive edge. This shows that the

satisfaction of the customer is given a due consideration and the process requires well aligned and integrated partnership with suppliers and other members of the supply chain members. Functional boundary walls need to be demolished and everyone works together as a process team to serve the best interest of the ultimate customer.

The researcher hardly finds enough literature on the current supply chain practice in the Ethiopian Sesame sector. According to Belay (2011), however, Ethiopia's experience in the area of procurement, logistics and distribution management, indicate that the practice of the supplier-customer relation is merely transactional instead of strategic alliances. The most accustomed and taken as transparent way of procurement is bid to purchase as experienced by ECX. Though this may enable to secure least price bid, it may not guarantee sustained lower cost, inventory, short delivery time, share appropriate feedbacks and improved reliability.

Internally, most firms are organized functionally, not integrated as a flow of processes. As described by Hoole (2005), most of the people wear the hat of functionality. This leads to the lack of common thought of an integrated approach within and across organizations. According to Baharanchi (2009), an integrated supply chain is linked organizationally and coordinated with information flow, from raw materials to the on-time delivery of finished products to customers. The entire supply chain is linked by information about anticipated and actual demand. Mirquez (2010) explained that unless and otherwise the flow of information is both effective and efficient, lack of trust and bullwhip effect would appear into the system.

Due to the visible demand as well as attractive profits gained currently in the global sesame market, Ethiopian sesame exporters' 'business as usual' way of competition would not last in a sustained manner. The main importer of Ethiopian sesame, China (which is also a major sesame exporter), India (world's leading sesame producer) and many African countries like Nigeria, Tanzania and Uganda are big competitors in the global sesame industry. They can invest huge capital; bring in new technology and knowledge. As today is the era of globalization, these countries would be striving to improve their position in the current market.

Therefore, this research is intended to study the supply chain management practices of sesame exporters trading at ECX and its impact on their competitive position.

1.2 Research Hypotheses

Prior studies have indicated that the various components of SCM practices (such as internal-external success factors, buyers' partnership and information sharing etc.) have an impact on organizational performance and competitiveness. For instance, Harrison and Hoek (2008) argued that internal-external success factors are the drivers of SCM initiatives and the sustainability of business firms. External integration between partners in a supply network is an important destination. But internal integration is the essential precursor to external integration. They argued that core functional domains that form parts of the supply chain or impact supply chain performance need to align around priorities, opportunities and approaches. For Cox and et al. (2003), both of the internal and external success factors must be present in the buying company and in the supply organizations in the extended supply chain to be managed so that competitive position of supply chain members will be enhanced. Accordingly, based on these arguments it is hypothesized that:

Hypothesis 1: There is relationship between the internal-external success factors and competitive positioning of firms.

Similarly, intangible resources like buyers' partnerships are considered as sources of strategic competitive advantage (Dyer & Singh, 1998). If today's economy is really a network economy (Barabasi, 2003), and most of the competition takes place across network-embedded companies (Dyer & Singh, 1998) and their corresponding networks, then relationships can be viewed as key resources (Morgan & Hunt, 1994; Johnson & Selnes, 2004), and their management is thus a key source of competitive position leading to a favorable market share and financial performance (Morgan & Hunt, 1994). These arguments indicate that there is relationship with buyers' and competitive position of firms. Hence,

Hypothesis 2: There is relationship between buyers' partnership and competitive positioning of firms.

To achieve excellence, managers need to look beyond the organizational boundaries and develop strong relationships with customers to create value (Fawcett & Magnan, 2002). Many organizations have started to realize that enhanced relationships with

customers can lead to customer loyalty and retention, higher profitability, and enhanced competitive position of the company. Information Technology and Information Systems play a key role in fostering such relationships. Types of customers and behavior patterns of the customers have immediate effect on the operations of the company. The customers have to be segmented to identify strategically important customers and efforts must be made to develop strong relationships with them (Xu & Walton, 2005).

Based on the above arguments, the researcher posits the following hypothesis:

Hypothesis 3: There is relationship between firms' efforts to improve the strength of relationships with the customers and the competitive position of the firms.

Information technology enables the rapid sharing of demand and supply data at increasing levels of detail and sophistication. The aim is to integrate such demand and supply data so that an increasingly accurate picture is obtained about the nature of business processes, markets and end-customers. Such integration provides increasing competitive position in a supply chain (Harrison and van Hoek, 2008). Information sharing leads to high levels of supply chain integration (Li et al., 2006) by enabling organizations to make dependable delivery and introduce products to the market quickly. Effective information sharing is associated with the lower total cost, the higher-order fulfillment rate and the shorter-order cycle time (Moslem, 2013). Supply chain management could be mentioned as a co-ordination of materials, information and financial flows along supply chain to satisfy the ultimate need of the customers (Stadtler, 2005). These days information is not only a resource, but it is a main resource of securing a competitive advantage in coordinating within and across organizations activities. In line with these arguments it is hypothesized that:

Hypothesis 4: There is relationship between effective Information communication and competitive positioning of firms.

1.3 Objectives of the Study

The general objective of the study is to assess Managers' perception of supply chain management practices and competitive position of firms in the case of sesame exporter members of ECX.

Specific objectives include:-

- To assess existing SCM practices as perceived by middle/senior management of case business firms and show their impact on competitive position of these firms.
- To provide an insight into the sesame seed supply chain structure of Ethiopia with a particular emphasis on sesame seed traded via ECX.
- To give a highlight on the existing status of sesame seed exporter members of ECX in terms of ownership, management, capacity and potential.

1.4 Significance of the Study

This research paper provides an insight into the SCM practices of sesame seed exporter members of ECX and how this has impacted the competitive position of these firms.

The researcher presumes that this research paper will contribute for accumulation of knowledge in the study area. It will share knowledge for those who would like to engage in oil seed export business like sesame seed export. Apart from this, the study will also be used as a foundation for other researchers who would like to undertake research on similar and related areas of study.

1.5 Scope of the Study

The study is limited to examining the impact of SCM practices on the competitiveness of ECX's sesame seed exporter members. SCM practices of these exporter firms as well as their competitive status relative to competitors in the industry are measured through the perception of senior/middle level managers in these firms. Sesame exporters who are allowed by the government to make direct export and hence do not trade on the ECX platform are not within the scope of this study.

1.6 Limitations of the Study

Lack of objective data to measure the competitive position of firms was the major limitation. This was due to the fact that majority of the objective measures of business

firms' performance and competitive position like sales and profit data are kept confidential by most business firms. Similarly, end customers of the case firms are in the international market and hence due to time and financial constraints, they were not contacted to collect their perception on the case firms' product quality and differentiation as well as the relationship status and the mechanisms by which these firms are responsive to their feedbacks. Accordingly, top and middle level managers' perception data of the case firms are utilized to measure the SCM practices and their competitive positions.

Since practice of supply chain management is new to Ethiopian business firms, lack of standardized questionnaire to measure the research problem was also a limitation.

1.7 Organization of the Research Report

This research paper has five chapters. The first chapter is a background to the research which contains statement of the problem, the research hypotheses, and objectives of the study. It also touches up on significance of the study, scope, limitations, and organization of the study. The second chapter deals with literature review, in which critical review of scholars' work in the research topic is presented. The third chapter discusses the methodology utilized to conduct the research i.e. the research approach, data type and source, sampling procedure and method of data analysis. Chapter four provides the finding of the study in which data analysis, presentation and interpretation is conducted. Finally, the fifth chapter presents summary of findings, conclusions, and recommendations.

CHAPTER TWO: LITERATURE REVIEW

2.1 Basics of Supply Chain Management (SCM)

Supply Chain (SC)

For supply chain, a number of definitions are available in the literature and among various professional associations depending on the background where they come from. Harrison and van Hoek (2008), define supply chain as a chain that ranges from basic commodities (what is in the ground, sea or air) to selling the final product to the end-customer to recycling the used product. They used the analogy to the flow of water in a river to describe organizations near the source as upstream, and those near the end-customer as downstream. Hence, they refer to each firm in a supply chain as a partner, because that is what they are. Accordingly, a supply chain can be re-defined as a network of partners who collectively convert a basic commodity (upstream) into a finished product (downstream) that is valued by end-customers, and who manage returns at each stage. Each partner in a supply chain is responsible directly for a process that adds value to a product (Harrison and van Hoek, 2008).

Branch (2009) defines supply chain as the sequence of events in a goods flow, which adds value to the value of a specific good. These events may include conversion, assembling and/or disassembling and movements and placements. Here, it can be seen that the supply chain is the one which links the producer/manufacturer/supplier with the distributor/consumer involving a dedicated service which is completely transparent with each element of the supply chain throughout the transit up to the end consumer.

For Chopra and Meindl (2007), a supply chain consists of all parties involved, directly or indirectly, in fulfilling a customer request. The supply chain includes not only the manufacturer and suppliers, but also transporters, warehouses, retailers, and even customers themselves. Here, within each organization, such as a manufacturer, the supply chain includes all functions involved in receiving and filling a customer request. These functions include, but are not limited to, new product development, marketing,

operations, distribution, finance, and customer service. (Sunil Chopra and Peter Meindl, 2007)

In all of these definitions, a supply chain is viewed as dynamic and involving the constant flow of information, product, and funds between different stages. These definitions also imply that the customer is an integral part of the supply chain. Hence, the primary purpose of any supply chain is to satisfy customers' wants and, in the process, generate profit for itself.

Supply Chain Management (SCM)

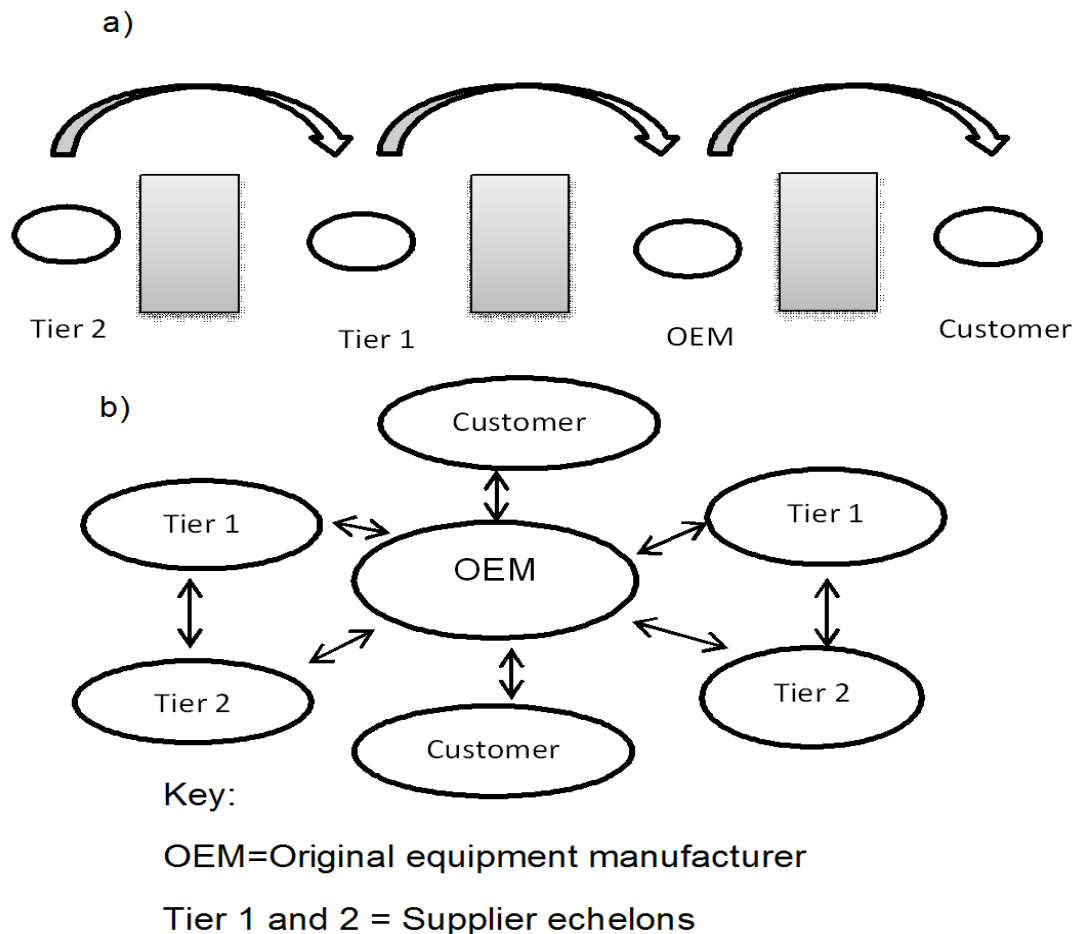
According to Alan Harrison and Remko van Hoek (2008), Supply chain management (SCM) involves planning and controlling all of the processes from raw material production to purchase by the end-user to recycling with the aim that the needs of the end-customer are served correctly. Here they noted that, 'Serve the needs of the end-customer' has different implications in different contexts. In not-for-profit environments such as public health and local government, serving implies 'continuously improving', 'better than other regions/countries', 'best value' and the like. In the commercial sector, serving implies 'better than competition', 'better value for money' and so on. However, in either situation, the focus of managing the supply chain as a whole is on integrating the processes of supply chain partners, of which the end-customer is the key one (Alan Harrison and Remko van Hoek, 2008). In effect, the end-customer starts the whole process by buying finished products. It is this behavior that causes materials to flow through the supply chain (Gattorna, 1998).

Another version for the meaning of supply chain management is given by Martin Christopher (2011) and defines supply chain management as *"the management of upstream and downstream relationships with suppliers and customers in order to deliver superior customer value at less cost to the supply chain as a whole. Thus the focus of supply chain management is upon the management of relationships in order to achieve a more profitable outcome for all parties in the chain. This brings with it some significant challenges since there may be occasions when the narrow self-interest of one party has to be subsumed for the benefit of the chain as a whole."*

He continued, *“whilst the phrase ‘supply chain management’ is now widely used, it could be argued that it should really be termed ‘demand chain management’ to reflect the fact that the chain should be driven by the market, not by suppliers. Equally the word ‘chain’ should be replaced by ‘network’ since there will normally be multiple suppliers and, indeed, suppliers to suppliers as well as multiple customers and customers’ customers to be included in the total system”* (Christopher, 2011).`

Christopher (2011) identified three versions of supply chain management: *Conventional supply chains Synchronized Supply Chains (or networks) and the Virtual Supply Chains*. As depicted in figure 1 below, each stage in the conventional chain tends to be disconnected from the others. Even within the same company the tendency is for separate functions to seek to optimize their own performance. As a result, the interfaces between organizations and between functions within those organizations need to be buffered with inventory and/or time lags. The effect of this is that end-to-end pipeline times are long, responsiveness is low and total costs are high. To overcome these problems, Christopher(2011) argued that the supply chain needs to act as a synchronized network – not as a series of separate islands. Synchronization implies that each stage in the chain is connected to the other and that they all ‘march to the same drumbeat’. This, however, requires a high level of process alignment, which itself demands a higher level of collaborative working. The way in which entities in a supply chain become connected is through shared information and the information to be shared between supply chain partners includes demand data and forecasts, production schedules, new product launch details and bill of material changes.

Figure 1: Achieving synchronization through shared information: (a) before synchronization; (b) after synchronization



Source: Martin Christopher, 2011

These days, the nature of business enterprise is changing. Business is increasingly 'boundary less', meaning that internal functional barriers are being eroded in favor of horizontal process management and externally the separation between vendors, distributors, customers and the firm is gradually lessening. This is the idea of the *extended enterprise*, which is transforming our thinking on how organizations compete and how value chains might be reformulated (Christopher, 2011).

Christopher (2011) further explained that underpinning the concept of the extended enterprise is common information 'highway'. It is the use of shared information that enables cross-functional, horizontal management to become a reality. Even more importantly it is information shared between partners in the supply chain that makes

possible the responsive flow of product from one end of the pipeline to another. What has now come to be termed the virtual enterprise or supply chain is in effect a series of relationships between partners that is based upon the *value-added exchange of information*.

2.2 Competitiveness and the Strategic Role of SCM

The quest to discover the determinants of firm performance has long been central to the strategic management field. Many leading scholars have argued that building knowledge about why some firms outperform others is the cornerstone of the field (e.g., Hitt, Boyd, and Li, 2004; Rumelt, Schendel, and Teece, 1994; Summer et al., 1990). When rivals such as UPS and FedEx clash, it is not merely their individual capabilities, but rather the collective capabilities of their respective supply chains, which determine the outcome (G. Tomas M. Hult, David J. Ketchen Jr, and Mathias Arrfelt, 2007).

Similarly, other scholars and practitioners argue that a good supply chain design, planning, and operation have a strategic importance for every firm. A significant number of scholars also suggest and defend the notion that a good supply chain management can be a competitive advantage, whereas weaknesses in the supply chain can hurt the performance of a firm. These two ideas, showing the strategic role of SCM, will be discussed hereunder;

1. Competitiveness and Supply Chain Design, Planning and Operation Decisions

In today's era of globalization and development of efficient information and transportation technology, both customers and competitors are well informed and capable of choosing what to consume, where source is, where to locate facilities, what to perform and what to outsource etc. (Hill, 2009). If that is the case, how is success in business achieved then? Chopra and Meindl (2007) argued that there is a close connection between the design and management of supply chain flows (product, information, and funds) and the success of a supply chain. They mentioned Wal-Mart, Dell Computer, and Seven-Eleven Japan as examples of companies that have built their success on superior design, planning, and operation of their supply chain. In contrast,

they provided the failure of many e-businesses such as Webvan which can be attributed to weaknesses in their supply chain design and planning. Similarly, they mentioned Quaker Oats's acquisition of Snapple in 1994 was mentioned as an example of how the inability to design and manage supply chain flows effectively led to failure.

Successful SCM, however, requires many decisions relating to the flow of information, product, and funds. Each decision should be made to raise the supply chain surplus or supply chain profitability which is the difference between the revenue generated from the customer and the overall cost across the supply chain. These decisions fall into three categories or phases, depending on the frequency of each decision and the time frame during which a decision phase has an impact (Chopra and Meindl, 2007). These are;

- i. **Supply Chain Strategy or Design:** During this phase, given the marketing and pricing plans for a product, a company decides how to structure the supply chain over the next several years. It decides what the chain's configuration will be, how resources will be allocated, and what processes each stage will perform.
- ii. **Supply Chain Planning:** For decisions made during this phase, the time frame considered is a quarter to a year. Therefore, the supply chain's configuration determined in the strategic phase is fixed. This configuration establishes constraints within which planning must be done. The goal of planning is to maximize the supply chain surplus that can be generated over the planning horizon given the constraints established during the strategic or design phase.
- iii. **Supply Chain Operation:** The time horizon here is weekly or daily, and during this phase companies make decisions regarding individual customer orders. At the operational level, supply chain configuration is considered fixed and planning policies are already defined. The goal of supply chain operations is to handle incoming customer orders in the best possible manner.

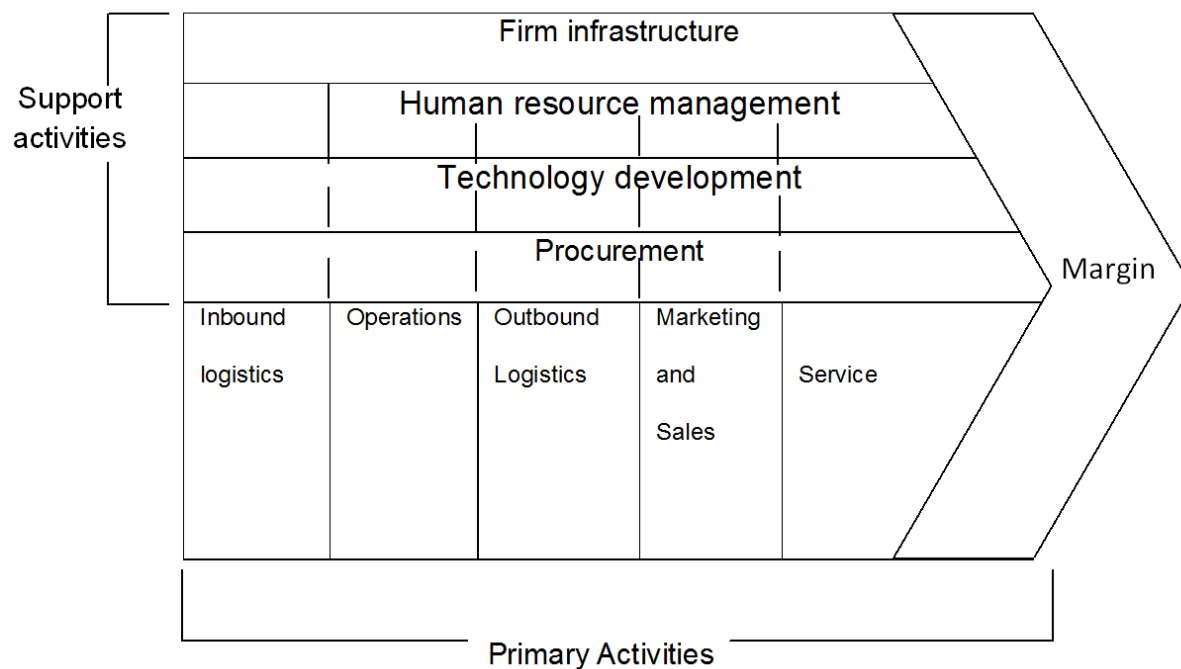
2. Competitive Strategies and Supply Chain Strategies

A company's competitive strategy defines, relative to its competitors, the set of customer needs that it seeks to satisfy through its products and services. Thus, a firm's competitive strategy will be defined based on its customers' priorities. Hence, it targets

one or more customer segments and aims to provide products and services that satisfy these customers' needs (Chopra and Mendil, 2007).

To see the relationship between competitive and supply chain strategies, starting with the value chain for a typical organization (as shown in Figure 2 below) can serve as a foundation.

Figure 2: Michael Porter's Value Chain in a Company



Source: Porter, M.E., (1985) as Adopted by Christopher (2011)

The value chain begins with new product development, which creates specifications for the product. Marketing and sales generate demand by publicizing the customer priorities that the products and services will satisfy. Marketing also brings customer input back to new product development. Using new product specifications, operations transforms inputs to outputs to create the product. Distribution either takes the product to the customer or brings the customer to the product. Service responds to customer requests during or after the sale. These are core processes or functions that must be performed for a successful sale. Finance, accounting, information technology, and

human resources support and facilitate the functioning of the value chain. To execute a company's competitive strategy, all these functions play a role, and each must develop its own strategy. Here, strategy refers to what each process or function will try to do particularly well (Chopra and Mendil, 2007).

Given that firms are rarely completely vertically integrated, it is important to recognize that the supply chain strategy defines not only what processes within the firm should do well but also what the role played by each supply chain entity is. Improvement in management of supply chain would result in lowering costs, short delivery time, low inventory level and improve reliability in which all improve the competitive position of the organization (Lee and Kwon, 2007).

The value chain in figure 2 above emphasizes the close relationship between the functional strategies within a company. Each function is crucial if a company is to satisfy customer needs profitably. Thus, the various functional strategies cannot be formulated in isolation. They are closely intertwined and must fit and support each other if a company is to succeed. As Chopra and Meindl (2007) stated, the critical point is that, for any company to be successful, its supply chain strategy and competitive strategy must fit together. That is both the competitive and supply chain strategies shall have aligned goals referring the consistency between the customer priorities that the competitive strategy hopes to satisfy and the supply chain capabilities that the supply chain strategy aims to build.

Any company that achieves this fit has a competitive edge and therefore, enhanced competitive position (Chopra & Meindl, 2004). The essence of SCM is that it is a strategic weapon to develop a sustainable competitive advantage by reducing investment without sacrificing customer satisfaction (Lee & Billington, 1992). Since each level of the supply chain focuses on a compatible set of objectives, redundant activities and duplicated efforts can be reduced. Besides, supply chain partners openly share information that facilitates their ability to jointly meet end-user's needs (Simatupang & Sridharan, 2002). Every industry can be described as a combination of one or more supply chains. Despite their vital role in industry, supply chains have been fragmented, resulting in slow and sequential material flow downstream and slow movement of data upstream. The disconnected flow of information and inventory has led to lack of real-

time information and build-up of excess inventory to buffer against uncertainties in supply and demand. Increased inventory carrying costs, longer lead times, and difficulty in responding positively to real-time changes decreases profits and weakens customer goodwill (Taylor, 1997). Frohlich and Westbrook (2001) have found that extensive and balanced integration leads to better performance in terms of marketplace, productivity, and non-productivity indicators compared to firms having narrow or biased integration with the suppliers or customers.

Effective supply chains provide opportunities to create a sustainable competitive advantage (Tracey, Lim, & Vonderembse, 2005). According to Handfield and Nicholas (1999), to stay competitive, business enterprises are responsible to manage a network of upstream firms (suppliers) that provide inputs and a network of downstream firms (customers) that deliver products and services. Serving the right customers, finding the right suppliers, and fostering trust with the right partners have a great impact on current as well as future business performances. Traditional organizational boundaries are a thing of the past. Business enterprises today focus on their Supply Chain Management (SCM) to improve product quality and lead time due to stiff competition from global markets and increased levels of customer's expectation (Simchi-Levi, Kaminsky, & Simchi-Levi, 2000; Tan, Lyman, & Wisner, 2002). SCM can play a proactive role in enhancing competitiveness and profitability (Tracey, Lim, & Vonderembse, 2005).

Christopher (1998) has stated that an effective SCM is a powerful tool to achieve competitive advantage for all parties in the supply chain. According to Tan (2001), the ultimate goal of SCM is to integrate various members of the supply chain in a seamless manner to achieve a high level of customer satisfaction, and thus a long term competitive advantage.

2.3 Effect of SCM Practices on Competitive Position

According to Fawcett and others (2007), Supply chain management involves a design of a seamless value adding processes across boundaries of an organization so that it will be able to meet real need of the customer. The design and implementation impose a lot of complex problems and challenges in the process of execution of supply chain management. These major problems must be first well identified in order to proactively

come up with problem solving mechanisms. Hence, Faucett & et al. (2007) have listed the supply chain design and management problems as:

- Poor coordination of effort
- Incompatible information systems
- Long cycle times
- Communication problems
- Customer service issues
- Excessive waste and environmental degradation
- Relatively high inventory for the level of customer service achieved
- Lower than optimal profits

Looking on how to handle such SCM challenges, resource-based theory has adequately explained the development of core competencies that can be used to handle these challenges and hence design better supply chain management practices (Barney, 1991; Hamel & Prahalad, 1994; Lim, Sharkey, & Heinrichs, 2006). These practices, in turn, improve the competitive position of a firm.

Tracey, Lim, and Vonderembse (2005) have empirically shown that there is a strong relationship between SCM capabilities of a firm and its business performance. Thus, there is a direct link between effective management of a supply chain and competitive position of firms in the supply chain. Competitive position of a firm results from the assessment of what the firm offers in comparison to its competitors (Gorynia, 2004). Competitive advantage is the extent to which an organization is able to create a defensible position over its competitors (McGinnis, 1999 and Porter, 1985). It comprises capabilities that allow an organization to differentiate itself from its competitors and is an outcome of critical management decisions (Tracey, Lim, and Vonderembse, 2005). The empirical literature has been quite consistent in identifying price/cost, quality, delivery, and flexibility as important competitive capabilities (Tracey, Lim, and Vonderembse, 2005; Roth A. and Miller J., 1990; and Skinner W., 1985). In addition, recent studies have included time-based competition as an important competitive priority. Research by Stalk (1988), Vesey (1991), Handfield and Pannesi (1995), Kessler and Chakrabarti (1996), Zhang (2001) identifies time as the next source of competitive advantage. On

the basis of prior literature, Koufteros et al. (1997) describe a research framework for competitive capabilities and define the following five dimensions: competitive pricing, premium pricing, value-to-customer quality, dependable delivery, and production innovation. Based on the above, the dimensions of the competitive advantage constructs used in this study are price/cost, quality, delivery dependability, product innovation, and time to market.

Quayle (2003) studied the SCM practices in United Kingdom (UK) among Small and Micro Enterprises (SMEs). He identified 18 different SCM practices such as supplier development, e-commerce, new technology, time-to-market, staff development, leadership, strategy, team working, and waste reduction that are essential to improve the competitive position of a company. Tan (1999) has considered more comprehensive SCM practices than the list used by Quayle (2003) such as collaboration, trust, ethical practices, continuous improvement efforts, and infrastructure drivers.

Hua (2002) has studied the impact of SCM practices on competitive position of the firm among SMEs in Malaysia. He has obtained data from 143 SMEs and has found that only 40 (28%) SMEs practice SCM in their organizations. According to Quayle (2003), this result is not surprising. Since the customer dominance in SMEs is high, the strategic focus is on cost and efficiency rather than collaboration, innovation and added value. The MNEs are different compared to SMEs in terms of size, capital investment, access to technology and systems and many other factors. Similarly, Sambasivan and Jacob (2008) used the SCM practices proposed by Tan (1999) to study the impact of supply chain practices on competitive position of MNEs in Malaysia. The results show that efforts in: (1) improving customer satisfaction, (2) selecting the right suppliers, (3) improving the efficiency of operations and (4) implementing the right quality practices have significant impact on the competitive position of the company.

Belay (2011) used four SCM practices i.e. suppliers' partnership, customer relationship, environmental issues and information communication to show their impact on the future competitiveness of cement firms in Ethiopia. The results show that the efforts that cement factories in Ethiopia exerted in implementing these SCM practices was very low which depleted their competitive position. Hailemickael (2011), identified five aspects of

SCM: supplier and customer relationship, internal operation, information sharing, information technology and supply chain performance to explore the extent to which selected Medium and Large Size Leather Footwear Manufacturing firms in Addis Ababa performs in those SCM variables and to compare the mean performance difference among firms in implementing those SCM variables. The result showed that, there was a significant performance difference of SCM among these Medium and Large Footwear firms. Mustefa (2014), has also identified five dimensions of SCM practice (strategic supplier partnership, customer relationship, level of information sharing, quality of information sharing, and internal lean practices) and tests the relationships between SCM practices, operational performance, and organizational performance by analyzing the data collected from 42 employees of a private firm. From the result of the analysis, he concluded that there is strong relationship between SCM practices, operational performance and organizational performance. Besides, SCM practices have an influence both on operational performance and organizational performance.

For this research, the SCM practices that are used as determinants of firms' competitiveness are broadly classified into four categories:

- The Internal-External Success Factors
- Buyers' Partnership
- Information Communication
- Customer relationships.

2.3.1 The Internal-External Success Factors

Harrison and Hoek (2008) argued that internal-external success factors are the drivers of SCM initiatives. External integration between partners in a supply network is an important destination. But internal integration is the essential precursor to external integration. They argued that core functional domains that form parts of the supply chain or impact supply chain performance need to align around priorities, opportunities and approaches. The fact that this is often not the case impedes supply chain efforts and might be what stands between 'great plan' and 'great success'. Put simply, if a company

cannot even speak with one voice, how can it align with other companies in the supply chain? (Harrison and Hoek, 2008).

For Cox and et al. (2003), there are two basic success factors for successful SCM strategies, both of which must be present in the buying company and in the supply organizations in the extended supply chain to be managed. These are: internal and external factors (Andrew Cox, Paul Ireland, Chris Lonsdale, Joe Sanderson and Glyn Watson; 2003):

a) Internal Success Factors

These factors are composed of two groups: Managerial Competence and understanding in the organization and Intra-organizational power and incentives.

❖ *Managerial Competence and Understanding in the Organization*

According to Andrew Cox & et al. (2003), deficiency in competency and understanding by actors in the organization (as listed in table 1 below) leads to problems in scope limitation in which strategic fit is considered for one operation within a functional area within a company. This is referred to as *intracompany intra-operation scope*.

Table 1: Actors Involved in the Organizational Sourcing Process and Their Respective Roles

Role	Influence on buying process	Functional examples
User	Initiates the buying process by recognizing a requirement; often involved in writing the specifications for specialist, technical products or services; may also be involved in supplier development activity	CEO; Strategy; Strategic Business Units; Finance; Marketing; R&D; Engineering; Production and Operations; HR; Legal; Environmental; Shared Services; Facilities and Estates; Logistics etc.
Influencer	Provides information and opinions used for evaluating alternative suppliers/products; reviews specifications	As above
Gatekeeper	Affects the search for information by distributing or screening marketing materials and supplier bids	Normally Procurement, SCM, Logistics; R&D; Engineering; Production and Operations
Approver	Authorizes the proposed expenditure	As above under User (if they are budget holder)
Buyer	Selects and develops suppliers; negotiates, manages and monitors contracts; monitors supplier performance	Normally Engineering; Production and Operations; Logistics; SCM; Procurement

Source: Adopted from Andrew Cox & et al., 2003

There are normally two broad categories of managerial competence and understanding that are crucial to the success of SCM strategies (Andrew Cox & et al., 2003). **The first is operational competence** which is an understanding by managers in the organization of the various tools and techniques that exist to support the implementation of SCM strategies. The most important of these tools and techniques are listed in Table 2 below;

Table 2: List of Key Tools and Techniques for SCM

Lean Thinking	Pareto Curve Approach
Agile Thinking	Surge and Base Approach
Critical Asset Thinking	The Supply Chain Response Matrix
Seven Principles of Muda	The Production Variety Funnel
JIT Production and Supply	Quality Filter Mapping
Big Picture Mapping	Demand Amplification Mapping
Value Stream Mapping	Decision Point Analysis
Vendor Managed Inventory	Physical Structure Mapping
Cycle Time Reduction	
Supplier Associations and Networks	

Source: Adopted from Andrew Cox & et al., 2003

The second main category of internal competence and understanding is **demand management competence** which means that each function involved in the buying process understands the need to configure the organization's demand in a way that makes it attractive to current and potential suppliers (Andrew Cox & et al., 2003). For Andrew Cox & et al. (2003), demand management is an important competence because the more attractive the buyer is perceived to be by its suppliers, the more willing those suppliers will be to invest in SCM initiatives. Table 3 highlights the potential demand management problems and their impact on customer attractiveness.

Table 3: Potential demand management problems

Demand management problem	Impact on customer attractiveness
Over-specification	Makes the buyer's requirements more difficult/costly to service, which may impact on the supplier's profitability (<i>nuisance or leverage customer</i>)
Unplanned changes in specification	May require the supplier to make costly last- minute alterations to the product/production process (<i>nuisance or leverage customer</i>)
Poor demand information	Makes it difficult for the supplier to pre-plan its production activities and may require the supplier to pay a premium for its supply inputs (<i>nuisance or leverage customer</i>)
Fragmentation of expenditure	Each separate transaction undertaken with a supplier will be of limited value, and multiple interactions will increase transaction costs (<i>nuisance customer</i>)
Maverick buying	Diminishes the volume/value of business awarded to approved suppliers (<i>nuisance or development customer</i>)

Source: Adopted from Andrew Cox & et al., 2003

❖ **Intra-Organizational Power and Incentives**

These internal factors deal with the idea that organizations are a political battleground. This is because individual functions within an organization have a tendency to pursue their own interests and objectives and to interpret the overall goals of the organization in light of those interests and objectives. It is the pursuit of these individual agendas by different functions that often causes the demand management problems discussed above (Andrew Cox and et al., 2003).

One of the key internal challenges facing anyone in trying to implement SCM initiatives is to persuade those functions causing these problems that they should change their behavior and support the initiative and hence *intracompany intra-functional scope* will be achieved. With the intracompany intra-functional scope, the strategic fit is expanded to include all operations within a function and the goal is to maximize company profit. To achieve this goal, all functional strategies are developed to support both each other and the competitive strategy (Chopra and Meindl, 2007).

b) External Success Factors

For Cox & et al, these key external factors are an exact mirror image of those discussed about the internal context: a high level of managerial competence and understanding in

the organizations in the supply chains to be managed; and, an appropriate alignment of inter-organizational power and incentives.

We can summarize these two factors by asking whether the organizations in the supply chain that you want to manage are both competent and congruent (Cox, 1999).

❖ ***Managerial Competence and Understanding in Supply Chain Organizations***

When managers ask questions about the competence of their suppliers, they are usually interested in whether they can deliver effectively on specified quality, cost and delivery (QCD) requirements. Indeed, it is these three factors, in combination with the financial stability of a supplier, that form the basis of the vast majority of supplier assessment and selection procedures (Cox and et al., 2003).

For Cox and others (2003), this definition of supplier competence is far too narrow if the aim is to select suppliers to be part of SCM initiatives. To achieve proper alignment with suppliers in SCM initiatives it is necessary to consider whether a supplier is also competent in the two spheres that we discussed earlier in the internal context.

Do suppliers have an operational understanding of the tools and techniques that underpin SCM, and do they understand how to manage their demand effectively so that their own suppliers view them as attractive customers? In short the buyer should be interested in whether a supplier is competent not only to meet QCD requirements but also to improve upon them through the deployment of SCM tools and techniques and the effective alignment of its own internal demand (Cox and et al., 2003).

❖ ***Inter-Organizational Power and Incentives***

Here, Cox & et al (2003) argued, when selecting suppliers to be part of SCM initiatives it is not enough to think solely about their competence. It is also necessary to understand whether a particular supply chain organization has an incentive to make the substantial investments that are needed to be part of such an initiative. These investments are of two basic types.

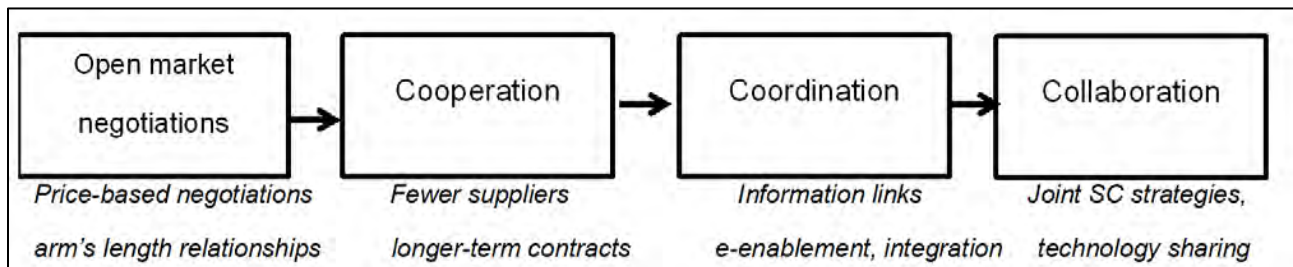
- ◆ The first type of investment relates to developing and improving the required operational and demand management competencies. The focus here is primarily on management education to promote knowledge and understanding of SCM tools and techniques and the commercial implications of poor buying behavior.

- ◆ The second type of investment relates to the organizational change process that might be necessary to make SCM initiatives effective. For example, a supply chain organization might be required to redesign its internal production process, alter its capacity planning/allocation, introduce new management information (ERP) system, or reorganize its in-bound and out-bound logistics to create a synergy with any SCM initiative. All these organizational innovations will carry a substantial cost in terms of managerial and financial resources.

2.3.2 Buyers' Partnership

We use the term 'strategic partner' to refer to a buyer partner with whom a focal firm has decided to develop a long-term, collaborative relationship. 'Collaboration' may be the ultimate objective of a number of phases through which a supply relationship may evolve (Harrison and van Hoek, 2008). A transition route from open market negotiation to collaboration is shown in Figure 3.

Figure 3: A Transition Route from Open Market Negotiation to Collaboration



Source: Alen Harrison and Remko van Hoek (2008)

According to Ni (2006, p. 277), viewing relationships as resources satisfies all four resource criteria in the resource-based view perspective, namely (Barney, 1991): value; rareness; uniqueness (inimitability); and non-substitutability. This evolution stream of the relationships paradigm expanded the initial resource-based view theory of the firm by Penrose (1959/1995) – where human resources were considered as organizational resources – into a wider focus on intangible resources and dynamic capabilities (Carpenter, Sanders & Gregersen, 2001) as sources of strategic competitive advantage (Dyer & Singh, 1998).

Intangible resources have become especially important in real-life market settings (as opposed to neoclassical market settings), with heterogeneous demand across and within industries, the existence of information asymmetries, and heterogeneous and not perfectly mobile resources (Hunt & Morgan, 1995, p. 3). Such settings seem to be especially typical across national markets, and are thus especially applicable to Trans National Companies (TNCs) (Porter, 1986). If today's economy is really a network economy (Barabasi, 2003), and most of the competition takes place across network-embedded companies (Dyer & Singh, 1998) and their corresponding networks, then relationships can be viewed as key resources (Morgan & Hunt, 1994; Johnson & Selnes, 2004), and their management is thus a key source of competitive advantage leading to a favorable market position and financial performance (Morgan & Hunt, 1994).

Within a supply chain perspective, and particularly related to buyer-supplier relationships, Hunt & Davis (2008) have called for the employment of the resource-advantage theory perspective in better understanding the competitive advantage-building nature of buyer-supplier relationships and their management. Building on Hunt & Davis' (2008) work, relationships should not simply be viewed as a crucial organizational resource – which act as a conduit to other resources (Hunt & Davis, 2012) – but as drivers of sustainable competitive advantages through facilitating the flexibility of embeddedness and disembeddedness, which Heidenreich (2012) describes as a key TNC competitive advantage building capability.

2.3.3 Customer Relationships

In terms of customers, efforts in improving customer satisfaction and service (both up-stream with suppliers and down-stream with product and service buyers or users) are at the center of the agenda. A customer is a strategic element in a company's downstream supply chain (Xu & Walton, 2005). For Noble (1997), customer relationship management is an important component of SCM practices. As pointed out by Day (2000), devoted relationships are the most sustainable advantage because of their essential barriers to competition. Focusing and maintaining the customer relationship

will enable the organizations to be more responsive towards customers' needs and will result creating greater customer loyalty, repeat purchase and willing to pay premium prices for high quality product (Carr and Pearson, 1999). The significance of relationships with customers and their impact on the performance and competitive position of a company are well established (Lummus, Duclos, & Vokurka, 2003; Power, 2005; Spekman, Kamauff, & Myhr, 2002). Companies have restructured and reengineered to increase organizational effectiveness in satisfying customers. To achieve excellence, managers need to look beyond the organizational boundaries and develop strong relationships with customers to create value (Fawcett & Magnan, 2002). Many organizations have started to realize that enhanced relationships with customers can lead to customer loyalty and retention, higher profitability, and enhanced competitive position of the company. Information Technology and Information Systems play a key role in fostering such relationships. There are many DSS, IS, ERP systems with data mining capabilities available to collect and analyze customer information (Ngai, 2005). Types of customers and behavior patterns of the customers have immediate effect on the operations of the company. The customers have to be segmented to identify strategically important customers and efforts must be made to develop strong relationships with them (Xu & Walton, 2005).

2.3.4 Information Communication

Information technology enables the rapid sharing of demand and supply data at increasing levels of detail and sophistication. The aim is to integrate such demand and supply data so that an increasingly accurate picture is obtained about the nature of business processes, markets and end-customers. Such integration provides increasing competitive position in a supply chain (Harrison and van Hoek, 2008). Supply chain management could be mentioned as a co-ordination of materials, information and financial flows along supply chain to satisfy the ultimate need of the customers (Stadtler, 2005). These days information is not only a resource, but it is a main resource of securing a competitive advantage in coordinating within and across organizations activities.

Bowersox, Closs and Cooper (2002), identified four reasons in which the importance of timely and accurate information are becoming important in this contemporary supply chain management era.

- Order status, inventory availability, delivery schedules, shipment tracking and invoices information are required by managers in timely manner to secure an outstanding level of customer satisfaction.
- In the case of uncertainty, information is becoming a substitute for inventory and other resources, where effectively applied it would enable to reduce costs immensely
- Enables to get a competitive advantage, as it increases the firm's flexibility in the utilization of its resources.
- The supply chain relationship among members is changing from adversarial to partnership as it is simplified and used via a based information sharing

2.4 Overview of the Sesame Seed Industry

2.4.1 Origin and Uses of Sesame

Sesame is a flowering plant in the genus *Sesamum*. Numerous wild relatives occur in Africa and a smaller number in India. It is widely naturalized in tropical regions around the world and is cultivated for its edible seeds, which grow in pods. Sesame has one of the highest oil contents of any seed. With a rich nutty flavor, it is a common ingredient in cuisines across the world (N M. Nayar and K. L. Mehra, 1970).

When talking about sesame origin, it would be appropriate to begin by referring to Anderson's opinion that "evolution under domestication is a process rather than an event, a process whose important early stages are still matters of experiment." In fact, evolution of any kind is a process and not an event. But there are many difficulties in tracing the course of these processes in this group because of the meager experimental studies in this genus and family (N M. Nayar and K. L. Mehra, 1970).

Sesame has even been suggested as the oldest cultivated oil crop De Candolle(1886) suggested that India might have received sesame from Malayan and Indonesian

regions during pre-Aryan times-that is, before about 1500 BC. He admitted its ancient cultivation in the Euphrates Valley because of the usage there of the Sanskrit name "tila." He felt that the Arabic name "semsen" or "simsin," from which "sesame" or Sesamum were derived, is of semitic origin, belonging to the post-Christian era, and believed that the semitics, who received sesame from Babylonia, introduced it into Egypt after the epoch of the great monuments and exodus.

Vavilov (1926) considered that sesame had a polytopic origin. He thought of India (consisting of the North Indian plain and Burma) and Abyssinia (including Somalia and Eritrea) as the basic centers of origin, with Central Asia (West Pakistan, Afganistan, Tadjikistan and Uzbekistan) as yet another center. He also proposed China as a secondary center of origin for a special endemic group of dwarf varieties.

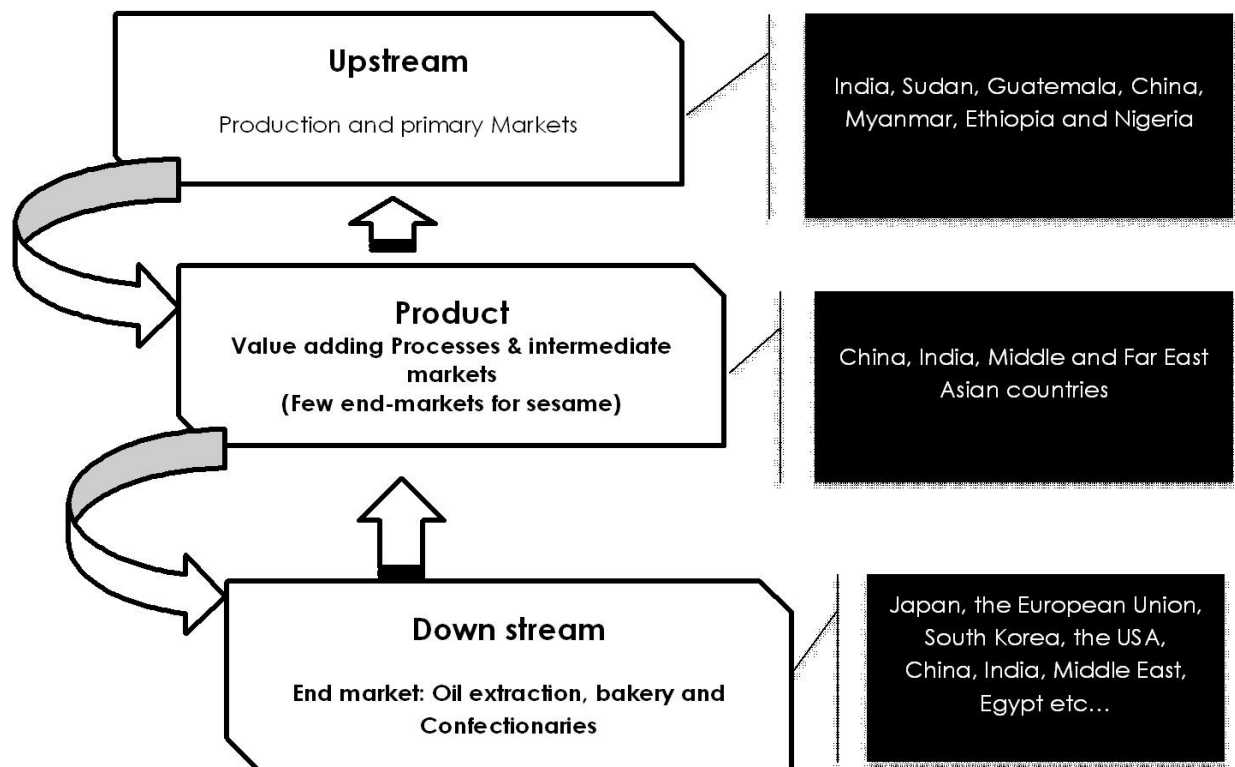
Sesame oil and seed are put to a great variety of uses. Besides being a source of oil, the seed is used in confectionery and as a topping for bread and rolls. Both whole seed and meal are used for these purposes. In Africa, it is used in porridge and in making soup and confectionery. In India the seed has also been used since ancient times in many Hindu rites and ceremonies. The oil is employed mostly for cooking purposes. Other uses of the oil are for anointing, making soap, and preparing antioxidants, insecticides, and medicines. The soot obtained on burning the oil is said to constitute one of the ingredients of Chinese ink in India. The chief uses of its products are as an emollient, nutrient, substitute for olive oil and, in pharmacy, as a vehicle for various substances to be injected into the body. The cake is used as cattle feed and as manure (Nayar and Mehra, 1970).

2.4.2 International Sesame Industry

Having intrinsic characteristics and unique uses, sesame is one of the most wanted oil crops in the world. Over the last two decades, the quantity of sesame traded on the world market has more than doubled. Among the major buyers in the sesame industry, as indicated in figure 4 below, Japan, the European Union, South Korea, the USA and Egypt were largest importers, while India, Sudan, Guatemala, China, Myanmar, Ethiopia

and Nigeria were major suppliers to the world market (Comtrade database, United Nations Statistics Division website). In 1997, the total world import of sesame was estimated at 462,000 Metric ton (Comtrade database, United Nations Statistics Division website). Currently, global production of sesame stands at 4.4 million tons, with a projected growth value of between 5 and 10 percent yearly (Zvi Peleg, 2015). The supply from some producing countries, such as China, has been in relative decline over the past few years, despite a general increase in demand for the crop. The main reason for this decline is attributable to the fact that other more remunerative crops compete with sesame for the limited amount of agricultural land and the shortage of labor.

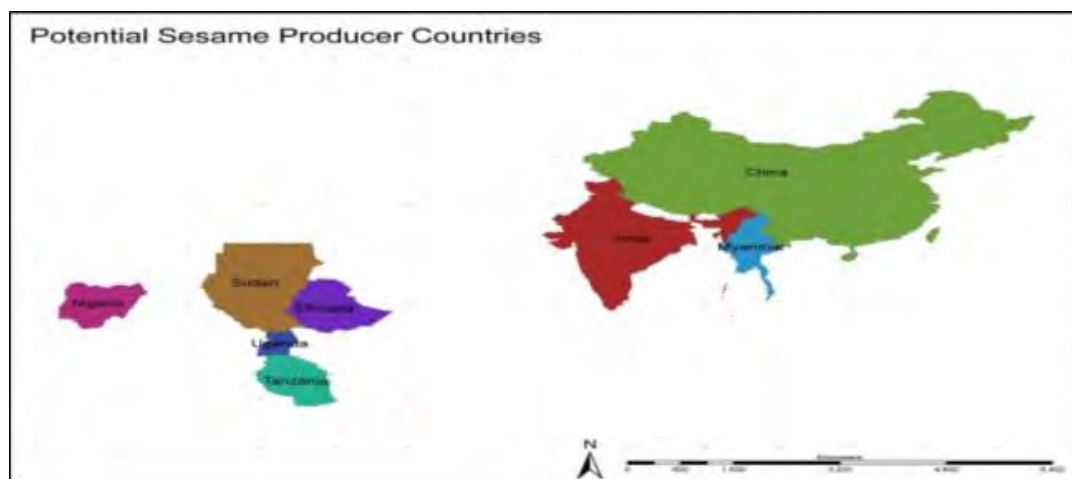
Figure 4: Generic Sesame Industry Chain Structure



Source: Researcher's design based on reading, 2016

The regional overview for the Sesame Industry is indicated in the following figure with a special emphasis on production at the upstream of the supply chain.

Figure 5: Regional Overview of Sesame Production



Source: Comtrade website, 2015

Having an insight in to the middle and end-market of sesame supply chain world-wide, China is a major importer of sesame seed importing near to 600,000 tons for the year 2014 (UN Comtrade, 2015). China used to be a major exporter of sesame, but the tedious harvesting process, mostly done by hand, discouraged many farmers there from cultivating the crop. Numerous farms have now switched to growing more profitable vegetables. The reduction in domestic yield, along with rising domestic demand for sesame oil, has pushed up sesame imports, making it the world's largest sesame importer (<http://asia.nikkei.com/Markets/Commodities/Sesame-prices-near-six-year-global-high>, accessed January 15, 2016).

Table 4: Top 10 World Importers of Sesame Seed for the Year 2014.

Importing country	Volume in ton	Sum of Trade Value (US\$)
China	568,791	1,148,087,278
Japan	168,223	382,495,708
Turkey	110,923	219,942,607
Rep. of Korea	83,943	205,257,885
Israel	54,062	131,202,000
India	53,412	106,167,832
Greece	33,424	79,063,365
USA	33,262	101,269,854
Germany	33,159	90,094,573
Jordan	26,491	61,741,866

Source: UN Comtrade Database, 2015

In the world sesame export market (table 5 below), African nations control the chart next to India. For the year 2014, of the total export of 1.4 million tons, India ranked first at an export volume of over 372,000 tons followed by Ethiopia with nearly 304,000 tons. Nigeria, Tanzania, Burkina Faso and Uganda controlled the rank being followed by China (UN Comtrade, 2015).

Table 5: World Exporters of Sesame Seed for the Year 2014.

Exporting Country	Volume in ton	Sum of Trade Value (US\$)
India	372,432	813,601,513
Ethiopia	303,755	714,545,764
Nigeria	235,556	553,561,191
United Rep. of Tanzania	116,877	324,414,519
Burkina Faso	94,714	131,838,092
Uganda	39,833	55,165,179
China	34,518	97,584,787
Paraguay	33,376	78,608,002
Pakistan	33,348	65,401,723
Mozambique	33,084	40,453,920
Others	143,816	322,094,138
Total	1,441,309	3,197,268,828

Source: UN Comtrade Database, 2015

When we assess sesame's high end markets of Europe and America, it represents a small portion of the total market. For instance, as indicated in the table 6 below, for the year 2014, a total of 208, 068 tons was transacted which amounts to nearly 15% of the world trade for the same year. On the other hand, China assumed the lion's share of the market with close to 40% followed by Japan (12%) and Turkey (8%).

Table 6: European Sesame Import for the Year, 2014.

Sesame importer	Volume in ton	Sum of Trade Value (US\$)	Average price per ton
Greece	33,424.02	79,063,365.00	2,365.47
USA	33,261.51	101,269,854.00	3,044.66
Germany	33,159.27	90,094,573.00	2,717.03
Netherlands	22,184.87	55,302,215.00	2,492.79
Poland	10,932.04	28,002,029.00	2,561.46
France	10,007.31	30,135,112.00	3,011.31
Spain	9,538.21	25,583,820.00	2,682.25
United Kingdom	7,491.68	23,440,121.00	3,128.82
Canada	7,334.65	21,931,485.00	2,990.12
Italy	7,244.24	19,090,180.00	2,635.22
Australia	6,863.28	18,805,209.00	2,739.98
Austria	4,165.91	11,944,728.00	2,867.25
Belgium	3,756.61	10,451,707.00	2,782.22
Ukraine	3,040.52	7,154,634.00	2,353.10
Romania	2,741.78	7,684,228.00	2,802.64
Denmark	2,334.54	6,864,494.00	2,940.40
Norway	1,912.59	5,829,876.00	3,048.15
Serbia	1,880.69	5,066,225.00	2,693.81
Cyprus	1,839.81	4,785,760.00	2,601.23
TFYR of Macedonia	1,830.11	4,848,804.00	2,649.46
Sweden	1,777.53	5,758,456.00	3,239.59
Switzerland	1,346.55	4,397,513.00	3,265.76
Total	208,068	567,504,388.00	2,728.00

Source: UN Comtrade Database, 2015

2.4.3 Ethiopian Sesame Industry

Ethiopia has a large number of different sesame varieties, including the Whitish Humera/Gonder, Mixed Humera/Gonder, Whitish Wollega, Mixed Wollega, Reddish, and Mixed Reddish Sesame Seed varieties which are well known in the international market (ECX Sesame Contracts, 2010).

The country's main sesame production areas are located in the semi-arid lowlands of North-West Ethiopia that included mainly Humera, Tsegede and Wolkayit in Tigray and Metema, Quara and Tach Armachiho in Amhara Regional State. These production zones account for more than 70% of the national production (Abera, 2009). Humera and Gondar type sesame seeds are mainly suitable for bakery and confectionary purposes, while Wollega type sesame seed has a major competitive advantage for edible oil production because of its high oil content.

Ethiopia has been significantly increasing its supply to world markets: from 1998 to 2014, the total quantity exported annually increased from 50,000 tons to more than 300,000 tons, which is a six fold rise in a little more than a decade's time (Comtrade database, United Nations Statistics Division website). The main importers of Ethiopian sesame are China – which is also a major sesame exporter – Israel, Turkey and some European countries. In the long term, there is high potential for increasing the Ethiopian export of sesame to the high valued end markets of Europe and USA. Europe is a major user of sesame seed for bakery applications and confectioneries as highlighted in the industry chain structure.

Currently, the main destination for Ethiopian sesame export is China and some Middle Eastern countries like Israel, Turkey and Jordan etc. As highlighted in table 7, during the fiscal year 2014, more than 60% of Ethiopian sesame was exported to the low paying market of China. Unlike this, less than 5% was exported to the high value end markets of South Korea, Japan and Europe where the price for sesame is more than 10% higher than that of China and the middle-east.

Table 7: Ethiopia's Sesame Export for the Year, 2014.

Export Destination	Volume in ton	Sum of Trade Value (in USD)	Average Price per ton in USD	Market Share	
				Volume	Value
China	191,704	446,982,113	2,332	63.11%	62.55%
Israel	52,117	122,456,399	2,350	17.16%	17.14%
Turkey	16,123	38,630,599	2,396	5.31%	5.41%
Jordan	8,959	21,226,863	2,369	2.95%	2.97%
Saudi Arabia	6,665	15,660,586	2,350	2.19%	2.19%
Rep. of Korea	4,655	11,637,859	2,500	1.53%	1.63%
Greece	4,028	9,703,621	2,409	1.33%	1.36%
Japan	3,508	8,862,638	2,526	1.15%	1.24%
Egypt	2,843	7,091,603	2,494	0.94%	0.99%
Yemen	2,142	4,590,199	2,143	0.71%	0.64%
Others	11,010	27,703,283	2,516	3.62%	3.88%
Total	303,754	714,545,763	2,352	100%	100%

Source: UN Comtrade Database, 2015

Unlike Ethiopia, table 8 and 9 indicate that the destination for Indian and Chinese sesame export is the high-value end markets of Japan, Korea, USA, Europe, and some other Asian countries where better prices are offered for sesame. Here, it is important to note that these markets require cleaned sesame (up to 99-99.53%) in addition to non-adulteration of seeds of different varieties.

Table 8: China's Sesame Export for the Year, 2014.

Export Destination	Volume in ton	Sum of Trade Value in USD	Average Price	Market Share	
				Volume	Value
Rep. of Korea	32,436	90,743,248	2,798	93.97%	92.99%
Japan	1,321	4,279,855	3,240	3.83%	4.39%
Australia	196	664,189	3,388	0.57%	0.68%
Singapore	110	410,999	3,740	0.32%	0.42%
China, Hong Kong SAR	97	328,555	3,401	0.28%	0.34%
USA	60	179,173	2,984	0.17%	0.18%
United Kingdom	51	158,361	3,121	0.15%	0.16%
Malaysia	44	143,916	3,268	0.13%	0.15%
New Zealand	36	117,383	3,261	0.10%	0.12%
Netherlands	37	115,508	3,116	0.11%	0.12%
Others	130	443,600	3,412	0.38%	0.45%
Total	34,518	97,584,787	2,827	100.00%	100.00%

Source: UN Comtrade Database, 2015

Table 9: India's Sesame Export for the Year, 2014.

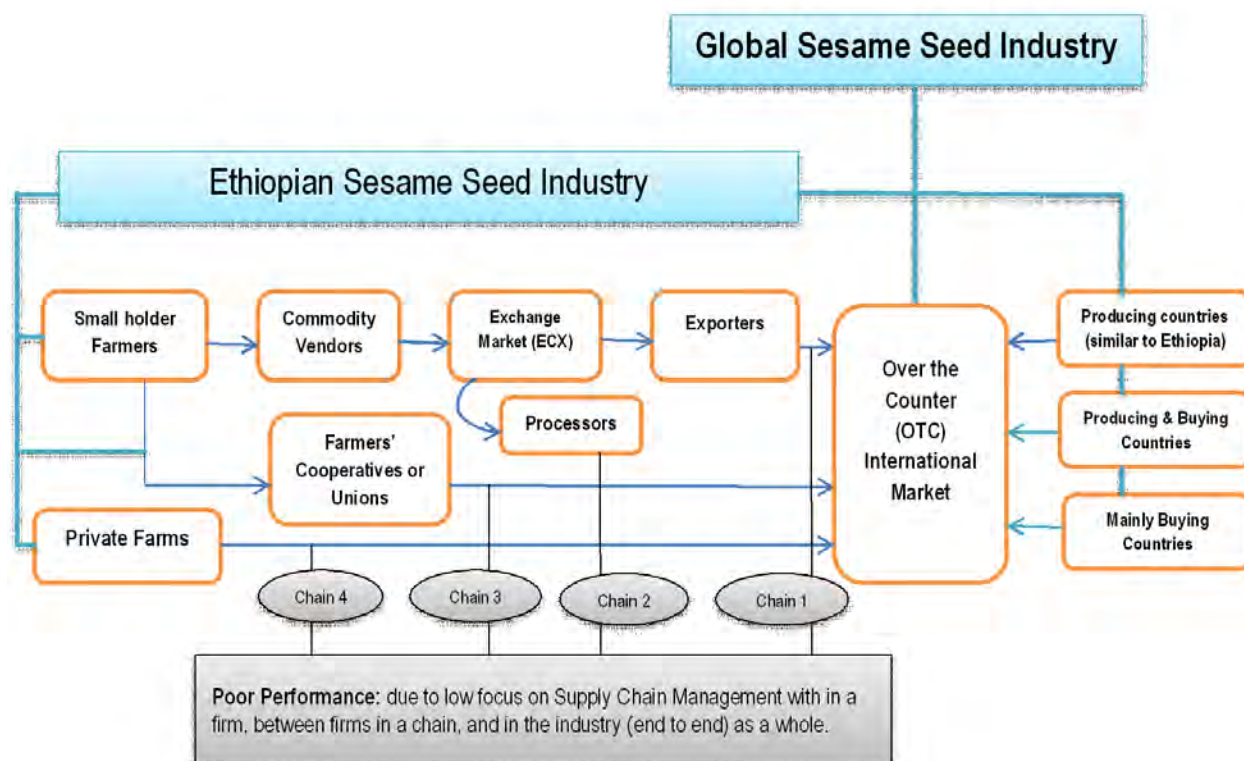
Export Destination	Volume in ton	Sum of Trade Value in USD	Average Price	Market Share	
				Volume	Value
Viet Nam	55,591	105,820,556	1,904	14.93%	13.01%
Rep. of Korea	39,863	82,244,727	2,063	10.70%	10.11%
China	36,716	64,031,612	1,744	9.86%	7.87%
USA	18,868	50,269,546	2,664	5.07%	6.18%
Other Asian nations	25,343	42,032,251	1,659	6.80%	5.17%
Germany	12,718	32,573,747	2,561	3.41%	4.00%
Turkey	14,482	30,641,495	2,116	3.89%	3.77%
Netherlands	11,255	27,671,992	2,459	3.02%	3.40%
Iran	11,083	27,521,038	2,483	2.98%	3.38%
Greece	10,261	25,342,271	2,470	2.76%	3.11%
Russian Federation	8,914	23,438,821	2,629	2.39%	2.88%
Others	127,338	302,013,463	2,372	34.19%	37.12%
Total	372,432	813,601,519	2,185	100.00%	100.00%

Source: UN Comtrade Database, 2015

2.4.3.1 Sesame Seed Value Chain Map

Getting sesame from producer to end (global) buyer in Ethiopia involves a range of players. The scheme in figure 6 below provides a general overview and an idea of the Ethiopian value chain for sesame. Farmers sell their produce to the primary market (also called spot market), where all the sesame is bulked. Sometimes there are traders in between the farmer and the primary market, although this is an illegal practice.

Figure 6: Sesame SC in Ethiopia



Source: Researcher's Analysis, 2016

In almost each Kebele (smallest administrative zone in Ethiopia), a primary market has been allocated where legal trade may take place. From the primary market, the sesame goes to the Ethiopian Commodity Exchange (ECX), where the sesame is graded into different quality groups (1-5). From the ECX, the graded sesame goes to the export traders, who sell it to the international buyers over the counter (OTC).

Although ECX provides producers market price transparency, there are various problems on selling through the ECX (Fenta Mandefro, Sarah Drost, Jeroen van Wijk, 2011):

- ◆ No differentiation is made between various sub-regional sesame varieties. Varieties that are recognized as Humera type sesame seeds are acknowledged at the ECX when they are produced in certain districts. Once the Humera type varieties are produced outside these districts, then the seed may be reckoned as Wellega type (for example). This can also happen the other way around. Wellega type seeds

produced in areas that are considered to be delivering Humera type seeds, will eventually be traded and exported as Humera type seeds;

- ◆ No differentiation is made between organic and non-organic sesame; and
- ◆ The grading system of the sesame at the ECX is not fully transparent

Another value chain in figure 6 above goes via the primary cooperatives. In this case, farmers are organized in a primary cooperative to which they sell their produce. The cooperative consequently sells via ECX, which means no differentiation will be made for sesame type. The cooperative can also sell to the Union, which can directly sell to the international market.

Major farmers' co-operative unions effectively operating in the sesame supply chain of Ethiopia are indicated in table 10.

Table 10: Farmers' Co-Operative Unions in Different Parts of Ethiopia.

No	Name of Cooperatives	Commodity	Regional Distribution
1	Damot FCU	Sesame	Amhara
2	Tigray Multi-Purpose Marketing Federation LTD	Sesame	Tigray
3	Gozamen FCU	Sesame	Amhara
4	Metema FCU	Sesame	Amhara
5	Assosa Geberewoch FCU	Sesame	Benishangul Gumuz
6	Admas Hulegeb FCU	Sesame	Amhara
7	Setit Humera FCU	Sesame	Tigray
8	Dansha Awrora FCU	Sesame	Tigray
9	Kafta Humera FCU	Sesame	Tigray
10	Tsehay FCU	Sesame	Amhara
11	Lemlem Wolkayet FCU	Sesame	Tigray
12	Merkeb FCU	Sesame and Wheat	Amara
13	Gibe Dedesa FCU	Sesame and Maize	Oromia

Source: ECX, 2016.

According to the Oil Seeds and Pulses Opportunity Report (2015), a small number of investor farmers are also involved who avoid the whole chain and sell their produce directly to international buyers, either before or after processing. A few examples are;

- The Ethiopian-Dutch Joint Venture Selet Hulling undertakes an integrated investment (which includes production and processing like cleaning and hulling, after which their organic produce can be directly sold to the international market;

- Dipasa Agro PLC which hulls and roasts sesame for the export market;
- Ambasel Trading, which cleans hulls and roasts white sesame, produces sesame paste (tahini). They export to Middle Eastern, Asian and European markets (Ambaseltrading.com.et)
- The Ethiopian-Israeli Joint Venture Sheba Trading in Gondar, which makes food products from sesame. Their plant has a processing capacity of more than 250 tons sesame seeds annually and their major products are Tahini, Halva, and hulled sesame seed

2.4.3.2 Trade & Logistics in Ethiopia's Sesame Industry

Ethiopia has the potential to be a new origin for sesame seed. The national transport grid is improving year by year and the new railway to Djibouti opens up new avenues for transport. More railway lines are on the way and quality road infrastructure is increasing rapidly, including an already finished highway between Addis Ababa and Adama. Easier and less time-consuming transport will soon be available.

Intermediaries (middlemen, collectors, traders, wholesalers and retailers) are active between producers and consumers. The time aspect refers to the inventory and sourcing functions. Due to seasonality of agricultural production patterns and uneven seasonal demand pattern for sesame, storing products bridges the time between harvest and consumption. Trucks mainly do transport of oilseeds like sesame from the producing areas to nearby ECX warehouses then to the port of export, mostly Djibouti and Port of Sudan. Most of the exporting companies have well-maintained or new IVECO trucks. The distance between the sesame production regions and Djibouti is about 1,500km: for instance, the distance from Bahir Dar in the Amhara region to Addis is 560 km and from Addis Ababa to Djibouti 900 km. Although road density is very low in Ethiopia, most of the main roads are in good condition. Transport costs to Djibouti port are indicated at 50 USD per ton. Moreover, distributors are bulk breakers and varieties assemblers: providing retailers or consumers with small quantities of a large number of products. Intermediaries provide services in the marketing channel that enables producers to focus and to specialize. In addition, the above-mentioned functions

(collecting, storing, logistics, bulk breaking, assortment assembling) they perform also functions for instance like quality control, financing stock, price negotiation, invoicing or matching supply and demand (J.H.M. Wijnands, J. Biersteker and E.N. van Loo, 2009).

According to J.H.M. Wijnands & et al (2009), freight and logistics costs in the sesame industry within the boundaries of Ethiopia are the following;

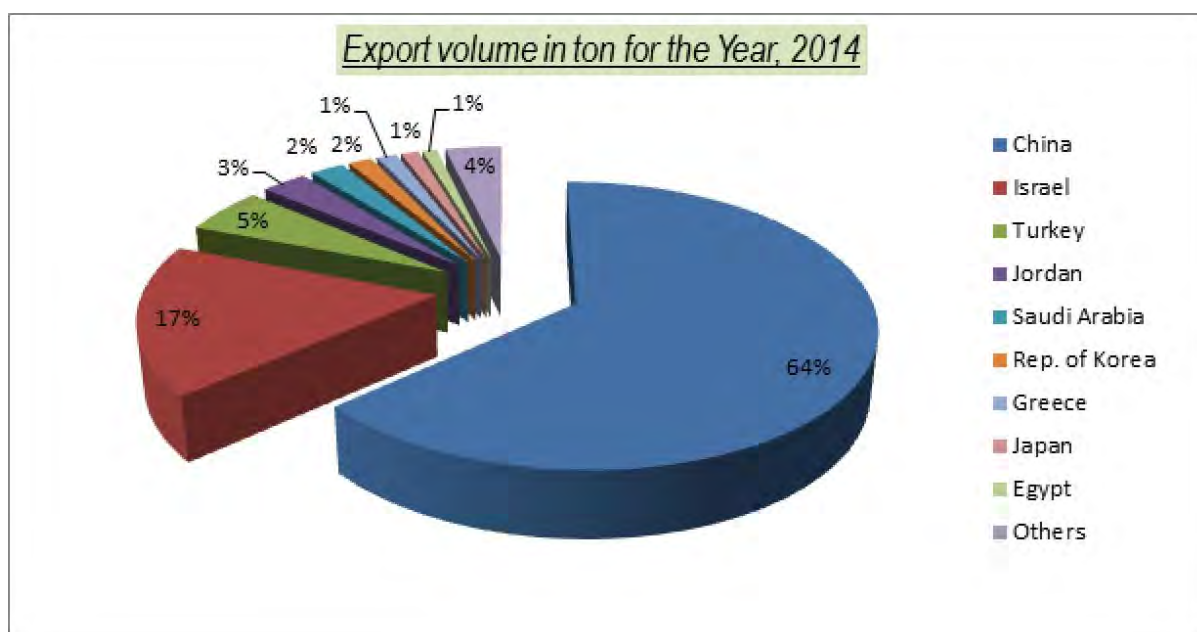
1. The collector's cost of sesame seed amount to ETB56/100 kg and is around 10 per cent of the producer's value.
2. The collector's and export trader's gross margins (rent for own labor and capital) are 2-3 per cent, the rest are direct costs,
3. The exporters' cost without logistics are between ETB38 and 56/100kg.
4. Logistic costs are around ETB 0.05/10kg/km

2.4.3.3 Export Market

Ethiopia exports almost all of its produce and is the second leading sesame-exporting country in the world. China is the number one importer of Ethiopian seeds as can be seen from the figure below. However, in smaller quantities, countries from all over the world import sesame seed from Ethiopia, including Israel, Vietnam, USA and Turkey.

In the past years, demand for sesame has been high, but incentives for quality production and value addition are weak. Global production has increased, and a price decline is intensified with increased competition and greater demand for quality. Most of the traders at ECX also argue that China takes large quantities, but it wants products as cheap as possible. Hence, they believe that sales of organic farming cannot be sustainable with China, as its focus is more on price than on quality (Sesame Business Network (SBN), 2014).

Figure 7: Export Destination of Ethiopian Sesame, 2014



Source: Researcher's calculation based on UN Comtrade Data, 2014

The fact that Ethiopian sesame is not getting the proper reward in the Chinese and Middle-Eastern countries can clearly be seen from the price graphs in the figure below. For the past five years (2010 to 2014), Ethiopia's natural sesame (with no value addition) was in most of the cases sold at far less than that of Indian and Sudanese sesame.

Figure 8: Sesame Price Comparison (November, 2010 to March 31, 2014)



Source: the Public Ledger, 2016

A number of reasons can be mentioned as the causes of Ethiopian sesame industry's low performance in terms of winning a competitive price in the global market, especially, when compared to its peers in the industry. The researcher believes that supply chain related challenges are mainly responsible for the incompetence and the possible challenges will be highlighted in the next section.

2.4.3.4 Constraints in the Ethiopian Sesame Industry

Despite the vast opportunities and a number of comparative advantages, the oilseeds sector in general and that of the sesame industry in particular has several constraints to its competitiveness in the international market. The constraints are related to production, processing and marketing issues. Oilseeds production is limited by several problems that are related to backward agricultural practices; lack of awareness, high costs and limited accessibility of inputs (particularly improved and variety seeds); lack of credit facilities; and uncertainty about economic returns. The fragmented landholding system is also a critical problem; there are a limited number of large commercial farmers (> 100 ha) whose share is less than two percent (Wijnands et al., 2007). These

problems are believed to exist at individual firm level, nationally at country level, and globally in the international market.

Post-harvest losses are one of the most pressing issues. Given that sesame farmers spend about four months of the year working in a grueling way, it is striking that they lose much of their sesame on the piling and threshing points. The losses do not stop there, but continue to occur in the multiple loading and unloading activities, in transporting to either to warehouses or home and then to market centers. Losses happen during storages due to pest damage, at marketing centers while taking samples for grading (buyers and sellers often pierce the sack to check the quality), during repacking and processing. Post-harvest losses across the sesame value chain may reach up to 30 per cent. One can imagine how much millions of US dollars have been lost due to mismanagement alone (SBN, 2014). Negash (2015) summarized a significant number of challenges inhibiting sesame production and productivity in Ethiopia;

- Lack of improved and high yielding varieties for different agro-ecologies with desirable agronomic qualities viz. non-shattering, diseases/pests resistance
- Poor seed supply system
- Lack of adequate knowledge of farming and post-harvest crop management
- Lack of high standard oil processing industries
- Low soil fertility and pH status
- Lack of varieties which respond to inorganic fertilizers
- Lack of companies working on specialty foods
- Lack of collaboration among breeding institutes and food industries
- Lack of direct linkage/contractual agreement and mistrust between producers and processors/exporters is a key constraint.

A general lack of regulatory standards has led to adulteration of different grades (standard qualities) of sesame that has affected both edible oil processing companies in the country and exporters competing in the international market. Apart from this, market information for sesame, mainly that of international market, is not widely available and infrastructure is generally weak in Ethiopia. The situation for the oilseeds sector, however, is critical due to the volatile and unpredictable price structures. The

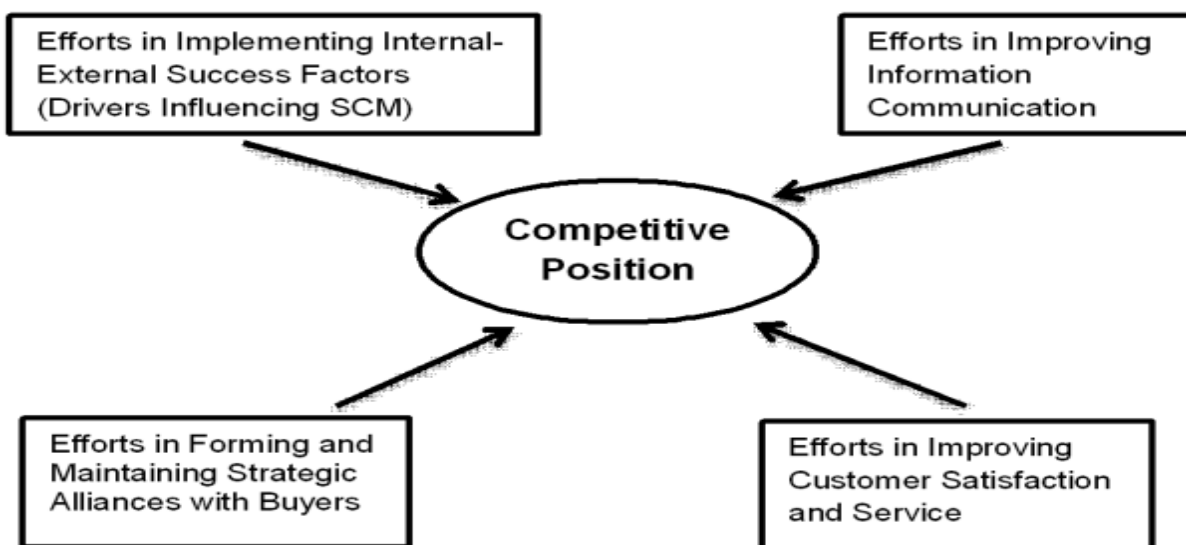
government's policy of duty and VAT free import of vegetable oil (palm oil) is also considered as a bottleneck for the development of local edible oil processing companies/millers (Fenta Mandefro & et al, 2011).

Even though it has been two decade since Ethiopian exporters have started to actively participate in the global sesame industry, no permanent and visible relationship has existed between Ethiopian exporters and foreign buyers in China or any other market. Rationally, this can be linked to Ethiopian Exporters' lack of current market know-how and principles mainly that of the global supply chains, both within their private businesses as well as in their relation globally. As an evidence for such argument, it is to be recalled that in the years 2006 – 2008, with 2008 as the most extreme case, the sesame price went up majorly in a short period of time. The sharp and fast price rise of Ethiopian sesame and increased interests from all parts of the world meant that Ethiopian suppliers could get much higher prices than initially prospected. However, importers from Europe already signed contracts with Ethiopian suppliers in an earlier stage, for a lower price. Certain Ethiopian suppliers chose to default on these contracts and sell their produce for a higher price to other markets like China. This situation has led to a decreased trust under many European importers, which is being rebuilt again slowly throughout the years. It is up to all Ethiopian suppliers to keep this trust now and adhere to already made agreements with their importers (Thijs Ruters and et al, 2015). Added to this evidence is that, except for bi-lateral relations at government level, no collaborations and long term arrangements are reported to happen between Ethiopian global suppliers and their counterparties abroad. It can be concluded, therefore, that relationships are merely transactional and usually one time. Added to this is lack of local investment in value-adding activities for the crop which can increase the benefits the country derives from sesame production, processing and marketing is also a major SC related reason for the low price of Ethiopian sesame in the international market. This is the first and most important investment that needs to be directed at cleaning and grading equipment, which will significantly contribute to achieving a level of purity of the crop that meets European Union standards. Subsequently, a gradual stepping up to higher levels of processing could increase the benefits derived from sesame. This may include the hulling of sesame, which is not currently practiced but easy to establish.

2.5 Conceptual Framework

Based on overall review of related literature and particularly the works of Tan (1999), Quayle (2003) and Sambasivan & Jacob (2008), the conceptual framework which governs this specific study is indicated in figure 9 below. It asserts that efforts in improving the four categories of SCM practices i.e. internal-external success factors, buyers' relationship, information communication and customers' relationship have a direct relation and impact on the competitive position of the case firms in this study. Regarding competitive position, the empirical literature has been quite consistent in identifying price/cost, quality, delivery, and flexibility as important competitive capabilities (Tracey, Lim, and Vonderembse, 2005; Roth A. and Miller J., 1990; and Skinner W., 1985). In addition, recent studies have included time-based competition as an important competitive priority. In this research, the measures used to capture the competitive position of firms are cost/price, product innovation, product quality, product differentiation and variety, and responsiveness to customers.

Figure 9: Research Framework



Source: adapted from Sambasivan & Jacob (2008)

CHAPTER THREE: RESEARCH METHODOLOGY

Research design is the structural skeleton that provides the overall structures for the procedures that a researcher follow, the data that the researcher collects and the data analysis the researcher conducts (Leedy and Ormarod, 2010). Accordingly, for this study, the researcher's choice of research approach, data type and source of data, sampling and sampling techniques, and method of data analysis are presented in the sections that follow.

3.1 Research Approach

With the intent of generalizing from a sample to a population, the researcher applied a quantitative method which followed a cross-sectional survey to assess the relationship between SCM practices and competitive position of Sesame Exporter Members of ECX. The independent and dependent variables were collected simultaneously using questionnaire. The study is associational in design because of the intent to establish the relationship between the dependent and independent variables. Hence, after the data were collected, the researcher analyzed it using Kendall's Tau test to look in to correlation. Apart from this, one-way ANOVA was conducted to ascertain the correlation coefficient that results from the Kendall's Tau statistical test occurred not by chance, but by probability.

3.2 Data Type and Source of Data

In any research, data addresses three issues; the topic of interest, the respondents and the responses of respondents in relation to the topic of interest (Diamantopoulos & Schlegelmilch, 2000).

In this study, the research data was collected from different sources using various data collection tools. The research utilized both primary and secondary data collection approaches. In this practical case the researcher applies a written questionnaire and as well as face-to-face briefings with industry experts. In order to quantify and evaluate data, a rating scale technique what is known as Likert Scales is used for the collection of data (Leedy and Ormarod, 2010).

Secondary data were collected through desk research to clarify most of the issues. Books, web sites of international institutions like UN, FAO, the World Bank, journals, and previous research papers were utilized to carry out the study.

3.3 Data Gathering Technique and Instruments

The primary data was gathered particularly using survey questionnaire. The researcher distributed the questionnaire to sampled respondents. For the purpose of this study a quantitative methodology involving a close-ended questionnaire was used as the measuring instrument. The questionnaire was developed based on the survey instrument proposed and used by Basnet, Corner, and Tan (1999), Tan (1999), and Wisner and Tan (2000). The survey instrument focused on a number of factors related to SCM practices, like issues of internal and external success factors, information flow among supply chain members, strategic relationship with buyers, and issues of customer satisfaction and service. The respondents were expected to fill the responses to various items using a 5-point Likert scale. The Likert-type scale method used a range of responses: 'Poor', 'Satisfactory', 'Undecided', 'Good', and 'Excellent', with a numeric value of 1-5, respectively. The usage of this particular scaling method ensured that the research study illustrated the ability to assess the responses and measure the responses quantifiably so that a pattern or trend may be produced in order to assess research hypotheses. As Neuman (2003) hypothesize, it is a process of asking many people the same questions and examining their answers.

3.4 Sampling and Sampling Techniques

As per ECX's membership data base (2015), the Exchange has a total of 347 members trading different commodities at its floor. Out of these members, ninety (90) are involved in sesame seed export business. Accordingly, the size of the total population for this study is the ninety (90) sesame seed exporters. All of these exporters have at least a liaison office in Addis Ababa, where the exchange market is located.

Considering their small number and regardless of their level of engagement in the export business and hence with the Exchange, all of them are considered for the

study. Therefore, the target sample size of the study is ninety (90) sesame seed exporter members of ECX. As the researcher attempts to analyze the SCM challenges that face sesame exporters and their impact on the competitive position, all participants are considered and asked questions about SCM issues within their business firm and across the extended supply chain. The target respondents were middle/senior management staff familiar with the corporate strategies and supply chain operations of their companies. The sampling unit was a company (exporter firm).

3.5 Method of Data Analysis

After collecting and sorting the relevant data using data collection tools, quantitative responses are sorted, coded, and computed using the Statistical Package for Social Sciences (SPSS), version 20. The appropriate statistical analyses such as descriptive analysis and inferential statistics like correlations and one-way ANOVA were conducted according to respective objectives. The analyzed data is presented using tables, graphs and pie-charts.

Kendall's tau correlation is used to show the relationship and the degree of strength as well as direction of associations between variables. In addition to this, one-way ANOVA is conducted to ascertain that the correlation coefficient that results from the Kendall's Tau statistical test occurred not by chance, but by probability.

3.6 Reliability and Validity

Reliability refers to the extent to which the instrument measures what is intended to measure and validity refers to the consistency with which a measuring instrument yields a certain result when the entity being measured hasn't changed (Leedy & Ormrod, 2010). The questionnaires for this research were pre-tested on 15 (fifteen) respondents before distributing for the whole sample and checked for their reliability using Cronbach's alpha coefficient and for validity through subject matter expert review.

The reliability values for all constructs are confirmed as greater than 0.7 which are considered acceptable as indicated in table 11 below.

Table 11: Reliability of SCM Practices and Competitive Position

Variable	Number of Constructs with in each Variable	Reliability for Each Category
SCM Practices		
Internal-External Success Factors	8	0.913
Buyers' partnership	8	0.910
Customers relationship	7	0.910
Information communication	8	0.911
Competitive position	6	0.912
Total Number of Items	37	
Cronbach's Alpha for All Items	0.913	

Source: Own Survey, 2016

CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATION

The research result is presented in to two parts: the first part covers the descriptive statistics of the SCM practices and competitive position as experienced by sesame exporter members of ECX and the second part includes the testing of the null hypotheses either to accept or reject them.

4.1 Data Processing and Reliability Analysis

After data are collected, the researcher cleans the data to avoid any inconsistencies, ambiguous answers and missing information. Following the data edition and correction, data are coded so that it will be understood and analyzed by employing a statistical software program called SPSS 20.0

Reliability test of the independent and dependent variables as well as the constructs with in each variable are found to be reliable in line with Cronbach's alpha coefficient test as indicated in the statistics part of the annex.

4.2 Respondents' Profile and Descriptive Statistics

4.2.1 Response Rate

The list of Sesame Seed Exporters as obtained from Ethiopia Commodity Exchange is the basis for the sample framework. Currently, 90 Sesame Seed Exporters are currently operating in the Exchange as trading members, and all firms were considered for this particular case. Selected respondents are general managers, supply chain managers, technical managers, production managers, quality managers, sales managers and IT managers. A total of 90 questionnaires were disseminated in person to these firms, most of which are residing in Addis Ababa and its surroundings while for those found at a distant places, questionnaires were emailed, faxed and mailed to the respondents. A continuous telephone, email and visit reminders were forwarded to the respondents. Some of the respondents contacted complained that they are so busy, and some of them were considering the response as a disclosure of company internal information to competitors. The researcher has done his level best effort to convince them by

enhancing their level of understandings and informing them the mutual benefits that would be gained as a result of this study.

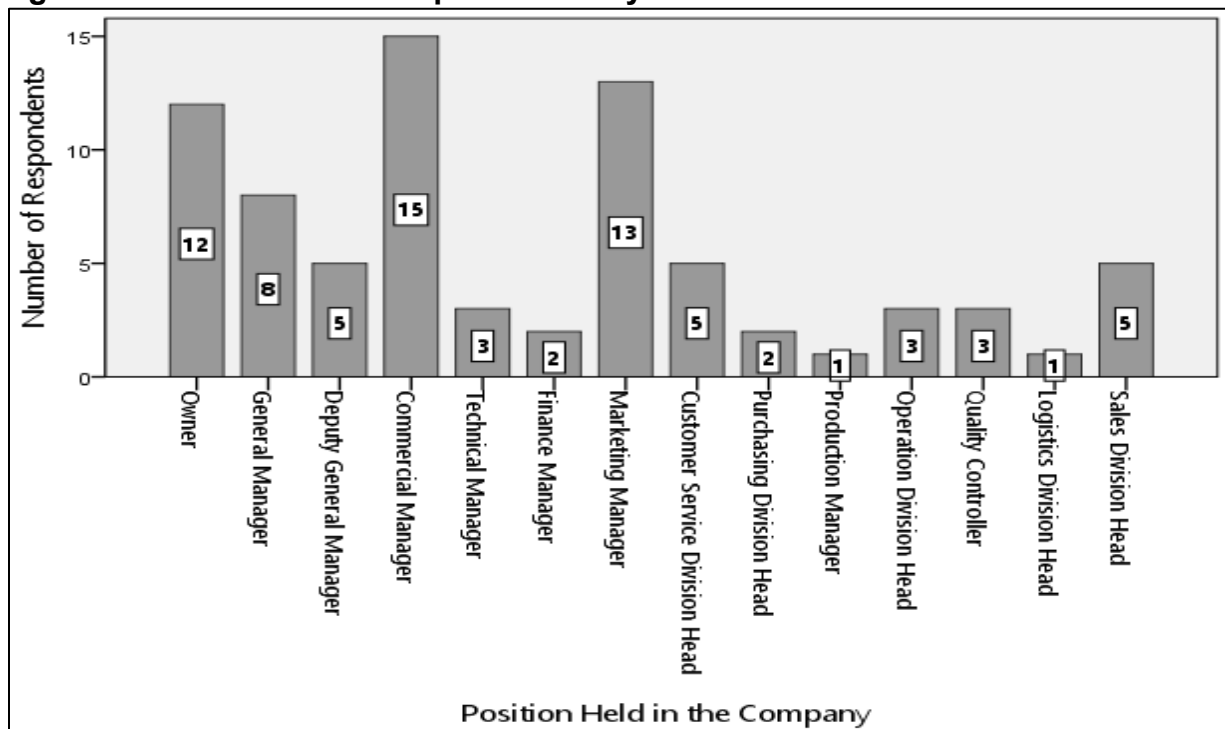
With all these challenges and level of efforts, 78 respondents returned out of the 90 questionnaires distributed. Accordingly, response rate is 86.67% as indicated below;

$$\text{Response rate} = \frac{\text{Number of respondents that cooperated}}{\text{Sample Size (Total respondents)}} = \frac{78}{90} = 86.67\%$$

4.2.2 Respondents' Profile

As indicated in figure 10 below, Fifteen (15) respondents work in the position of commercial manager, thirteen (13) respondents work as marketing managers and twelve (12) of the respondents work as owner of the company while 8 (eight) work in the capacity of general manager. Apart from this, deputy general managers, customer service managers, sales division head, operation divisions heads, technical managers, finance managers, purchasing and production managers are also among the respondents.

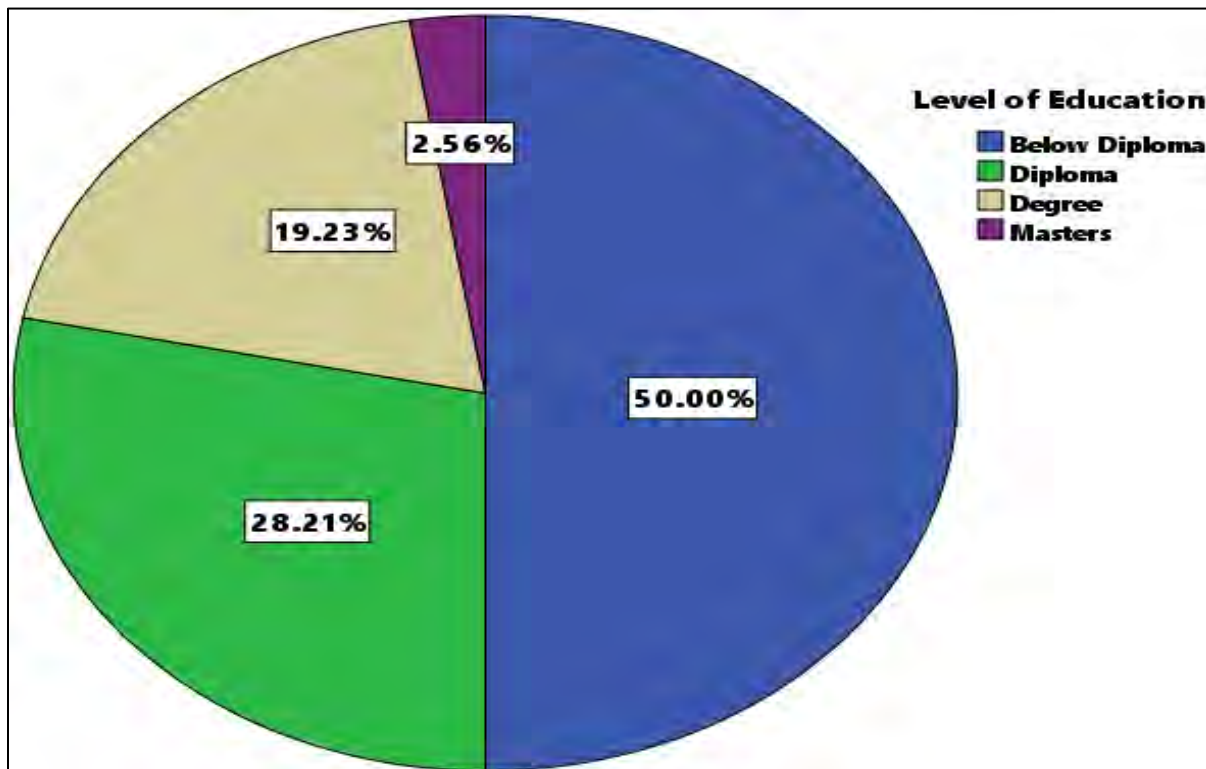
Figure 10: Number of Respondents by Position



Source: Own Survey, 2016

Based on the foregoing analysis, all respondents assume senior and/or middle level managerial positions in the case companies implying that they are well aware of respective company's corporate strategies and supply chain practices. Accordingly, perception data gathered can be dependable and reasonable conclusions can possible be made based on analysis of such data.

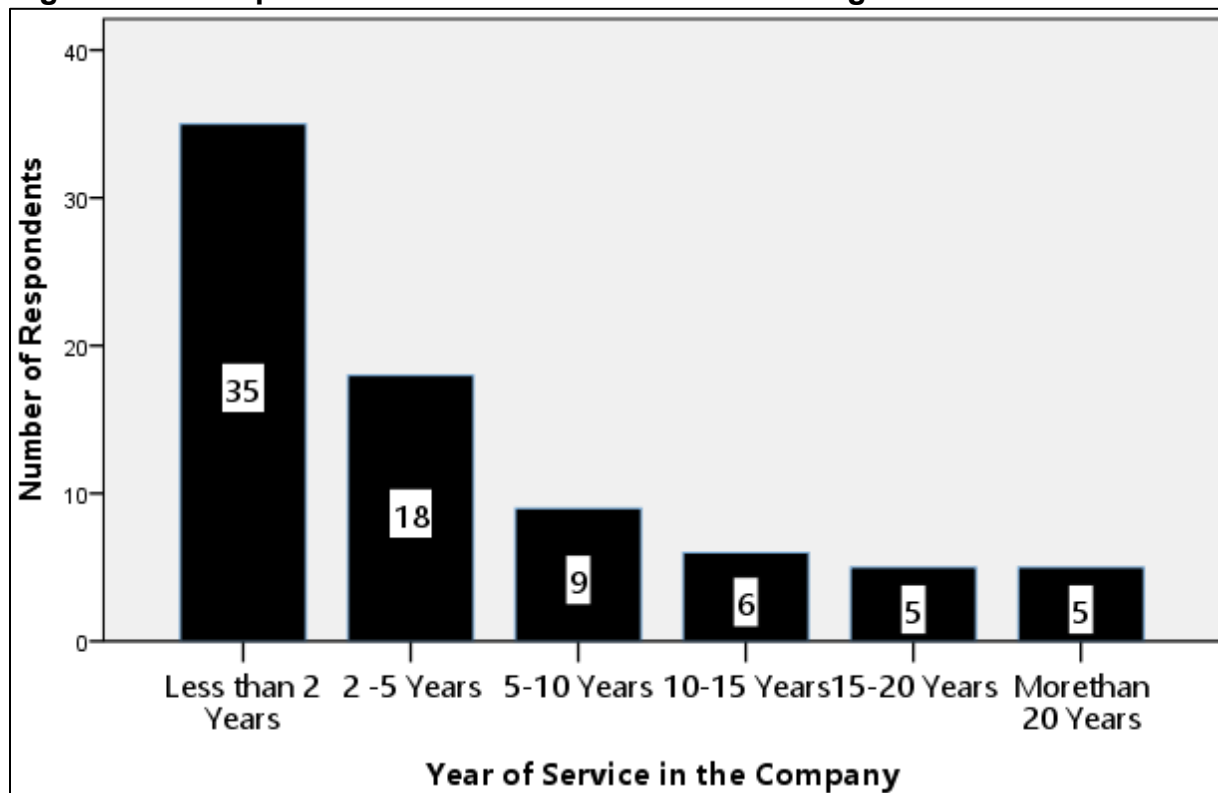
Figure 10: Number of Respondents by Educational Level



Source: Own Survey, 2016

Figure 11 above shows that out of the total respondents, 50% have an educational qualification of below diploma while about 28% of the respondents are diploma holders and 19% are degree holder. Only 2% of the respondents are post-graduates. The fact that half of the respondents are qualified in diploma and above imply that the respondents are able to understand the subject matter and response data can be dependable.

Figure 11: Respondents Year of Service in the Organization



Source: Own Survey, 2016

As indicated in the figure above, about 35 of the respondents have less than two years' experience in the company, while the remaining respondents have stayed more than two years indicating that they are well familiar with policies and organizational culture of the companies under study. Hence, these respondents are expected that they provide full-fledged answers for questions raised via questionnaires.

4.3 Respondents' Perception towards the Extent of SCM Practices

The perception of respondents on each of the SCM practices described in view of managing internal-external success factors, strategic buyers' partnership, effective customer relationship, information communication and competitive position are presented here under;

A. Internal and External Success Factors (Independent Variable)

The respondents were asked about their practice of internal and external success factors as described in eight variables. These variables assess all actors involved in the

organizational sourcing process and their respective roles are clearly stated, Key tools and techniques for implementing SCM, whether each function involved in the buying or selling process understands the need to configure the organization's demand, the Status of political struggles that go on between different functions within an organization, whether All functional strategies are developed to support both each other and the competitive strategy, Managerial competence and understanding in supply chain organizations, whether supply chain organization has an incentive to make substantial investments that are needed to be part of a SCM initiative, as well as the level of competence and achievement of appropriate alignment of power and incentives.

Table 12: The Extent of Application of Internal and External Success Factors

Variables	Poor %	Satisfactory %	Undecided %	Good %	Excellent %	Mean	Std. deviation
All actors involved in the organizational sourcing process and their respective roles are clearly stated to ensure managerial competence and understanding in the organization	28.2	39.7	21.8	7.7	2.6	2.17	1.012
Key tools and techniques for SCM such as Lean Thinking, Agile Thinking, the SC Response Matrix, Critical Asset Thinking, Seven Principles of Muda, Cycle Time Reduction, and Supplier Associations and Networks etc. are appropriately implemented	35.9	37.2	24.4	2.6	-	1.94	.843
Each function involved in the buying process understands the need to configure the organization's demand in a way that makes it attractive to current and potential suppliers and buyers	23.1	44.9	23.1	5.1	3.8	2.22	.989
Tendency to minimize political struggles that go on between different functions within an organization	25.6	46.2	16.7	6.4	5.1	2.19	1.058
All functional strategies are developed to support both each other and the competitive strategy	25.6	43.6	25.6	2.6	2.6	2.13	.917
Managerial competence and understanding in supply chain organizations	17.9	65.4	6.4	6.4	3.8	2.13	.917
Supply chain organization has an incentive to make substantial investments that are needed to be part of a SCM initiative	51.3	39.7	6.4	1.3	1.3	1.62	.777
Existence of a high level of competence and an appropriate alignment of power and incentives	37.2	52.6	5.1	3.8	1.3	1.79	.812

Source: Own Survey, 2016

As presented in Table 12, it is understood that the mean values of the variables are between 1.62 and 2.22. More than half of the respondents (51.3%) disclosed that the organizations' incentive to make substantial investments that are needed to be part of a SCM initiative is poor; & 80% disclosed that the existence of a high level of competence and an appropriate alignment of power and incentives is only satisfactory or below.

Supply chain management requires a close collaboration and integration of activities among different team members. Under this instance, the alignment of goals and cooperative planning among team members is essential. In order to align and appear as a winning team, members need to see vividly and be motivated in what brings them together. However, in the above figures, it seems that there is a high tendency of political struggle among functional units of SC organizations. Moreover, functional strategies tend to focus on their functional interest rather than supporting each other and the competitive strategy.

B. Buyers' Partnership (Independent Variable)

The respondents were asked about their organizations experience regarding effective partnerships with buyers which is manifested in terms of eight variables. These variables assess whether the companies' success is built on their SC, their perceptions towards considering buyers as strategic partners, their practice in widening their buyers' base, whether they involve key buyers in their goal setting and planning process, their experience of information sharing, buyers' performance measurement, reward and motivation systems, and the structure of partnership and skill transfer mechanisms.

Table 13: The Extent of Buyers Partnership

Variables	Poor %	Satisfactory %	Undecided %	Good %	Excellent %	Mean	Std. deviation
The company has built its success on superior design, planning, and operation of its SC	47.4	42.3	2.6	6.4	1.3	1.72	.896
Buyers are considered as strong strategic partners and key team member of the whole SC	37.2	55.1	5.1	2.6	2.6	1.81	.884
There is a buyers' base optimization process (determine how many buyers needed for every critical items, identify the right buyers and establish the right relationship)	37.2	12.8	30.8	16.7	2.6	2.35	1.215
Key buyers are aligned with and allowed to be involved in company's goal setting and planning programs	50.0	32.1	15.4	2.6	-	1.71	.824
Important information are shared among the critical buyers	47.4	10.3	17.9	23.1	1.3	2.21	1.293
There are buyers' performance measurement systems	47.4	35.9	14.1	1.3	1.3	1.73	.848
The company motivates and rewards satisfactory buyers	46.2	44.9	5.1	1.3	2.6	1.69	.842
There are well established trust, problem sharing & solving mechanisms and skills transfer among partners	50.0	41.0	5.1	-	3.8	1.67	.892

Source: Own Survey, 2016

As indicated in Table 13, it can be seen that the mean values of the variables are between 1.67 and 2.35. Half of the respondents disclosed that the companies' failed to

consider key buyers while planning and do not involve them while setting their goals and hence the strength of partnership and trust with their commodity buyers is poor. Similarly, majority of the respondents believe that their companies do not base their success on superior design, planning and operation of their SC and hence there are no information sharing among them and there exists no system of buyers' evaluation and recognition. However, failing to consider buyers as a basis of success and ignoring to establish a strategic partnership has a devastating impact on the company's competitive position in this contemporary world.

C. Effective Customer Relationship (Independent Variable)

The respondents were asked about effective customer services and relationship issues as described into seven variables. These variables assess the company's involvement in customer need assessment, collection of feedback from customers for improvements, new products and services development, prompt filling of customer orders, provision of products information as well as offering of technical assistance & training to users.

Table 14: The Extent of Effective Customer Relationship

Variables	Poor %	Satisfactory %	Undecided %	Good %	Excellent %	Mean	Std. deviation
The SC is designed to incorporate three macro processes: Internal supply chain management, Customer and Supplier Relationship Management that manage the flow of information, product, and funds required to generate, receive, and fulfill a customer request	41.0	38.5	11.5	5.1	3.8	1.92	1.042
The company's SC is designed in such a way that the three macro processes are well integrated	43.6	34.6	14.1	5.1	2.6	1.88	1.006
Starts from the requirement of the customer needs and accordingly plan, design and develop products and services	38.5	16.7	9.0	34.6	1.3	2.44	1.344
Obtains feedback from customers and modify products and services to meet the requirement	41.0	20.5	6.4	29.5	2.6	2.32	1.344
Strives and launches new products and services to the customers	51.3	29.5	10.3	5.1	3.8	1.81	1.070
Fills customer orders as accurately and promptly as required	34.6	38.5	15.4	5.1	6.4	2.10	1.135
More and better products information are provided to customers	43.6	30.8	12.8	9.0	3.8	1.99	1.134

Source: Own Survey, 2016

As presented in Table 14, it is understood that the mean values of the variables are between 1.81 and 2.44. More than half of the respondents (51.3%) disclosed that the companies' trend of striving and launching new products and services to the customers

are poor. Customer relationship deals with identification of key customers, development and implementation of different programs to secure the best levels of customer satisfaction. Innovation and extended level of delivered services are crucial to secure the satisfaction of the ultimate customers. However, poor level of new product and services development as well as weak level of customer feedback collection had an immense impact on the competitive position of organizations in today's world.

D. Information Communication (Independent Variable)

The respondents were asked about information communication & its effectiveness as described into seven variables. These variables assess the company's IT investment, people's willingness & sharing of information, & use and application of online systems and alignment of information systems among supply chain members.

Table 15: Extent of Effective Information Communications

Variables	Poor %	Satisfactory %	Undecided %	Good %	Excellent %	Mean	Std. deviation
Local and international market information from different sources is tracked, updated and shared with in and across the supply chain on timely basis	41.0	10.3	2.6	37.2	9.0	2.63	1.538
Invests in IT to connect the people both within the company as well as across the SC	46.2	14.1	5.1	25.6	9.0	2.64	1.554
People are willing to use and share information within and across the supply chain	35.9	23.1	3.8	28.2	9.0	2.51	1.448
Online connections (EDI, internets etc.) are widely used within as well as across supply chain members	37.2	29.5	3.8	20.5	9.0	2.35	1.394
Information regarding monitoring of orders, materials, schedules, inventories (ERP)	39.7	35.9	3.8	14.1	6.4	2.12	1.259
Online information about customers are tracked	64.1	21.8	3.8	6.4	3.8	1.64	1.081
Uses online systems to achieve operating efficiency	64.1	20.5	3.8	11.5	-	1.63	1.008
Works closely with SC members to align and solve basic information communication challenges	52.6	37.2	5.1	3.8	1.3	1.64	.852

Source: Own Survey, 2016

Table 15 above shows that the mean values of the variables are between 1.63 and 2.64. More than half of the respondents (52.6%) disclosed that the companies' efforts to work closely with SC members in order to solve basic information communication challenges are poor. Moreover, majority of the respondents stated that tracking, update and sharing of local and global information, investment in IT, customers' on line information tracking and application of online systems to achieve operational efficiency are poor. Usage of appropriate information technology improves supply chain

responsiveness, reduces cycle time, enable to achieve higher efficiency and facilitate the fastest delivery of products and services to the customers. The information technology enabled various people, teams, functions and organizations to work together as a team along the supply chain. Accordingly, the relationships as facilitated by information technology have a great impact on information exchange which in the end enables to secure customer satisfaction and attain competitive advantage over the rival competitors.

E. Competitive Position of Sesame Exporters (Dependent Variable)

The respondents were asked about competitive position in six variables. These variables assess the company's position in offering low cost/price product, innovation of new products & services, quality products and sustainability.

Table 16: Responses about Competitive Position

Variables	Poor %	Satisfactory %	Undecided %	Good %	Excellent %	Mean	Std. deviation
Offers low cost/price product by attaining full capacity operations	35.9	25.6	6.4	30.8	1.3	2.36	1.289
Is under constant innovation and delivers new products and services to the market	52.6	17.9	5.1	21.8	2.6	2.04	1.304
Offers Quality product, value and services	53.8	10.3	11.5	17.9	6.4	2.13	1.399
Do have many product variations, wide selections, extended services and attributes	55.1	17.9	15.4	11.5	-	1.83	1.074
Develops time conserving systems as well as environmentally friendly products	29.5	38.5	3.8	23.1	5.1	2.36	1.269
Has established customer feedback collecting mechanism and timely integration of feedbacks	46.2	26.9	11.5	7.7	7.7	2.04	1.263

Source: Own Survey, 2016

As indicated in Table 16 above, it can be seen that the mean values of the variables are between 1.83 and 2.36. More than half of the respondents (52.6%) disclosed that the companies' competitive position is under poor state of constant innovation. They added that deliverance of new products and services to the market is also poor. In addition, majority of the respondents stated that the companies' ability to offer low cost/price products is poor. Competitive advantage is attained through the delivery of goods and services to customers in a way that it excels competitors and meeting and even going beyond the expectation of the customers. As observed from the perception of the respondents, majority of the respondents stated that companies are not providing low cost products, are not innovative and hence do not supply value added products, variety of products are limited and they are not working in a sustainable manner. Clearly, these

variables do have an impact on the competitive position of the Sesame Exporters in Ethiopia.

4.4 Hypothesis Testing

Based on the specific objectives of this study, four hypotheses were developed and empirical data were collected from the respondents to either accept or reject the null hypothesis.

To test the hypotheses drawn, non-parametric tests were applied. The tests used are Kendall's Tau & One Way ANOVA.

The Kendall's Tau Test: is a non-parametrical test used for ordinal variables, which makes fewer assumptions about variables and preferable when two or more respondents are at the same rank (Alan & Cramer, 2009). This test was used to test the relationship, strength & direction of the relationship between the independent & dependent variables stated in the four hypotheses. As it's indicated in the descriptive output about respondents' perception of the extent of supply chain management practices in tables 11 to 15, there was some proportions to which the responses were tied-ranked for items in each variable list. Thus, for such kind of data Kendall's Tau test is preferable, because it is used to test the correlation of variables with tied-rank, than other non-parametric measures of correlation (Alan & Cramer, 2009).

One Way ANOVA: is an inferential statistical method which is issued for comparing the means of one or more groups based on a classified independent variable in order to reduce the probability of type I error (Chris, 2004). This test was used to test the mean score of each independent variable against the dependent variable. It helps also to ascertain the correlation coefficient that results from the Kendall's Tau statistical test occurred not by chance, but by probability.

Testing Hypothesis 1

H₀₁: There is no relationship between the internal and external success factors and competitive positioning for Sesame Exporter Members of ECX.

H_{a1}: There is relationship between the internal and external success factors and competitive positioning for Sesame Exporter Members of ECX.

Table 17: Matrix of Kendall's tau correlation coefficients between internal and external success factors and competitive positioning

			Competitive Position	Internal and External Success Factors
Kendall's tau	Competitive Position	Correlation Coefficient	1.000	.953**
		Sig. (2-tailed)	.	.000
		N	78	78
	Internal and External Success Factors	Correlation Coefficient	.953**	1.000
		Sig. (2-tailed)	.000	.
		N	78	78
**. Correlation is significant at the 0.01 level (2-tailed).				

Source: Own Survey, 2016

The level of correlation in Table 17, between internal and external success factors & Competitive position, shows 0.953 (with a significant level.000, which is much better than the conventional cut-off 0.05), suggesting that the relationship is defiantly statistically significant. The evidence against H₀ is strong. The correlation coefficient provides estimate of co-variance that the two variables are related at $\alpha=0.000$ significant level (thus, reject H₀ at $\alpha=0.000$). Therefore, there a strong positive relationship between internal and external success factors and the competitive positioning for sesame exporters.

Table 18: One-Way ANOVA: Comparing Internal and External Success Factors across Competitive Positioning.

ANOVA					
Competitive Position					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4025.038	19	211.844	412.373	.000
Within Groups	29.796	58	.514		
Total	4054.833	77			

Source: Own Survey, 2016

The ANOVA–test showed that the mean score of internal and external success factors and competitive positioning was the same at less than the conventional cut-off 0.05

levels ($\alpha=0.000$). Thus, this ascertained that the correlation coefficient computed for internal and external success factors against competitive positioning occurred not due to chance, but with significant level of probability. This means that the correlation among the two variables occurred by chance is very low.

Testing Hypothesis 2

H_{02} : There is no relationship between effective buyers' partnership and competitive positioning for Sesame Exporter Members of ECX.

H_{a2} : There is relationship between effective buyers' partnership and competitive positioning for Sesame Exporter Members of ECX.

Table 19: Matrix of Kendall's Tau Correlation Coefficients between Buyers' Partnership and Competitive Position

			Competitive Position	Buyers' Partnership
Kendall's tau	Competitive Position	Correlation Coefficient	1.000	.949**
		Sig. (2-tailed)	.	.000
		N	78	78
	Buyers' Partnership	Correlation Coefficient	.949**	1.000
		Sig. (2-tailed)	.000	.
		N	78	78
**. Correlation is significant at the 0.01 level (2-tailed).				

Source: Own Survey, 2016

The level of correlation in Table 19, between effective buyers partnership and Competitive position, shows 0.949 with a significant level (.000, which is much better than the conventional cut-off 0.05), suggesting that the relationship is defiantly statistically significant. The evidence against H_0 is strong. The correlation coefficient provides estimate of co-variance that the two variables are related at $\alpha=0.000$ significant level (thus, reject H_0 at $\alpha=0.000$). Therefore, there is a strong positive relationship between effective buyers' partnership and the competitive positioning for sesame exporters.

Table 20: One-Way ANOVA: Comparing Buyers' Partnership across Competitive Positioning.

ANOVA					
Competitive Position					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3909.093	18	217.172	87.917	.000
Within Groups	145.740	59	2.470		
Total	4054.833	77			

Source: Own Survey, 2016

The ANOVA-test showed that the mean score of buyers' partnership and competitive positioning was the same at less than the conventional cut-off 0.05 levels ($\alpha=0.000$). Thus, this ascertained that the correlation coefficient computed for buyers' partnership against competitive positioning occurred not due to chance, but with significant level of probability. This means that the correlation among the two variables occurred by chance is very low.

Testing Hypothesis 3

H₀₃: There is no relationship between effective Suppliers Relationship and competitive positioning for Sesame Exporter Members of ECX.

H_{a3}: There is relationship between effective Suppliers Relationship and competitive positioning for Sesame Exporter Members of ECX.

Table 21: Matrix of Kendall's Tau Correlation Coefficients between Customers Relationship and Competitive Positioning.

			Competitive Position	Customers Relationship
Kendall's tau	Competitive Position	Correlation Coefficient	1.000	.947**
		Sig. (2-tailed)	.	.000
		N	78	78
	Customers Relationship	Correlation Coefficient	.947**	1.000
		Sig. (2-tailed)	.000	.
		N	78	78
**. Correlation is significant at the 0.01 level (2-tailed).				

Source: Own Survey, 2016

Previously we have seen that the level of correlation between customers' relationship and Competitive positioning is 0.947 with a significant level (.000, which is much better than the conventional cut-off 0.05), suggesting that the relationship is defiantly statistically significant. The evidence against H_0 is strong. The correlation coefficient provides estimate of co-variance that the two variables are related at $\alpha=0.000$ significant level (thus, reject H_0 at $\alpha=0.000$). Therefore, there is a strong positive relationship between effective Suppliers Relationship and the competitive positioning for sesame exporters.

Table 22: One-Way ANOVA: Comparing Customers Relationship across Competitive Positioning.

ANOVA					
Competitive Position					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4032.543	22	183.297	452.267	.000
Within Groups	22.291	55	.405		
Total	4054.833	77			

Source: Own Survey, 2016

The ANOVA-test showed that the mean score of Customers Relationship and competitive positioning was the same at less than the conventional cut-off 0.05 levels ($\alpha=0.000$). Thus, this ascertained that the correlation coefficient computed for customers relationship against competitive positioning occurred not due to chance, but with significant level of probability. This means that the correlation among the two variables occurred by chance is very low.

Testing Hypothesis 4

H_{04} : There is no relationship between effective Information communication and competitive positioning for Sesame Exporter Members of ECX.

H_{a4} : There is relationship between effective Information communication and competitive positioning for Sesame Exporter Members of ECX.

Table 23: Matrix of Kendall's Tau Correlation Coefficients between Information Communication and Competitive Positioning.

			Competitive Position	Information Communication
Kendall's tau	Competitive Position	Correlation Coefficient	1.000	.960**
		Sig. (2-tailed)	.	.000
		N	78	78
	Information Communication	Correlation Coefficient	.960**	1.000
		Sig. (2-tailed)	.000	.
		N	78	78
**. Correlation is significant at the 0.01 level (2-tailed).				

Source: Own Survey, 2016

As indicated previously, the level of correlation between Information communication and Competitive positioning is 0.960 with a significant level (.000, which is much better than the conventional cut-off 0.05), suggesting that the relationship is defiantly statistically significant. The evidence against H_0 is strong. The correlation coefficient provides estimate of co-variance that the two variables are related at $\alpha=0.000$ significant level (thus, reject H_0 at $\alpha=0.000$). Therefore, there is a strong positive relationship between effective Information communication and the competitive positioning for sesame exporters.

Table 24: One-Way ANOVA: Comparing Information Communication across Competitive Positioning.

ANOVA					
Competitive Position					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4039.359	25	161.574	542.950	.000
Within Groups	15.474	52	.298		
Total	4054.833	77			

Source: Own Survey, 2016

The ANOVA-test showed that the mean score of Information communication and competitive positioning was the same at less than the conventional cut-off 0.05 levels ($\alpha=0.000$). Thus, this ascertained that the correlation coefficient computed for Information communication against competitive positioning occurred not due to chance,

but with significant level of probability. This means that the correlation among the two variables occurred by chance is very low.

Table 25: Summary Matrix of Kendall's Tau Correlation Coefficients between the Four Independent Variables and Competitive Positioning

			Internal and External Success Factors	Buyers Partnership	Customers Relationship	Information Communication
Kendall's tau	Competitive Position	Correlation Coefficient	.953 **	.949 **	.947 **	.960 **
		Sig. (2-tailed)	.000	.000	.000	.000
		N	78	78	78	78

Source: Own Survey, 2016

Table 26: Summary of Hypothesis Testing

Null hypothesis		Result
H ₀₁	There is no relationship between the internal and external success factors and competitive positioning for Sesame Exporter Members of ECX.	Rejected
H ₀₂	There is no relationship between effective buyers' partnership and competitive positioning for Sesame Exporter Members of ECX.	Rejected
H ₀₃	There is no relationship between effective Customer Relationship and competitive positioning for Sesame Exporter Members of ECX.	Rejected
H ₀₄	There is no relationship between effective Information communication and competitive positioning for Sesame Exporter Members of ECX.	Rejected

Source: Own Survey, 2016

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

In the preceding chapters, data were analyzed and discussed based on the summary of descriptive analysis and hypothesis testing. In this chapter, the findings are summarized and accordingly conclusion and recommendations would be drawn in a way that it would develop awareness among the stakeholders operating in the sesame export of Ethiopia.

5.1 Summary of Major Findings

In the past demand were exceeding supply and customers were supposed to pay for less quality products. This has created exporters complacency as they could sell their products at wished prices leading them to be less customer focused and hence no strategic relationship or partnership was created. Recently, however, competitors have flooded the market which pushed prices lower.

Sharing critical information is vital to reduce the level of inventory and costs while delivering improved performance level within the supply chain levels. As it is also mentioned in the previous chapters, the lucrative profits currently gained in the industry, visible demand and supply gaps in the coming years and government's relentless effort to attract local and global firms, the business as usual nature of the sesame industry in Ethiopia will never last longer in today's era of globalization.

Therefore, the researcher has identified the supply chain management practices and analyzed their relationship with the competitive position of Sesame Exporters in Ethiopia in a way that could be applied future situations.

In the statistical hypothesis testing, the level of correlation between internal-external success factors and competitive position for Sesame Exporter Members of ECX is found to be 0.953 with a significant level of 0.05, which suggests that their relationship is highly significant. Therefore, the hypothesis "There is no relationship between internal-external success factors and competitive position for Sesame Exporter Members of ECX" is rejected. Hence, companies need to give a due consideration for competency of their internal as well as external actors to stay in a competitive position.

The level of correlation between strategic buyers' partnership and competitive position is found to be 0.949 with a significant level of 0.05, which suggests their relationship is significant. Therefore, the first null hypothesis stated as "There is no relationship between the strategic buyers' partnership and competitive position for Sesame Exporter members of ECX" is rejected and companies need to give due consideration for strategic buyers partnership to sustain the upcoming competitive conditions.

In terms of customers' relationship and service, the level of correlation between strategic customer relationship and competitive position is found to be 0.947 with a significant level of 0.05, which suggests that their relationship is highly significant. Therefore, the second null hypothesis which is stated as "There is no relationship between effective customer relationship and competitive positioning for Sesame Exporter Members of ECX" is rejected. Companies need to give due consideration for uninterrupted customer relationships to sustain their upcoming competitive conditions.

Finally, the level of correlation between information communication and competitive position is found to be 0.960 with a significant level of 0.05. This suggests that their relationship is highly significant. Therefore, the fourth null hypothesis that states as "There is no relationship between information communication and competitive positioning for Sesame Exporter Members of ECX" is rejected. Companies need to give due consideration for the infrastructure development, and trust building among themselves to develop and share information so that they will be in a competitive position in the end.

5.2 Conclusion

The findings indicated that supply chain management practices for sesame exporters trading at ECX are almost poor. In addition, according to the informal discussion made between the researcher and some of the respondents, as well as different institutions representing exporters like National Exchange Actors Association (NEAA), Ethiopian Pulses, Oil Seeds and Spices Processors and Exporters Association (EPOSPEA) as well as responsible organs at ECX, contended that stiff competition in the global market has hampered exporters' business growth.

As shown in the descriptive statistics and hypothesis testing, the SCM practices as categorized under different issues show that the level of the practices are at their lower level and the impact of these variables on the competitive position of sesame exporters are highly significant.

5.3 Recommendations

To proactively avert the challenge of these variables on the competitive position of Sesame Exporter Members of ECX, the researcher recommends the followings.

1. Sesame Exporter Members of ECX need to consider the situation in their internal and external success factors. This requires implementation of different SCM techniques like lean and agile thinking.
2. Sesame Exporter Members of ECX need to replace their usual transactional buyers' relationship with strategic buyers' partnership. This requires the identification and follows up of critical buyers; they should be invited to be involved in the phase of organization planning. There should also be a buyers performance measurement schemes with which they are going to be motivated and rewarded. Together, they should develop a joint team that facilitate trust among partners, solve potential harms that may be created within or across the border.
3. Sesame Exporter Members of ECX need to understand that they are there not only to sell sesame but to serve them. An organization never exists if there are no customers. The very existence of every organization is to satisfy the customers to attain the very purpose of profitability. As discussed in the literature review, these days, sesame market is buyer driven and this leads exporters to be worried about cost, quality, services and diversity. Due to the era of globalization, no market is secured from intrusion. As time comes for the competition, dissatisfied customers would retaliate by migrating to the new better suppliers. Therefore, exporting firms need to identify the need of the customers, collect feedbacks on any complaints and avail different products and service attributes to their customers.
4. Information technology should be instituted to foster information communication within and among all supply chain members. The government shall revisit ECX's

market information dissemination mechanism which is depleting exporters' comparative advantage by exposing detailed market information. Unlike this, it does not collect and disseminate of global reference prices to Ethiopian exporters. Apart from this, some of the respondents indicated that there exists uncontrolled market intelligence by foreign consultants in search of stock positions in sesame production areas of Ethiopia which they use it to manipulate natural forces of demand and supply. Hence, these problems shall be given serious emphasis by the government. Connectivity should start from customers through the organizations to the suppliers. Online information gathering and sharing should be designed based on mutual trust and purposes. Technologies also have to be compatible enough along the supply chain members to smoothen the flow and understandings along the networked lines.

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APPENDICES

I. QUESTIONNAIRE

Dear respondent,

The purpose of this Questionnaire is to gather data for a research on “**Addressing Supply Chain Challenges of Export Competitiveness: An Empirical Study on Sesame Exporter Members of Ethiopia Commodity Exchange**”, in partial fulfillment of the requirements for the award of Master’s Degree in Logistics and Supply Chain Management. The research will be conducted to assess supply chain related challenges facing the sesame industry in Ethiopia and sesame exporters trading via ECX in particular. I believe your information in this regard will contribute a lot to the success of this study. While completing this questionnaire, you don’t need to express yours or your company’s name. Answering the questions will not take you more than 10 minutes and I assure you that the data you will be giving will only be used for academic purpose with strict confidentiality.

In case you have any inquiry or need clarification regarding the questions, please feel free to contact me with:

E-mail: hailemichael.hailu@ecx.com.et or ht5stars@gmail.com

Mob: **+251-9-11-915146**

I thank you for your precious time and cooperation!

Yours sincerely

Hailemichael Hailu

General instructions and information for filling the questionnaire

1. Likert scales are used to indicate your measurement on the level of your organization's supply chain management practices and their impacts on its competitive position.
2. Please answer all questions by CIRCLING ONLY ONE BEST ANSWER from the numbers at each row under each table.
3. The numbers in the table represents as follows.
 - a. Number **1** represents **POOR**
 - b. Number **2** represents **SATISFACTORY**
 - c. Number **3** represents **UNDECIDED**
 - d. Number **4** represents **GOOD**
 - e. Number **5** represents **EXCELLENT**
4. If you do have any further comment or any remarks, please do not hesitate to write it down at the spaces designated below each tables. If you find it not enough to write you can attach them by writing them on a separate sheet of paper.

PART I: DEMOGRAPHIC INFORMATION

1. Your position in the company (please put $\checkmark$ at the corresponding answer)

- | | |
|--------------------------------------|------------------------------------|
| i. Owner____ | x. Supply Chain Manager____ |
| ii. Board of director____ | xi. Purchasing Division Head____ |
| iii. General Manager____ | xii. Production Manager____ |
| iv. Deputy General Manager____ | xiii. Operations Division Head____ |
| v. Commercial Manager____ | xiv. Quality Controller____ |
| vi. Technical Manager____ | xv. Logistics Division head____ |
| vii. Finance Manager____ | xvi. IT Manager____ |
| viii. Marketing Manager____ | xvii. Sales Division Head____ |
| ix. Customer services Divi. Head____ | |

2. Level of education (please put $\checkmark$ at the corresponding answer)

- | | |
|---------------------|-----------------------------|
| _____ Below diploma | _____ Diploma |
| _____ Degree | _____ Post graduate diploma |
| _____ Masters | _____ PHD |

3. Years of services within the company (please put $\checkmark$ at the corresponding answer)

- | | |
|-------------------------|--------------------------|
| _____ Less than 2 Years | _____ 2-5 Years |
| _____ 5 -10 Years | _____ 10-15 Years |
| _____ 15-20 Years | _____ more than 20 Years |

4. Types of products (Other than Sesame, if any) provided to customers (please put $\checkmark$ at the corresponding answer: two answers are possible)

Coffee____ Pea beans____ Mung Beans____ All____ None____

5. Number of Employees within the organization (please put $\checkmark$ at the corresponding answer)

- | | |
|--------------------|--------------------|
| _____ Less than 10 | _____ 10 -30 |
| _____ 30 -50 | _____ More than 50 |

PART II. SUPPLY CHAIN MANAGEMENT (SCM) PRACTICE AT YOUR ORGANIZATION

1. Internal-External Success Factors

No.	SCM Practices	The level of supply chain management practices				
		Poor	Satisfactory	Undecided	Good	Excellent
1	All actors involved in the organizational sourcing process and their respective roles are clearly stated to ensure managerial competence and understanding in the organization	1	2	3	4	5
2	Key tools and techniques for SCM such as Lean Thinking, Agile Thinking, the Supply Chain(SC) Response Matrix, , Critical Asset Thinking, Seven Principles of Muda, Big Picture Mapping, Value Stream Mapping, Cycle Time Reduction, and Supplier Associations and Networks etc. are appropriately implemented	1	2	3	4	5
3	Each function involved in the buying process understands the need to configure the organization's demand in a way that makes it attractive to current and potential suppliers and buyers	1	2	3	4	5
4	Status of political struggles that go on between different functions within an organization	1	2	3	4	5
5	All functional strategies are developed to support both each other and the competitive strategy	1	2	3	4	5
6	Managerial competence and understanding in supply chain organizations	1	2	3	4	5
7	Supply chain organization has an incentive to make substantial investments(developing or improving the required operational and demand management competencies and organizational change process that might be necessary to make SCM initiatives effective) that are needed to be part of a SCM initiative	1	2	3	4	5
8	A high level of competence and an appropriate alignment of power and incentives are achieved	1	2	3	4	5

Lean thinking: a cyclical route to seeking perfection by eliminating waste and thereby enriching value from the end-customer perspective.

Agile thinking: react as quickly as is practicable to provide a cost effective response to customer demand. This is based on flexibility in design, supply, production and distribution.

SC Response Matrix: A supply chain responsiveness matrix is a tool that is used to analyze inventory and lead time within an organization. The matrix is represented by showing lead time along the X- Axis and inventory along the y axis. The result shows where slow moving stock resides.

Critical Asset Thinking: maximizes the performance of fixed, physical or capital assets that have a direct and significant impact on achieving corporate objectives. Companies and organizations depend on vital assets to drive their business; however, they often see them as individual, stand-alone objects operating in the background.

Seven Principles of Muda: Muda is a Japanese term that means "waste." According to lean manufacturing principals, there are 7 Mudas or seven types of waste that can be found in a manufacturing process: Over production, Excess Inventory, Defects, Over Processing, Unnecessary Motion, Damage due to Transport and Handling, and Waiting

Big Picture Mapping: A 'big picture map' helps to identify where we are now, where we want to be and how we plan to get there. It tracks a product's path from its raw material state to delivery to the customer, providing a visual representation of every process, including quality checks, rework etc, and the material information flows.

Value Stream Mapping: Value stream mapping is a lean manufacturing or lean enterprise technique used to document, analyze and improve the flow of information or materials required to produce a product or service for a customer. It is a special type of flow chart that uses symbols known as "the language of Lean" to depict and improve the flow of inventory and information.

Cycle Time Reduction: The period required to complete one cycle of an operation; or to complete a function, job, or task from start to finish.Cycle time reduction plays an important role in improving the competitiveness and sustainability of a firm.

Supplier Associations and Networks: is a business term which refers to a customer company bringing together a group of its suppliers on a formal and regular basis in order to achieve strategic and operational alignment.

Just-in-time: a broad philosophy of management that seeks to eliminate waste and improve quality in all business processes. JIT is put into practice by means of a set of tools and techniques that provide the cutting edge in the 'war on waste'.

Vendor-managed inventory: delegating to the supplier the responsibility for controlling inventories and replenishments.

2. Buyers' Partnership:

No.	SCM Practices	The level of supply chain management practices				
		Poor	Satisfactory	Undecided	Good	Excellent
1	The company has built its success on superior design, planning, and operation of its SC	1	2	3	4	5
2	Buyers are considered as strong strategic partners and key team member of the whole SC	1	2	3	4	5
3	There is a buyers' base optimization process (determine how many buyers needed for every critical items, identify the right buyers and establish the right relationship)	1	2	3	4	5
4	Key buyers are aligned with and allowed to be involved in company's goal setting and planning programs	1	2	3	4	5
5	Important information are shared among the critical buyers	1	2	3	4	5
6	There are buyers' performance measurement systems	1	2	3	4	5
7	The company motivates and rewards satisfactory buyers	1	2	3	4	5
8	There are well established trust, problem sharing & solving mechanisms and skills transfer among partners	1	2	3	4	5

Other remarks _____

3. Customers relationship

No.	SCM Practices	The level of supply chain management practices				
		Poor	Satisfactory	Undecided	Good	Excellent
1	The supply chain (SC) is designed to incorporate three macro processes (Customer Relationship Management, Internal supply chain management, and Supplier Relationship Management) that manage the flow of information, product, and funds required to generate, receive, and fulfill a customer request	1	2	3	4	5
2	The company's SC is designed in such a way that the three macro processes are well integrated	1	2	3	4	5
3	Starts from the requirement of the customer needs and accordingly plan, design and develop products and services.	1	2	3	4	5
4	Obtains feedback from customers and modify products and services to meet the requirement	1	2	3	4	5
5	Strives and launches new products and services to the customers	1	2	3	4	5
6	Fills customer orders as accurately and promptly as required	1	2	3	4	5
7	More and better products information are provided to customers	1	2	3	4	5

Other remarks _____

4. Information communication

No.	SCM Practices	The level of supply chain management practices				
		Poor	Satisfactory	Undecided	Good	Excellent
1	Local and international market information from different sources is tracked, updated and shared with in and across the supply chain on timely basis	1	2	3	4	5
2	Invests in IT to connect the people both within the company as well as across the SC	1	2	3	4	5
3	People are willing to use and share information within and across the supply chain	1	2	3	4	5
4	Online connections (EDI, internets etc.) are widely used within as well as across supply chain members	1	2	3	4	5
5	Information regarding monitoring of orders, materials, schedules, inventories (ERP)	1	2	3	4	5
6	Online information about customers are tracked	1	2	3	4	5
7	Uses online systems to achieve operating efficiency	1	2	3	4	5
8	Works closely with SC members to align and solve basic information communication challenges	1	2	3	4	5

Other remarks _____

5. Competitive position

No.	SCM Practices	The extent of company Competitive positions				
		Poor	Satisfactory	Undecided	Good	Excellent
1	Offers low cost/price product by attaining full capacity operations	1	2	3	4	5
2	Is under constant innovation and delivers new products and services to the market	1	2	3	4	5
3	Offers Quality product, value and services	1	2	3	4	5
4	Do have many product variations, wide selections, extended services and attributes	1	2	3	4	5
5	Develops time conserving systems as well as environmentally friendly products	1	2	3	4	5
6	Has established customer feedback collecting mechanism and timely integration of feedbacks	1	2	3	4	5

Other remarks _____

ONCE AGAIN I THANK YOU A LOT!!

II. STATISTICS

1. Reliability Test for the Independent and Dependent Variables

Variables	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Internal and External Success Factors (dependent)	61.8077	930.703	.965	.986
Buyers' Partnership (dependent)	62.1667	952.063	.967	.987
Customers Relationship (dependent)	63.5256	876.149	.992	.982
Information Communication (dependent)	60.6282	784.548	.988	.988
Competitive Position(Independent)	63.8205	909.682	.972	.985
Cronbach's Alpha=0.989				

Source: Own Survey, 2016

2. Reliability Test for Constructs of Internal and External Success Factors

Variables	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
All actors involved in the organizational sourcing process and their respective roles are clearly stated to ensure managerial competence and understanding in the organization	14.01	35.467	.969	.978
Key tools and techniques for SCM such as Lean Thinking, Agile Thinking, the SC Response Matrix, Critical Asset Thinking, Seven Principles of Muda, Cycle Time Reduction, and Supplier Associations and Networks etc. are appropriately implemented	14.24	38.083	.902	.981
Each function involved in the buying process understands the need to configure the organization's demand in a way that makes it attractive to current and potential suppliers and buyers	13.96	35.778	.965	.978
Status of political struggles that go on between different functions within an organization	13.99	34.974	.966	.978
All functional strategies are developed to support both each other and the competitive strategy	14.05	36.725	.955	.978
Managerial competence and understanding in supply chain organizations	14.05	37.426	.883	.982
Supply chain organization has an incentive to make substantial investments that are needed to be part of a SCM initiative	14.56	39.028	.880	.982
A high level of competence and an appropriate alignment of power and incentives are achieved	14.38	38.344	.913	.981
Cronbach's Alpha=0.982				

Source: Own Survey, 2016

3. Reliability Test for Constructs of Buyers' Partnership

Variables	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
The company has built its success on superior design, planning, and operation of its SC	13.15	41.249	.947	.973
Buyers are considered as strong strategic partners and key team member of the whole SC	13.06	42.139	.874	.977
There is a buyers' base optimization process (determine how many buyers needed for every critical items, identify the right buyers and establish the right relationship)	12.53	37.551	.935	.975
Key buyers are aligned with and allowed to be involved in company's goal setting and planning programs	13.17	42.063	.955	.974
Important information are shared among the critical buyers	12.67	37.212	.891	.980
There are buyers' performance measurement systems	13.14	41.681	.963	.973
The company motivates and rewards satisfactory buyers	13.18	41.941	.944	.974
There are well established trust, problem sharing & solving mechanisms and skills transfer among partners	13.21	41.464	.930	.974
Cronbach's Alpha=0.978				

Source: Own Survey, 2016

4. Reliability Test for Constructs of Customers Relationship

Variables	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
The SC is designed to incorporate three macro processes: Internal supply chain management, Customer and Supplier Relationship Management that manage the flow of information, product, and funds required to generate, receive, and fulfill a customer request	12.54	44.901	.953	.977
The company's SC is designed in such a way that the three macro processes are well integrated	12.58	45.260	.962	.977
Starts from the requirement of the customer needs and accordingly plan, design and develop products and services.	12.03	42.051	.885	.983
Obtains feedback from customers and modify products and services to meet the requirement	12.14	41.525	.922	.980
Strives and launches new products and services to the customers	12.65	44.749	.936	.978
Fills customer orders as accurately and promptly as required	12.36	43.869	.940	.977
More and better products information are provided to customers	12.47	43.525	.968	.976
Cronbach's Alpha=0.981				

Source: Own Survey, 2016

5. Table 16: Reliability Test for Constructs of Customers Relationship

Variables	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Local and international market information from different sources is tracked, updated and shared with in and across the supply chain on timely basis	14.26	65.778	.897	.976
Invests in IT to connect the people both within the company as well as across the SC	14.51	65.058	.963	.971
People are willing to use and share information within and across the supply chain	14.37	65.977	.954	.971
Online connections (EDI, internets etc.) are widely used within as well as across supply chain members	14.54	66.745	.958	.971
Information regarding monitoring of orders, materials, schedules, inventories (ERP)	14.77	69.556	.923	.973
Online information about customers are tracked	15.24	72.940	.889	.975
Uses online systems to achieve operating efficiency	15.26	73.881	.902	.975
Works closely with SC members to align and solve basic information communication challenges	15.24	76.317	.905	.977
Cronbach's Alpha=0.977				

Source: Own Survey, 2016

6. Reliability Test for Constructs of Competitive Positioning

Variable	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Offers low cost/price product by attaining full capacity operations	10.40	37.853	.928	.985
Is under constant innovation and delivers new products and services to the market	10.72	37.088	.973	.981
Offers Quality product, value and services	10.63	35.925	.975	.981
Do have many product variations, wide selections, extended services and attributes	10.92	39.968	.966	.983
Develops time conserving systems as well as environmentally friendly products	10.40	37.801	.950	.983
Has established customer feedback collecting mechanism and timely integration of feedbacks	10.72	37.997	.940	.984
Cronbach's Alpha=0.986				

Source: Own Survey, 2016