



SCHOOL OF BUSINESS AND PUBLIC ADMINISTRATION
MASTERS OF BUSINESS ADMINISTRATION (MBA) PROGRAM

**Supply Chain Performance of selected leather Footwear firms
in Addis Ababa**

BY

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Advisor

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*A thesis submitted to the School of Graduate Studies of Addis Ababa University in
partial fulfillment of the requirements for the Degree of Masters of Business
Administration*

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ADDIS ABABA UNIVERSITY
COLLEGE OF MANAGEMENT, INFORMATION AND ECONOMIC SCIENCE
SCHOOL OF BUSINESS AND PUBLIC ADMINISTRATION
MASTERS OF BUSINESS ADMINISTRATION PROGRAM

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Hailemickael Deres

Approved by the Board of Examiners:

Advisor

Examiner

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Signature

Statement of Certification

This is to certify that Ato Hailemickael Deres has carried out his research work on the topic entitled Supply Chain performance of selected leather footwear firms in Addis Ababa.

The work is original in nature and is suitable for submission for the award of Master Degree in Business Administration (MBA).

Advisor: Dr Tufail Ahmad

Date: _____

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Statement of Declaration

I, Hailemickael Deres hereby declare that this study; Supply Chain Performance of selected leather footwear firms in Addis Ababa, I have carried out the present study independently with the guidance and support of the research advisor, Tufail Ahmad (PhD). The study has not been submitted for award of any Degree in this or any other institution. It is in partial fulfillment of the requirement of the Program Master Degree in Business Administration (MBA).

Hailemickael Deres Mekonnen

Date: _____

Abstract

Traditionally, organization views customers or suppliers as an entity in business rather than considering and persuading them for more potential in becoming a business partner. However, currently Supply Chain Management is identified as a strategic tool for firms to improve their performance and secure competitiveness.

This research identifies five aspects of SCM: supplier and customer relationship, internal operation, information sharing, information technology and supply chain performance. The survey was conducted 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 data related with firms SCM implementation was gathered through questionnaire from firm managers in charge of SCM responsibility. Thus, each response of a given respondents in their respective firm were added and divided to the number of respondents of that firm to get representative mean for each particular item. The calculation has been continued until the researcher finished computing a mean value for each item to each firms under study. The data obtained was analyzed using Descriptive statistics, and Analysis of Variance (ANOVA) was applied to compare the mean performance differences among surveyed firms.

The result shows that, there was significance performance differences of SCM among these Medium and Large footwear firms selected for the study. .

Key words: Supply Chain Management, Supply Chain Performance, Footwear Industry

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Acronym

- EDI-Electronic Data Interchange
- IO-Internal Operation
- IS-Information Sharing
- IT- Information Technology
- MLS- Medium and Large Size
- MTO- Made-to-Order
- MTS-Made-to-Stock
- SC- Supply Chain
- SCP- Supply Chain Performance
- SCM-Supply Chain Management

1. Introduction

1.1. Background of the study

Traditionally, organization views customers or suppliers as an entity in business rather than considering and persuading them for more potential in becoming a business partner. Beginning some four decades ago, organization started to view themselves as closely linked functions whose joint purpose was to serve and fulfill their customers need. This internal integration was often referred to as material logistic management or distribution management. Moreover, as Christopher (1998) stated, it is not actually individual companies that compete with each other nowadays; rather, the competition is between rival supply chains. The supply chains that add the most value of customers with the lowest cost in the chain make up the winning network of individual companies. As Ross (1998) added, today the new source of competition lies outside the walls of organizations, and is determined by how effectively companies link their operations with their Supply Chain partners such as suppliers, distributors, wholesalers, retailers and end customers. SCM offers a management philosophy to manage activities and integrate with downstream and upstream partners as well as firms' internal Supply Chain.

As companies are now seeking how to integrate decisions across supply chain functions, across geographically dispersed facilities, and across time, the facts based supply chain management is crucial. The essence of fact based supply chain management is integrated planning and control, which has three important dimensions. The first dimension is functional integration involving decisions about purchasing, manufacturing and distribution within the company and between the company and its supplier and customers. The second dimension is geographical integration of these function across physical facilities located on one or several continents. The third dimension is inter-temporal integration of strategic, tactical and operational supply chain decision. To put it simple, strategic planning and control focus on resource allocation and refinement, and operational planning and control are concerned with business execution (Shapiro, 2001).

Over the past decade, there has been an increasing emphasis on Supply Chain Management as a vehicle through which firms can achieve competitive advantage in markets (Cooper et al. 2001).

Supply Chain Management is the systemic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the Supply Chain as a whole (Mentzer et al. 2001).

Supply Chain Management, as the concept is now called, consists of the entire set of processes, procedure, the supporting institutions, and business practices that link buyers and sellers in a marketplace for effectively managing the flow of materials from suppliers to final customers. Many companies have successfully implemented supply chain concepts with spectacular results. Efficient supply chains have enabled these firms to compete better (Bagchi 2002).

A customer focused definition is given by Mentzer et al. (2009) Supply Chain strategies require a total systems view of the linkages in the chain that work together efficiently to create customer satisfaction at the end point of delivery to the consumer. As a consequence costs must be lowered throughout the chain by driving out unnecessary costs and focusing attention on adding value.

The footwear industry: the leather footwear sector in Ethiopia has great potential to enhance manufacturing and export production, and thereby to increase employment opportunities and reduce poverty. It has several competitive advantages in different areas. In the natural arena, Ethiopia is endowed with the largest livestock population in the whole of Africa, and in particular sheep and goatskins are of exceptional quality. Economically, the leather sector has been generating substantial foreign exchange earnings since it is Ethiopia's second export product of the country after coffee. From a social viewpoint, the sector offers substantial employment opportunities and will thus contribute to poverty alleviation. Institutionally, the leather sector is relatively more advanced (e.g. compared to the textile sector) (<http://www.addisportal.com>).

Thus, managing the Supply Chain in this business environment has a major impact on performance of all parties involved in the chain. In this thesis, different SCM perspective including Supply chain performance in selected leather footwear firms has been investigated.

1.2. Statement of the problem

Although, Supply Chain Management practice in our country is still in the infancy stages, there are small numbers of manufacturing companies integrating it to their organizational system. Furthermore, the footwear industry in particular is weak in its SCM practice. In addition, there are some challenges in the industry which resulted in reducing the quality and demand of products manufactured domestically. One of the problems is poor SCM practice of organizations in the industry.

In addition, the findings from other research were tempered by the limitations of the study, which was recommended future research. Those researches conducted previously were in other countries and in different sector of manufacturing industries which possesses completely different culture and development stage respectively. Thus, One could assume that the finding will be different in developed countries where SCM practice are more advanced (e.g. Japan, USA and Western countries) and under developed countries like Ethiopia.

Finally, the researcher decided to study Supply Chain (SC) performance of selected footwear firms in Addis Ababa, and the results should then be compared with the results of the existing studies, in order to help generalizations.

1.3. Research Construct

The existing literature shows many different perspectives of SCM practices. Those various perspectives suggest a multi-dimensionality of SCM that covers a set of activities and processes from upstream and downstream and firms internal operations. This is in line with Sohal et al (2007) that conceptualize SCM as three dimensions: intra-functional coordination, inter-functional coordination and inter-organizational coordination. Like other research in the area of SCM this research also used five aspects of SCM which are: Supplier and Customer Relationship, Information Sharing (IS), Internal Operation (IO), Information Technology (IT) and Supply Chain performance.

1.4. Objective of the Study

The major objective of this study is to explore the existence of performance differences in Supply Chain Management effort among footwear manufacturing firms in Addis Ababa.

Specifically the researcher needs:

1. To examine the extent of selected Medium and Large Size leather footwear firms in their Supply Chain Management practice.
2. To compare performance differences among selected MLS firms in their Supply Chain Management.

1.5. Justification

The researcher decided to investigate supply Chain Management practice because SCM is an issue in many industries as companies realize the importance of creating an integrated relationship with their suppliers and customers. Managing the SC has become a way of improving competitiveness by reducing uncertainty and improving service. In addition, SCM aids in the development and management of a coordinated flow of goods and services from the raw material stage to the final customer.

Moreover, although, Supply Chain Management will play a pivotal role in managing demand, reducing cost of operation, and improving the quality of products, the prevailing poor practice in managing the SC particularly in the footwear industry led the researcher to undertake this study.

1.6. Significance of the Study

The result of this study will give an insight to any individual who has interest on Supply Chain Management, if he or she needs to undertake further study on this area. In addition, it will show the current supply chain management practices of the selected footwear firms and their differences in Supply Chain (SC) performance. Moreover, it will contribute an empirical study to the area of research undertaken on SCM.

1.7. Scope of the Study

The existing literature shows many different perspectives of supply chain management practices. However, the researcher bounds the study on only five aspects (variables) of SCM, which are:

Supplier and Customer Relationship, Information Sharing, Internal Operation, Information Technology and Supply Chain performance.

In addition, the case firms are selected from Medium and Large Size leather footwear manufacturing firms in Addis Ababa which is the capital city of Ethiopia.

1.8. Limitation of the study

On one hand, the major limitation of this study was that, the emphasis has been given only to explore current SC performance of selected MLS footwear manufacturing firms and to compare the mean performance difference in SCM among the selected firms; no attempt was made to analyze interdependency of the variables selected for the study. In addition, the limited sample size that was applied to the study creates a challenge to generalize about the industry.

On the other hand, it was also a challenge to collect the questionnaire distributed for managers, and it takes more than 21 days to gather the questionnaires, because of many unknown reasons.

2 Literature Review

2.1 Supply Chain Management

In modern business environment characterized by ever increasing competition and economic globalization, manufacturers have been exploiting innovative technologies and strategies to achieve and sustain competitive advantage. Many organizations today are forced to increase their global market share in order to survive and sustain growth objectives. And this new and modern business environment needs partnership between organizations in the Supply Chain.

There are different definitions given to Supply chain Management. In her study, Pearson (1997) defines SCM as homogenous management concept. The overall objective of Supply Chain Management is to contribute to improvement in the company's bottom line or profitability. Related objectives include, reducing the costs mainly by reducing the inventory level and increasing the revenues by improving customer service through coordination and integration along the material flow, win-win relationships and end-customer focus.

Supply Chain Management as a management philosophy takes a system approach to viewing the Supply Chain as a single entity. This means that the partnership concept is extended in to a multi-firm effort to manage the flow of goods from suppliers to the ultimate customer. Each firm in a Supply Chain directly or indirectly affects the performance of other Supply Chain members, as well as the overall performance of the Supply Chain (Cooper et al. 1997).

As it has been agreed by many academicians as well as practitioners, Supply Chain Management (SCM) is an important issue facing many organizations worldwide. SCM is an important area that helps maximize competitiveness and profitability for the company as well as other Supply Chain (SC) members which integrate and coordinate across their whole extended network (Lambert and Cooper, 1998). They underlined that managing the SC has become a way of improving competitiveness by reducing uncertainty and enhancing customer service.

According to Mentzer et al. (2001) Supply Chain is defined as a set of three or more entities (organizations or individuals) directly involved in the upstream and downstream flows of products, services, finances and/or information from a source to a customer. Supply Chain of a company consists of an upstream supplier and downstream distribution channel. Depending on how complex the supply network is, Mentzer et al. has list down three types of Supply Chain:

1. Direct Supply Chain which consists of a company, a supplier, and a customer.
2. Extended Supply Chain which includes suppliers of immediate supplier as well as a customer of the immediate customer
3. Ultimate supply chain, which includes all the organization involved in all the upstream and downstream flows.

A Supply Chain can include a number of functional areas within a firm—such as production, distribution and marketing. The supply Chain also typically includes other firms—such as suppliers, transportation carriers, warehouses, and retailers as well as the end customers themselves (Chopra and Meindl 2001).

Although the industry and academia, have investigated the concept of SCM for the last decade, there is still no consistent definition of the concept. As a result, there is generally a lack of consistency in meaning and clarity across the diverse definition of SCM available in the literature.

The SC may include internal division of the company as well as external supplier that provide input to a focal company. A supplier for this company has its own set of suppliers that provide input (also called second tier suppliers). Finally it is concluded that SC is essentially a series of linked suppliers and customers until products reach the ultimate customer (Handfield 2002).

Dominica (2002) also claims that Supply Chain should actually be efficient and effective. It is not definition that matters for Dominica, but it is the efficiency and effectiveness of SCM. In this case, efficient means to minimize resource use to accomplish specific outcomes; and effective in terms of designing distribution channels. Efficiency is measured by delivery performance, product quality, backorders and inventory level, where as effectiveness is measured by service quality and service needs. Long term competitiveness therefore depends on how well the company meets the customer preferences in terms of service, cost, quality and flexibility, by designing the supply chain, which will be more effective and efficient than the competitors’.

According to Meixell and Shaw (2002) SCM is an approach to coordinating the functions and processes associated with the order fulfillment cycle, with the objective of delivering what the final customer wants at the time and place the customer desires it, in a manner that minimizes total costs for the organizations linked together in the chain.

According to Rahman and Ismael (2008) SCM offers organizations the approach to maintain their competitiveness in the global/world market and the approach has also been inspired the organizations to improve their quality control, preserving quality product, enhancing industrial networks and customer satisfaction. Hence, one of the key factors in upgrading competitiveness is considered to be increasing quality performance to a world-class standard, through SCM perhaps.

2.2. Supply Chain Management Benefit

Now a day, more than ever, manufacturer face an increasing pressure of customers' requirement in product customization, quality improvement and demand responsiveness. On the other hand, they need to reduce production costs, shorter lead time, and lower inventory to ensure profitability. In addition to helping to create an efficient, integrated company, SCM also plays a large part in reducing costs.

A study by the A.T. Kearney Management Consulting Company estimates that Supply Chain costs can represent more than eighty percent of the cost structure in a typical manufacturing company. These numbers indicate that even slight improvement in the process eventually can translate into millions of dollars on the bottom line. These costs include lost sales due to poor customer service or out of stock retail products. For every dollar of inventory in a system, there are one to two dollars of hidden supply chain costs: working capital costs, asset costs, delivery costs, write downs and so on. Leaner inventories free up a large amount of capital.¹

2.3. Supply Chain Management Processes Framework

There are several organizations trying to set cross-industry standard process such as Global Supply Chain Forum. (GSCF), SCOR (Supply Chain Operation Reference Model), CPFR (Collaborative planning, Forecasting and Replenishment), and Rosetta Net, which can help members of supply chain integrate efficiently.

¹ (<http://www.answers.com/topic/supply-chain-management>).

The following eight key SCM processes are included in the framework (Cooper et al. 1997):

1. Customer relationship management
2. Customer service management
3. Demand management
4. Order fulfillment
5. Manufacturing flow management
6. Supplier Relationship management
7. Product development and commercialization
8. Returns management

The eight key business processes run along the SC and cut across the supply firms and functional silos within each firm. Although, functional expertise remains in place, implementing SCM requires making a transition from a functional organization to one focused on business processes, first within a company and then across the companies in a supply chain.

SCM involves designing the supply chain network, planning the supply chain processes, and then executing the operation in a manner consistent with the overall strategy. Network configuration determines the number, location and function of each facility at each stage in the transformation process. The processes that drive SC performance include order processing (determining where and when the order will be produced and shipped), production planning (how many should be produced in each production period, how many subassemblies should be ordered to support the production plan), selecting and managing suppliers, product design and problem solving (Meixell et al, 2002).

The Supply Chain council developed a framework called Supply-Chain Operation Reference-model (SCOR). This process model is designed for effective communication among Supply Chain Partners. The scope of the SCOR model is defined as “from company’s suppliers supplier to company’s customers customer’ (Supply chain council, 2005). It is based on five distinct management processes as shown in Table 2.1.

Each of these processes is implemented in three level of detail. Level one defines the number of supply chains as well as what metrics will be used. Level two defines the planning and execution process in material flow. Level three defines the inputs, outputs, and flow of each transactional element (Lambert 2005).

Table 2.1 Management process framework developed by SCOR

SCOR process	Definition
Plan	Process that balance aggregate demand and supply to develop a course of action which best meets sourcing, production, and delivery requirement.
Source	Processes that procure goods and services to meet planned or actual demand
Make	Processes that transform a product to a finished states to meet planned or actual demand
Deliver	Process that provide finished goods and services to meet planned or actual demand, typically including order management, transportation management, and distribution management
Return	Processes associated with returning or receiving returned products to any reason. This process extends in to post-delivery customer support.

Source: Supply chain council SCOR version 7, 2005

2.4. Supply Chain Management in Manufacturing Industry

SCM is a concept that has originated and flourished in the manufacturing industry. The first signs of SCM were perceptible in the Just-In-Time delivery system as part of the Toyota Production System. This system aimed to regulate supplies to the Toyota motor factory just in the right - small - amount, just on the right time. The main goal was to decrease inventory drastically, and to regulate the suppliers' interaction with the production line more effectively.

After its emergence in the Japanese automotive industry as part of a production system, the conceptual evolution of SCM has resulted in an autonomous status of the concept in industrial management theory, and a distinct subject of scientific research, as discussed in literature on SCM (Such as, Cooper et al. 1997). Along with original SCM approaches, other management concepts (example, value chain, extended enterprise) have been influencing the conceptual evolution towards the present understanding of SCM.

There are different perspectives of Supply Chain Management investigated by different researchers. However, they have one thing in common, which is all of the perspectives suggest a multi-dimensionality of SCM that covers set of activities and processes from upstream and downstream and firms internal operations. In line with Sohal et al. (2007), this study considered

five aspects of SCM, which are: Supplier and Customer Relationship, Information Sharing, Internal Operation, Information Technology and Supply Chain performance. Moreover, SC performance in particular consists of measure such as, delivery performance, quality, cost reduction and responsiveness. The discussion regarding SCM perspectives selected by the researcher are provided as follows.

2.4.1. Supplier and Customer Relationship

The buyer-supplier relationship is a growing significant part in international business. Doubtless, managing a good buyer-supplier relationship is capable of appending the competitive ability within SCM.

At the bare minimum, we believe that technology is an enabler that facilitates a firm's ability to partner with its suppliers and its customers. It is apparent from these findings that although we espouse the benefits of SCM and sing the virtues of closer ties throughout levels of the SC; the results suggest that business has not yet fully operationalized the concept of Supply Chain Management. It appears that buyers tend to be reluctant players and are far more skeptical about the benefits afforded through such close integration.

The road from open market negotiations to co-operation to co-ordination and to collaboration is a long one and should not be traveled by each and every buyer-seller relationship. One must select both partners and supply chain strategies carefully. Coordination and collaboration are different; require different levels of trust and commitment; and, often lead to different outcomes (Spekman et al 1998).

Geiger and Dooley (1998) stated that, strategic partnerships with suppliers are important for a successful supply chain. As Companies have started to limit the number of suppliers with whom they do business by implementing vendor review programs, buyers use these programs to find suppliers with operational excellence. In addition, they claimed that, increasing demands on customer service levels are driving partnerships with vendors and suppliers. The ability to serve customers with higher levels of service, including faster delivery of products, is an important concept that results in partnering. Having a close relationship with a supplier or vendor results in common trust and enables firms to achieve the desired customer service levels.

Consequently, as Mentzer et al. (2001) asserted, risk and reward sharing helps maintain a focus on the long-term benefit and cooperation among the SC members. Cooperation on all levels among all processes in the Supply Chain is needed to reduce inventories and pursue Supply Chain-Wide cost effectiveness.

As the study conducted by Bagachi and Larsen (2003) revealed, some firms were not yet fully convinced of the need for close collaboration with suppliers. While these managers had no objection to sharing some logistics and production plan related data, they were not quite ready (or fully convinced of the need) to provide suppliers access to sensitive and proprietary data pertaining to core competence areas. Thus, collaboration at the design stage did not include suppliers as part of basic design teams. Rather, in rare instances when collaboration prior to production took place, it was quite often restricted to sharing broad ideas about future products and technology and the scale of future production of new products.

The buyer-supplier relationship is a growing significant part in international business. Doubtless, managing a good buyer-supplier relationship is capable of appending the competitive ability within SCM. The long term relationship requires trust and commitment between the organization and their suppliers. Prior to a direct entry to SCM approach, Toyota used to select the key suppliers who operate their global business in direct line replenishment agreements and fast response policies. They benefited from the commitment and trust in the long-term relationship (Sun and Tsai 2007).

Sohal et al. (2007) concluded that, supplier and customer relationship is defined as a set of firm's activities in managing its relationship with customer and suppliers to improve customer satisfaction and synchronize Supply Chain activities. As they suggested, supplier involvement in product development allows firms to make better use of their suppliers' capabilities and technology to deliver competitive products. In addition, as they pointed out that, close customer relationship allows companies to be more responsive in fulfilling customers' demand and improving customer satisfaction by proactively seeking customers' needs and requirement.

As Bokor (2008) argued, even though, the advantage of building strong relationship with customers are inevitable, customer data/relationship management is often not regarded as important business factor (yet). Companies tend to excel in cost efficient supply management and manufacturing processes rather than responding to customer needs quicker and better.

Another problem is the poor quality of available customer data. At the same time supply chains should be governed by reliable demand information.

Rebêlo (2008), find out more important issue of relationship, according to his study result, many organizations SCM is a key factor for their business model/overall strategy for imports (bulk of their businesses). This is not valid for their relationship with local suppliers, though. Although they used to say they aim longer term relationship with their local suppliers, they tend to behave very reactively to any real closer integration with their local suppliers.

Tai (2010) indicated in his study that, intensifying competition in the manufacturing sector has raised the importance of fostering enterprise customers' relationship intention and nurture enduring relationships. Enterprise customers with high relationship intention are more profitable because they are more familiar with a supplier's processes and often willing to tell others about their positive experience with the supplier.

2.4.2. Internal Operation

In addition to upstream and downstream integration, SCM also emphasizes the importance of both effectiveness and efficiency of firm's internal operation on its performance. A company's internal operations are the basis for developing a competitive advantage before embarking in to external integration. Poor internal operations can lead to failure in coordinating with external partners. Sohal et al. (2001) reveal that, internal operations refer to all activities related to production systems and internal logistics flow.

According to Tan (2002), integrating the purchasing and logistics process with other key corporate processes creates a closely linked set of manufacturing and distribution processes. It allows firms to deliver products and services to both internal and external customers in a more timely and effective manner.

As Sengupta et al. (2006) revealed that, when a company increases the level of product and service customization (Product) relative to its competitors, the operational performance will be improved. The Product factor includes strategies related to design, delivery and customization of products and services. As they argued, similarly, the level of product and service customization relative to their competitors does not seem to affect the performance of manufacturing companies. With regard to operational performance, a higher degree of product customization

relative to their competitors is associated with better operational results. Presumably, in order to customize their offerings in the marketplace, service companies will have been in communication with their customers about the nature, quantity and time of demand. However, the higher degree of product and service customization is also associated with lower financial performance.

Sohal et al. (2007) stated that, it is important for firms to improve their internal integration before external integration (e.g. strategic supplier relationship). This study is further strengthened by Chong et al. (2010). According to Chong et al. the most important SCM practice in terms of affecting innovation and organizational performance is internal operation. Information sharing and IT have the second and third highest influences on organizational and innovation performance. Strategic supplier partnership and customer relationship have a lower contribution compared to other SCM practices in this study. Nevertheless, these practices cannot be ignored given that they are also found to be significant. Firms should move towards having better strategic supplier relationships and customer relationships

2.4.3. Information Sharing

Information sharing is an important aspect in achieving seamless integration in a supply chain. Cross functional integration and inter organizational integration requires the visibility of information across the supply chain. Geiger and Dooley (1998) also believed that information is crucial and drives the entire supply chain system.

Spekman et al. (1998) revealed by their study that, there is a reluctance to share key information among partners; many of these fears subside if partners share similar values and a common vision. Such information sharing heightens the alignment between partners such that effective supply chains share learning among partners rather than worry about knowledge expropriation.

Information sharing is necessary to reduce uncertainty and lower inventory levels. Many manufacturing organizations stressed that the willingness to share information must extend within the firm and across the supply chain (suppliers and buyers). Communication within the company is important to decide who the customer is and what the company's goals are and to make sure that these two match. In addition they try to suggest which information to be shared such as: Communicating the following types of information is essential for a successful

relationship: product development (new products and improvements), costs, demand schedules (including point of sale data), material quantities, and production schedules. It is also crucial to get information about end-use consumers back through the supply chain to manufacturers.

Poor information sharing between partners in a supply chain will result in poor coordination that will lead to many serious problems such as, high inventory levels, in accurate forecast, low utilization and high production costs (Lee and Whang 2000).

Basnet et al (2000) stated that, manufacturers are following some of the SCM concepts, chiefly where it impacts the ability to meet delivery dates. But there has not been much progress when it comes to more advanced ideas such as supply chain teams, or information sharing, or use of EDI, etc. According to Basnet et al. SCM requires quick movement of materials and information and close communication. Even though the flow of information and communications can be greatly speeded through the latest telecommunication technologies, the delay in the physical movement of materials is going to continue to be a barrier to SCM. Information sharing with the suppliers, relocating closer to suppliers/customers, or involving all members of a firm's supply chain in product/service/marketing plans does not seem to be high on the agenda.

As Mentzer et al. (2001), one of the most important aspects of an integrated behavior is also mutually sharing of information among members of the supply chain. This is particularly valuable for the planning and monitoring process. Open sharing of information such as inventory levels, forecasts, sales promotion strategies, marketing strategies, reduces uncertainty and increases performance. It is also argued by Lee (2002) that information sharing is highly considered as the way to reduce demand uncertainty.

The type of shared information can vary from strategic to operational information and from consumer and market information to logistics information (Huang et al 2003).

Although some managers acknowledged the desirability of efficient information transfer among supply chain partners, and there are notable examples of information systems integration at selected interfaces, the initiatives required to integrate information systems of all supply chain partners are not yet discernible. Some managers remain unconvinced about the true value of such links and providing remote access to sensitive business information to suppliers and customers. Many fear potential loss of proprietary information and loss of control (Bagchi and Larsen 2003).

According to Sengupta et al. (2006) as a company utilizes higher levels of information sharing relative to its competitors the operational performance will improve. The SHARE factor includes strategies such as sharing various information including forecasts, promotions and capacity levels across the supply chain. They also argued that, manufacturing company increases its level of hedging (Hedge), the company's operational performance metric improves. The Hedge factor includes strategies such as holding finished goods inventory, reserve capacity and multiple suppliers. Therefore, if a manufacturing organization increases its application of these types of practices, it's associated operational performance with respect to speed, delivery and quality will increase. In addition he stated that by emphasizing the level of importance on the supplier portion of the supply chains, manufacturing organizations will improve their financial performance.

Fawcett et al. (2007) discussed two distinct dimensions to information sharing – connectivity and willingness. Both dimensions are found to impact operational performance and to be critical to the development of a real information sharing capability. Connectivity creates the capability to share information. However, people make the decisions regarding what will be shared and when. The old saying, “information is power” holds true in today's business world. As a result, many individuals are unwilling to share information that they perceive may place their organizations at a competitive disadvantage. A company's willingness to share information – that is, its openness to sharing relevant information honestly and frequently – ultimately determines the extent of sharing that takes place. They also argued that, lack of willingness kept managers from obtaining the information they needed to make more collaborative SC decisions.

There are also barriers to information; some of them are mentioned by Fawcett et al. (2007). The major barrier is found in systems incompatibility. It is not unheard of for a company to receive customer orders through EDI only to end up manually reentering the information into its own systems. This happens because the systems do not talk to each other. Incompatibility is particularly painful among companies involved in mergers and acquisitions. The final barrier can be stated simply, “Managers do not understand the willingness dimension of information sharing!” As a result, they do not invest in a culture conducive to sharing information. Thus, it is not surprising that many managers are simply unwilling to share valued information.

Fawcett et al. (2007) finally concluded that, viewed as power, information is tightly controlled, especially in the absence of trusting relationships. This reality not only impedes Supply Chain collaboration but also makes the implementation of advanced information systems more difficult.

Cook et al (2009) find out that, the effect of internet on SCM has been recognized as an important topic of research with information flows, e-procurement and e-fulfillment being the main areas of research. Therefore, it is important to analyze this factor's unique role as a supply chain practice in affecting organizational performance. Furthermore, Cook et al., (2009) argued that Information sharing (Share) with supply chain partners has been an area of focus in SCM research primarily due to the perceived benefits of enhanced coordination to operational issues such as inventory, forecasting, orders and production plan issues.

According to Madlberger (2009) first, information sharing seems to be a voluntary activity and largely independent from external and technical conditions. If a firm wishes to share information with others, it has to be aware that its trading partners will only agree if they are internally predestinated for it and if they sure to benefit from it. This implies that a firm may put much effort on convincing its trading partners to share information. As Madlberger clearly point out, the impact of perceived benefits is confirmed again in this study. Firms are ready to share information if they are sure that they will benefit from this decision. If the benefits of information sharing, as shown by numerous mathematical simulations, can be clearly communicated to practice and if first-movers can demonstrate the benefits of their information sharing activities, other firms will be likely to start information sharing.

According to Gotzamani et al. (2010), Regarding the 'information sharing/communication the most commonly used practices are the timely feedback of supplier's mistakes, supplier's knowledge of its product specifications and supplier's knowledge of its product use in buyer's final product. The least commonly used practice in this category, with a long distance from all others, is the use of electronic data interchange with the supplier. These results reveal buyer's positive attitude towards supplier quality awareness and a somewhat initial, but very important, implementation of open communication with suppliers.

As Tai (2010) concluded, providing customers with valuable information sharing services represents a means of building relationships that can be leveraged to foster customer

commitment toward the information service provider, and this relationship commitment can serve as the foundation for increased customer loyalty intention. As he recommended, information sharing not only can be used to support supply chain activities (i.e., facilitating supply chain management), but also can be used to support marketing activities (i.e., enhancing customer relationships).

2.4.4. Information Technology

Geiger and Dooley (1998) stated that, “leading edge” companies stated that EDI (Electronic Data Interchange) is an essential IT tool and will become increasingly important, particularly for transmitting and verifying orders. Most of these companies require their suppliers to use EDI and will help them to implement the system. The “leading edge” companies stated that their suppliers must be able to electronically link into all aspects of the company. IT compatibility is essential to the success of this link. The largest obstacle to complete adoption of IT systems in a supply chain may be the incompatibility of systems. This is because companies use several different software packages, and these may not be compatible with those buyers and suppliers use. For example, one company has several computers dedicated to EDI linkages with buyers and suppliers. Some companies must have different computers for each customer because none of them are using the same systems.

According to Basnet et al. (2000), there is also very little thrust on information technology related activities. The newer concepts of supply chain integration, enabling SCM through Information Technology are not rated highly by many manufacturing firms.

As Bagchi and Larsen (2003) pointed out, the scenario regarding IT integration is not much different. While some companies have provided customers with IT integration via the Internet, integration with suppliers is still in rudimentary stages. SMEs (Small and Medium Enterprises) have certainly been in the forefront in experimenting with IT integration and some have accomplished significant advantages through closer working relationships with some key customers and suppliers. Larger multinationals have been somewhat slower in information technology adaptation and integration with suppliers. As they further strengthened, every partner was not equally well prepared to adopt the new IT tools and systems. In addition, weak supply chain leadership failed to energize the members to acquire new technology, resulting in uneven

integration. Sometimes supply chain partners used multiple IT platforms, thus slowing down the information systems integration among them, although this was not cited as an insurmountable problem.

Sengupta et al. (2006) also claim that, some factors previously thought to have a significant influence on organizational performance may no longer be significant as a means to differentiate an organization from its competitors. Two factors, INTERNET and Supply Network are interesting to note in this regard. For example, it is now common for manufacturing organizations to use the Internet to conduct many types of business transactions. However, this application of technology does not appear to explain either operational or financial performance outcomes.

Fawcett et al. (2007) revealed that, most managers credit new Information Technologies for propelling SCM to the forefront of strategic thinking and finally concluded with the dilemma, that they cop up with IT technology; the good news: companies are intently focused on upgrading their information-sharing capabilities. They view connective technologies as attractive and are actively investing in them. The bad news: companies struggle to implement and leverage technologies. Technology is too often viewed as the answer rather than as an enabler.

Bokor (2008) argued that, an effective demand management in SC requires the application of up-to- date Information Technologies corresponding to the criteria identified before. In addition, he strongly believed that, the best practice of SCM methods can be implemented in an effective way only if a powerful IT background serving them can be put into operation. In addition, Bokor also try to elaborate the challenges encountered while implementing IT. Supply chains are facing several business challenges influencing the functional and technological configuration of IT systems. The most important of them is enhancing the response mechanism (to customer demand or environmental changes, etc.). It requires seamless integration of design, production, commercialization and forwarding. So the consolidation of diverse processes and systems is critical from the point of view of operational efficiency. Forming a robust IT strategy for supply chains and their participating partners may be a real solution to these challenges. A robust IT strategy determines the mix of applications that best serve the information needs as there is no one single solution that would fit all organizations. Based on robust strategies so called service oriented IT architectures (SOA) are preferred in case of today's supply chains. He also

confirmed that another problem to be solved is information security. Shared data bases enable the SC partners to access each other's operational or even strategic information. It is necessary for planning and monitoring cross organizational logistics processes. Nevertheless such kind of open systems shall be equipped also by regulation mechanisms governing access rights. IT is a core element of the practical implementation of the management methodologies. Open information architectures seem the most suitable to response the functional requirements set by SC operators.

According to Mentzer & Gundlach (2009), the application of Information Technology to improve productivity is the focus of considerable scholarship ongoing in both marketing and SCM. However, the link between investment in IT and performance has not been firmly established in the literature, leading to what some have labeled the Information Technology productivity paradox.

As Gotzamani et al. (2010) finally concluded, more advanced forms of information sharing and communication, such as the use of many inter-firm contacts and data interchange via modern information technologies, such as EDI, are more important but very limited.

2.4.5. Supply Chain performance

According to Hausman (2005) Supply Chain Performance refers to the extent to which a supply chain meets end-customer requirements, and contains operational efficiencies which can deliver that performance. This definition implies that supply chain performance measures effectiveness and efficiency by how well these two goals are met. Different studies conducted under SCM, measured supply chain performance by four dimensions: (1) time-based performance indicates the extent to which a supply chain is improving in speed and responsiveness, (2) reliability defines the extent to which a supply chain is performing promised activities and services dependably and accurately, (3) supplier performance measures the overall suppliers' tangible and intangible outcomes including product quality, reliable services and dependable relationship and (4) cost performance refers to the effectiveness in managing costs associated with operating the supply chain. Each of these four aspects captures the effectiveness and efficiency of a supply chain and reflects the inter-organizational characteristics of supply chain performance measurement.

Firms wishing to do well in product quality should focus on: determining customers' future needs, aiding suppliers to increase their JIT capability, creating a compatible information system, and participating in the sourcing decisions of suppliers (Basnet et al. 2000). To improve the competitive position, firms would do well to emphasize determining customers' future needs, creating a greater level of trust among supply chain members, communicating the firm's future strategic needs, creating a compatible information system, communicating customers' future strategic needs, and participating in the sourcing decisions of suppliers. Finally, they arrived at a conclusion that, firms need to realize they can compete more effectively with larger overseas corporations by forming strategic alliance partnerships with their suppliers and customers, instead of competing individually.

Basnet et al. (2000) argued that, we see that even though most businesses are aware of the SCM philosophy, their actual activities in this direction are very limited. Mostly they appear to be concerned with on-time delivery: from the immediate suppliers, and to the immediate customers. Communication is emphasized to achieve this goal.

Tan (2002) recommended that, to improve overall competitive position, firms should focus on determining customers' future needs, reducing response time, on-time deliveries, aiding suppliers to increase their JIT (Just In-Time) capability, participating in the sourcing decisions of suppliers, and other practices that showed a significant relationship. He further reinforced that, while information sharing enhances a firm's performance, the lack of information capability adversely affected the overall competitive position. Once again, this is consistent with the overall product quality model. Advanced Information Technology is needed to support an efficient SCM network for proper information exchange and provide useful data required for integrated performance of procurement operations, logistics, and manufacturing supports.

Chow et al. (2004) find out that, the evidences presented in this study reinforce the notion that effective SCM would enable enterprises to become competitive in the new economy and significantly improve their performance. Supply Chain competence has positive influence on organizational performance. Managers need to focus attention on developing such competencies. Sweeney et al. (2004) suggested that, even though, the adoption of SCM in many developing countries are not very high, those firms who have made some progress in SCM practices have benefited from SCM in regard to their performance, especially in regard to customer service.

Tracey et al. (2005) also measure performance through four separate dimensions including perceived value, customer loyalty, market performance and financial performance.

High profit-generated companies” gives high emphasis on customer relations practices, technology and innovation, lean system, followed by quality information exchange, postponement concept, strategic supplier partnership and lastly information sharing (Sivabrovnvatan2006).

Whatever the measure applied in supply chain performance, as Agus and Noor (2007) finally recommended, superior adoption in SCM practice does have an impact on performances. The findings show that SCM is positively related to supply chain flexibility, supply chain integration and profitability, which reinforces several empirical studies in the supply chain. In addition, Dubey (2007) identified, Cost, time, flexibility and Quality as major performance indicators for selected Logistics activities & Supply Chain Management. Sohal et al. (2007) also supported other studies conducted under SCM and performance. Furthermore, they presented the relationship between SCM practice and performance as follows:

Lead Time Minimization- there is significant differences in the mean lead time minimization performance between low and high level of SCM practice. The higher significant level to affect lead time was IT followed by information sharing, internal operation practice and supplier and customer relation.

Lead time typically comprises of two components- order lead time (required time to produce and ship a product) and information lead-time (required time to process an order). It appeared that training practices facilitate the improvement of lead-time performance. Increasing the skills of employee in production and SCM would improve operational efficiency and the effectiveness of planning process. Operational efficiency will lead to reduction in order lead-time while increased SCM planning effectiveness will increase the speed of order processing.

Information Sharing helps companies to cut lead-time by increasing their forecast accuracy, efficient flow of information throughout the supply chain and improve the effectiveness of the management of inventory and production planning process. Information sharing is highly enabled by IT that also influence lead-time through better order processing.

Supplier and customer relation- which is facilitated by IT and information sharing enable better supply chain coordination which in turn leads to reduced variability including lead-time.

Inventory Turnover- IT, Internal Operations, Customer and Supplier Relationship and Information Sharing significantly influenced inventory turnover performance. According to Sohal et al, to achieve higher inventory turnover companies need to improve their internal efficiency through elimination of non-value added activities and excessive inventories. This can be achieved by effectively implementing IT in all operational activities. In addition, companies also need to go beyond their internal operations to work closely with their external counterparts both upstream and downstream in their supply chain. Close coordination amongst members of the supply chain is facilitated by high level of information sharing.

Avoidance of Product Reject/Return- In terms of avoidance of product reject/return, the information sharing significantly influenced the mean of this performance measure. The finding made by Sohal et al., shows that training is an important factor to increase product quality and to increase the avoidance of product reject. Information sharing allows the company to better predict their customer demand.

Cost Reduction- information sharing results in cost reduction through reduced manufacturing cost, logistics cost and inventory costs. It is also expected that cost reduction was correlated with internal operation and IT. Cost reduction requires improvement of internal operations and other various activities along the supply chain.

Effectiveness in Meeting Customers' Requirements- the analysis made by Sohal et al. reveals that companies' effectiveness in meeting customers' requirements was significantly differentiated by the level of information sharing and supplier and customer relationship. Understanding customers' demand enables companies to segment their customers to be able to deliver highly customized products or services. According to Sohal et al. translating customers' requirements in to production and services requires companies to work closely with their partners both upstream and downstream along their supply chain.

As cited by Cook et al. (2009), although prior research suggests there is a direct link between the level of adoption of SCM practices and organizational performance, there have been various

definitions of organizational performance, with some studies emphasizing operational measures, while others stressing financial measures. Many studies have selected a combination of pertinent operational and financial measures to reflect overall organizational performance.

Wu et al. (2011) reported that, there is a positive relationship between “information sharing” and “supply chain performance”. Results showed that, enterprises usually use information technologies to enhance information sharing with upstream and downstream firms. Through in-depth and extensive information sharing, they can effectively increase return on investment, inventory turnover rate, and profits. Moreover, information sharing also facilitates external transactions, so that information circulation efficiency between partners in the supply chain can be boosted. They also find out the relationship between information sharing and partnership. As the result shows, there is a positive relationship between “information sharing” and “partner relationship management”. Results showed that, complete and instantaneous information sharing can help an enterprise set up supply-demand plans with its partners. Moreover, through high-efficiency information sharing, a closer partner relationship can be developed. Such tie will increase both parties’ intention to engage in long-term cooperation on supporting each other and resource integration. In addition to this direct effect, as shown in the proposed path diagram, “information sharing” also has positive influence on “supply chain management” through “partner relationship management.

As Wu et al. finally concluded, there is a positive relationship between “partner relationship management” and “supply chain performance”. Results showed that in the current industries, supply chains are no longer controlled by a single organization. Enterprises need to be focused on their special areas and resources and outsource tasks not covered by their core competence to their partners. All parties of a partnership can thus make use of and maximize their advantages. If enterprises can collaborate and set up a close relationship with partners in the supply chain, they can certainly enhance their competitive advantage and also the overall performance of the supply chain.

3 Methodology

The research strategy followed by the researcher was a case approach, which was conducted on five Medium and Large size leather footwear manufacturing firms located in Addis Ababa. The instrument in the form of a questionnaire was designed based on the constructs previously described. Respondents were asked to indicate, using a five-point Likert scale (1 = very low, 3=average and 5 = very high), the extent of the 42 practices in their firm's SCM efforts. In line with previous research in the field of SCM, this study also measures firms' supply chain performance using the respondent's perception of performance in relation to major industry competitors.

To elicit information on SC performance variable in particular, respondents were asked to indicate, using a similar five-point Likert scale, their company's Supply Chain performance relative to that of major industry competitors in terms of overall product quality, delivery performance, cost reduction and responsiveness. Some other questions including demographics information were also presented in a questionnaire.

3.1. Sample, Population and Participant

The total population size was 12 Large and Medium size footwear manufacturing organizations located in Addis Ababa who produce and deliver leather shoes to customers in domestic as well as export market. Among these, five cases- Kangaroo shoe factory, Anbassa Shoe Share Company, Ramsie Shoe Company, Peacock Shoe Factory and Ok Jamaica shoe factory - are randomly selected by the researcher for this study. In this study the researcher tried to achieve reliable data by finding respondents who were well informed about the topics asked in their respective organizations. The target respondents within each company were managers whose work directly affects Supply Chain Management Practice. Thus, the survey instrument has been given to 45 middle line managers responsible for supply chain management in their organizations- including, operation managers, purchasing and supply managers, marketing managers, Information System officers and inventory managers. 9 questionnaires to each organization were distributed. Middle-line managers were chosen for this study because they are the executors of strategic decisions. They effectively implement supply chain practices in a firm or organization. They also interact with top management in laying out the supply chain plans.

In terms of response rate, 33 out of 45 (Kangaroo 8, Ok Jamaica 6, Anbessa 6, Peacock 7, and Ramsie 6) respondents returned the questionnaire back with full answer (73.3% response rate); it was considered as a high response rate.

3.2. Data Source, Data Collection Instrument and Material

Primary data was collected based on the perspective described in the main construct. Questionnaire was designed to collect information from middle level managers to understand the supply chain performance of each MLS footwear manufacturing firm selected for the study.

A set of questions on each aspects of the SCM were derived from extensive literature as well as the researcher's discussion with Supply Chain professionals. The questionnaire consists of two set of questions; the first section contains demographic questions such as, number of employees and position of respondent in their organization. The second section elicits the performance of selected firms in each perspective of supply chain management.

The questionnaire was first given to the administration office of the respective organizations and through these offices; it was distributed to those managers whose works directly affect SCM practices. Respondents were asked to answer all of the questions using Likert scale ranging from 1 to 5, where; 1 is the worst and 5 is best, except demographic questions. Several demographic questions were also included to gain insight of the respondents' operation.

3.3. Data Analysis, Validity and Reliability

Since the questions are derived from an extensive literature review the measures are generally considered to have content validity.

The data obtained through questionnaire is presented and analyzed using descriptive statistics. For the purpose of descriptive analysis, for each and every item the mean value was calculated for each firm under study. The mean value was computed by adding the response of managers within each firm and dividing it by the number of the respondents in that firm. Thus, the result has been considered as the performance of a given firm in that particular practice.

In addition, Analysis of Variance (ANOVA) was applied to compare the mean SCM Performance differences among the case firms. In the analysis, the term group was used to represent firm. Thus, five groups indicate five firms selected for the study. In the analysis of

variance, respondents in each firms were included to obtain degree of freedom within group (firm) since without which, the result has no meaning.

In the table ‘ANOVA’, the variation (Sum Of Squares), the degrees of freedom (df), and the variance (Mean Square) are given for the within and the between firms, as well as the F value (F) and the significance of the F (Sig.). Significance level indicates whether the null hypothesis – there is no mean difference in supply chain performance among selected firms – has to be rejected or accepted. While the table has been attached in the annex, the F-value and significance level was used for the decision making purpose– to reject or accept hypothesis.

The *F*-test was used to draw inferences about differences among the firms supply chain performance means. When this is not significant, we may conclude that there is no evidence to say, the performance of firms is different in their respective supply chain.

Alpha was determined by the researcher to be 5% ($\alpha = 0.05$), the researcher declared that events with probabilities under 5% (i.e., $p < \alpha$) are considered rare. These events are not likely to occur by chance and indicate that the null hypothesis (there is no difference among case firms in their supply chain performance) is false; that is, the means performance of firms are not equal. When we reject the null hypothesis, there is, at most, a 5% chance that this decision will be wrong. The researcher has retained (accepted) the null hypothesis when $p > \alpha$ ($P > 0.05$), as there is not enough evidence in the data to reject it.

For item reliability, Cronbach’s alpha test was calculated to all items arranged in a five point Likert scale, and the test result shows the reliability of the items. Generally, Cronbach’s alpha of $C=0.932$ was obtained, thus, the items are considered reliable. However, the reliability of each variable is different, and it is presented as follows.

Table 3.1: Cronbach’s alpha result

Variables	Cronbach’s alpha result
Customer and supplier relationship practice	0.648
Internal operation Practice	0.913
Information sharing practice	0.825
Information Technology practice	0.775
Supply Chain Performance	0.641

4 Result and Discussion

This chapter presented the data that have been gathered through questionnaire and convert it in to information after analysis. Firstly, each firms supply chain management performance including demographic information, were presented and analyzed using descriptive statistics. Then, the mean performance difference among case firms were analyzed using Analysis of variance (ANOVA).

4.1. Presentation and Analysis of demographic data

Organizations selected for the study were Medium and Large Size (MLS) leather footwear manufacturing firms who produce and sell leather footwear products to the local as well as to international market. Products provided by the selected firms to domestic and foreign customers are: Men's shoes, Women's shoes, Sport shoes, Children's shoe, Sandals and Military shoe. In addition, the factories purchase raw materials as well as semi-finished goods from domestic as well as foreign vendors. The raw materials and components supplied by suppliers are: leather, foam and adhesive, shoe packet, inside board, synthetic, liming, foam sole material, insole material and different shoe material.

The following table shows, the profile of selected footwear firms under study with respective of the number of full time employees that they have employed as a permanent and contract workers. With regard to number of full time employees, Anbessa shoe Share Company has 850 employees, while Kangaroo and Peacock shoe factories have approximately 350 workers each. In addition, OK Jamaica and Ramsey Shoe Share factory approximately have 150 employees each.

Table 4.1: The number of full time employees

Description	Number of Employees
Anbessa Shoe share company	850
Kangaroo Shoe factory	350
Peacock Shoe Share company	350
Ok Jamaica Shoe factory	150
Ramsey Shoe factory	150

Table 4.2: The position of respondents in their respective organizations

No	Position of respondents in their organization	No of respondents	Anbessa	Kangaroo	Ok Jamaica	Peacock	Ramsie	%
1.	Operation division/ planning managers	8	2	1	1	2	2	24.24 %
2.	Marketing managers	6	1	2	1	2		18.18 %
3.	Purchasing managers	8	1	2	2		3	24.24 %
4.	Management Information system officers	4		1	1	2		12.12 %
5.	Inventory managers	5	1	2		1	1	15.2 %
6.	Information Sharing officers	2	1		1			6%
	Total	33	6	8	6	7	6	100%

In terms of the position of respondents in their respective organizations, 8 respondents which means 24.24% were Operation managers, from these, Anbessa, Peacock and Ramsie were contributed 2 respondents each, while Ok Jamaica and Kangaroo have represented by only one operation manager each. There were also equally 8 purchasing manager which means 24.24%. Where, 3 purchasing managers were from Ramsie, while kangaroo and Ok Jamaica contributed 2 respondents each. However, only one purchasing manager was from Anbessa. In addition, the percentage of marketing managers were 18.18% or 6 respondents, which was constituted from Peacock and Kangaroo have got 2 respondents each in marketing position and Anbessa and Jamaica have been represented by one marketing manager each. In addition, inventory managers were 15.2%. While 2 respondents were from Kangaroo and Anbessa, Peacock and Ramsie have represented by only one inventory mangers each. There were also 12.12% of Management

Information System officers, of these, Peacock (2), Ok Jamaica (1) and Kangaroo (1); while only 6% of respondents were Information Sharing officers, one from Anbessa and one from Jamaica.

4.2. Supply Chain Management Profile

With respect to Supply Chain Management experience, respondents were asked to select one of the alternatives, which represent their organizations SCM practices from the questions arranged in five point Likert scale method, where, 1 is the worst and 5 is best. For the purpose of the analysis three (average) was used as a cut-off point. Where, more than three is considered as better while less than three was considered as low experience of the firms which needs improvement and management concern. In addition, three (average level) was also considered by the researcher as an indication of the area which needs some improvement. There were two assumption of the researcher that leads to this generalization; the first one was respondents often prefer to select the average level in order to reduce the time that they will spend filling the questionnaire, although their experience in the area requested was low level. The second reason was average level by itself is not adequate to show the full performance of these firms in the area of SCM and it is considered as the gap to be addressed.

4.2.1. Customer and Supplier relation

The following table shows surveyed firms progress in their customer and supplier relationship.

Table 4.3: Strictness of customer, delivery in-full and on-time practice and cooperativeness with customer

CUSTOMER AND SUPPLIER RELATION (CSR 1)		N	Mean	Std. Dev	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
1) the strictness of major customers delivery fulfillment requirements	Anbessa	6	3.00	0.00	0.000	3.00	3.00
	Kangaroo	8	3.25	0.463	0.164	2.86	3.64
	Jamaica	6	3.50	0.548	0.224	2.93	4.07
	peacock	7	3.57	0.976	0.369	2.67	4.47
	Ramsie	6	3.00	0.000	0.000	3.00	3.00
	Total	33	3.27	0.574	0.100	3.07	3.48
2)level of compliance with major customers delivery in full requirement	Anbessa	6	3.00	0.000	0.000	3.00	3.00
	Kangaroo	8	2.63	0.518	0.183	2.19	3.06
	Jamaica	6	3.50	0.548	0.224	2.93	4.07
	Peacock	7	3.86	0.690	0.261	3.22	4.50
	Ramsie	6	3.00	0.000	0.000	3.00	3.00
	Total	33	3.18	0.635	0.111	2.96	3.41
3)level of compliance with major customers delivery on-time requirement	Anbessa	6	3.83	0.408	0.167	3.40	4.26
	Kangaroo	8	2.75	0.463	0.164	2.36	3.14
	Jamaica	6	3.00	0.000	0.000	3.00	3.00
	Peacock	7	4.00	1.000	0.378	3.08	4.92
	Ramsie	6	3.50	0.548	0.224	2.93	4.07
	Total	33	3.39	0.747	0.130	3.13	3.66
4)the level of cooperativeness in your relationship with major customer	Anbessa	6	4.00	0.000	0.000	4.00	4.00
	Kangaroo	8	3.50	0.926	0.327	2.73	4.27
	Jamaica	6	4.67	0.516	0.211	4.12	5.21
	Peacock	7	4.29	1.113	0.421	3.26	5.31
	Ramsie	6	4.17	0.753	0.307	3.38	4.96
	Total	33	4.09	0.843	0.147	3.79	4.39

With regard to strictness of major customers, participants were asked to indicate the level of major customers strictness in delivery fulfillment requirement, it is reported that, these firms major customers become stricter in their delivery fulfillment requirement. To rank firms based on their average result, Peacock shoe factory become convinced that customer become stricter in their delivery requirement and rating its customers strictness at a mean value of 3.57, followed by Jamaica a mean of 3.50, kangaroo with a mean of 3.25 and, Anbessa and Ramsie equally with a mean of 3.00. It was taken as an indication that, the case firms' major customers are becoming stricter on delivery fulfillment requirements.

Participants were also asked to indicate the capacity of their respective firms to address the full amount of a product ordered by customers, in this regard, the overall lower mean was reported. However, Peacock Company was better in meeting major customers' delivery in-full requirement with a mean value of 3.86, while, Kangaroo is the least in its compliance to customers in-full requirement with a mean value of 2.63 which is less than average. Jamaica was also slightly better in its delivery compliance to customers a mean of 3.50, followed by Anbessa and Ramsie who have got equal mean of 3.00. Although, two firms reported a higher mean, we can conclude from the overall result that, even if customers become stricter in their delivery fulfillment requirement, most of surveyed firms' compliance to customers' delivery in-full requirement is still not satisfactory.

In addition, these five firms were asked to score their compliance to delivery on-time requirement; customers may sometimes need a faster delivery or on-time delivery of a product or services. Thus meeting this requirement is the task of a given manufacturer; but the overall mean (3.39) reported was not sufficient to meet this on-time delivery service. However, in this regard, respondents from Peacock was rating it at a higher mean of 4.00, to indicate their higher level of meeting on-time delivery requirement, while Anbessa was in the second level in this practice with a mean value of 3.83, followed by Ramsie with a mean of 3.5 and Jamaica a mean of 3.00. Kangaroo reported a lower level of compliance to delivery on-time requirement with a mean value of less than average (2.75).

In regard to cooperativeness, participants were asked to indicate their level of cooperativeness in relationship with major customers; the overall level of cooperation in relationship with major customer is quit high with a mean value of 4.09. Thus, four out of five firms reported a higher level of cooperativeness, which revealed the attention that firms gave to collaborative

relationship rather than reactive relationship. Jamaica was best in its cooperativeness with its customers at a mean of 4.67; while Kangaroo was lower in this practice with a slightly better than average a mean of 3.5. Moreover, Peacock, Ramsie and Jamaica reported a mean of 4.27, 4.17 and 4.00 respectively.

Table 4.4: Joint product planning, Cooperativeness with supplier, and occurrence of meeting

CSR 2		N	Mean	Std. Dev	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
5) the level of joint product planning with major customers	Anbessa	6	3.83	0.408	0.167	3.40	4.26
	Kangaroo	8	3.50	1.414	0.500	2.32	4.68
	Jamaica	6	3.33	0.816	0.333	2.48	4.19
	Peacock	7	4.14	1.069	0.404	3.15	5.13
	Ramsie	6	3.67	0.516	0.211	3.12	4.21
	Total	33	3.70	0.951	0.166	3.36	4.03
6) the level of cooperativeness in relationship with major suppliers	Anbessa	6	4.00	0.000	0.000	4.00	4.00
	Kangaroo	8	4.13	1.126	0.398	3.18	5.07
	Jamaica	6	4.00	0.000	0.000	4.00	4.00
	Peacock	7	4.00	0.577	0.218	3.47	4.53
	Ramsie	6	4.33	0.816	0.333	3.48	5.19
	Total	33	4.09	0.678	0.118	3.85	4.33
7) the level of joint product planning with major suppliers	Anbessa	6	2.33	0.816	0.333	1.48	3.19
	Kangaroo	8	2.63	1.506	0.532	1.37	3.88
	Jamaica	6	1.83	1.329	0.543	0.44	3.23
	Peacock	7	3.86	0.378	0.143	3.51	4.21
	Ramsie	6	4.00	0.000	0.000	4.00	4.00
	Total	33	2.94	1.273	0.222	2.49	3.39
8) occurrence of meeting with suppliers and customers	Anbessa	6	3.17	0.408	0.167	2.74	3.60
	Kangaroo	8	3.63	1.188	0.420	2.63	4.62
	Jamaica	6	3.17	1.329	0.543	1.77	4.56
	Peacock	7	3.86	0.900	0.340	3.03	4.69
	Ramsie	6	4.00	0.000	0.000	4.00	4.00
	Total	33	3.58	0.936	0.163	3.24	3.91

In terms of joint product planning, the overall level of joint product planning with major customers is satisfactory at a mean value of 3.70. It was also reported that, Peacock is in a very

higher level of planning products in collaboration with customers with overall mean of 4.14, followed by Anbessa with a mean of 3.83, Kangaroo 3.5, and Ramsie 3.67. However, Jamaica was least in this practice, although a better than average mean of 3.33 was reported. We can understand from the result that, all firms selected show progress in involving customers in product planning which is the result of close coordination.

In relation with cooperativeness, the general level of cooperativeness in relationship with major suppliers is quit high and has a mean of 4.09, all firms reported a higher level of cooperativeness with suppliers by rating it at a mean level of 4 and above which is the result of the attention given to the relationship built with their partners. To rank them based on their practice level, Ramsie is the first, Kangaroo second and the rest three firms equally get the third position.

In terms of involving major suppliers in product planning, participants rating this practice less than average at a mean of 2.94, only Ramsie and Peacock were reported above average a mean of 4.00 and 3.86 respectively which shows their higher level of joint product planning arrangement made with suppliers. However, Jamaica, Anbessa and Kangaroo were taking the least in their joint product planning arrangement with suppliers at a mean of 1.83, 2.33 and 2.63 respectively. The result shows the level of joint product planning with suppliers is not as such satisfactory. However, there is a good start up in building such joint work approach in some firms.

To understand occasion as well as the rate of firms meeting with their partners, respondents were also asked to rate the occurrence of meeting with suppliers and customers in their respective firms, although there are some firms who reported at a higher level, the overall occurrence of meeting in these five firms were slightly better than average at a mean of 3.58. It was shown that, Ramsie was good at arranging meeting with partners with overall mean of 4.00, followed by Peacock with a mean value of greater than average level at 3.86. Kangaroo was the third with a mean of 3.63, while Anbessa and Ramsie scored a mean equally at 3.17. We can understand from the result that, there is a good trend in meeting with partners in some firms.

Table 4.5: Acceptation of improvement suggestion, giving advice and suggestion, and Participation in the sourcing decision of suppliers

CSR 3		N	Mean	Std. Dev	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
9) acceptance and implementation of supplier improvement suggestion	Anbessa	6	3.00	0.000	0.000	3.00	3.00
	Kangaroo	8	3.00	0.926	0.327	2.23	3.77
	Jamaica	6	2.83	0.753	0.307	2.04	3.62
	Peacock	7	3.86	1.069	0.404	2.87	4.85
	Ramsie	6	3.83	0.408	0.167	3.40	4.26
	Total	33	3.30	0.847	0.147	3.00	3.60
10) advice and suggestion to supplier according to quality result	Anbessa	6	3.00	0.000	0.000	3.00	3.00
	Kangaroo	8	3.63	0.518	0.183	3.19	4.06
	Jamaica	6	2.83	0.983	0.401	1.80	3.87
	Peacock	7	3.86	0.900	0.340	3.03	4.69
	Ramsie	6	3.67	0.516	0.211	3.12	4.21
	Total	33	3.42	0.751	0.131	3.16	3.69
11) participating in the sourcing decision of the suppliers	Anbessa	6	3.83	0.408	0.167	3.40	4.26
	Kangaroo	8	3.13	0.354	0.125	2.83	3.42
	Jamaica	6	2.67	0.516	0.211	2.12	3.21
	Peacock	7	3.86	0.690	0.261	3.22	4.50
	Ramsie	6	3.33	0.816	0.333	2.48	4.19
	Total	33	3.36	0.699	0.122	3.12	3.61

In regard to acceptance and implementation of supplier improvement suggestion, the case firms were asked whether they accept and implement suggestions that will be obtained from suppliers, they replied that, their acceptance and implementation of supplier suggestion is in a lower level at a mean of 3.30; but, a higher level of practice was scored by Peacock at a mean of 3.86, a good implementation level but slightly lower than the experience of Peacock was reported by Ramsie with a mean value of 3.83. Anbessa and Kangaroo was reported average level; while Jamaica is lower than average in this practice at a mean of 2.83. From this we can infer that, except the two firms who indicated a better mean, the practice with regard to acceptance and implementation of suppliers' improvement suggestion is low which needs managers' concern in

the area since it is believed important to accommodate their idea in production and usage of raw materials.

In addition, participants were asked to rate their experience with regard to advice and suggestion to suppliers according to quality result, participants reported that the advice and suggestion given to suppliers according to quality result was slightly more than average a mean of 3.42. However, it was also indicated that, Peacock was better in this practice with overall mean of 3.86, followed by Ramsie and Kangaroo with a mean of 3.67 and 3.63 respectively. A lower level of practice was reported by Jamaica a mean of 2.83, while Anbessa was rating it an average level a mean of 3.00. This advice and suggestion is necessary due to the fact that suppliers can feel as they are getting full attention of their organization.

Concerning the participation in the sourcing decision of supplier's, firms were asked to report their experience in regard to getting the chance or involving in the actual agreement with suppliers; and they rating their practice in a lower level at a mean of 3.36. However, a better mean was reported by Peacock at a mean of 3.86; while Anbessa take the second rank with a mean of 3.83. In addition, Jamaica reported less than average experience level with a mean of 2.83 which was reduced the overall mean. In addition, Kangaroo was reported approximately average level of participation in the sourcing decision at a mean of 3.13. We can understand from the result that, only two firms are good at involving in the sourcing decision of their suppliers, which can in turn help them get quality raw material and better service at the right time.

4.2.2. Internal operation practices

In terms of frequent introduction of new product and improvement of existing model, the case firms were asked to rate their performance level in new product development practice that they implemented, overall lower mean of 3.09 was reported, which shows unsatisfactory level of the practice. However, to rank firms performance level in the practice requested, Jamaica was better in its experience related to new product introduction with a mean of 3.83, followed by Ramsie whose mean was 3.67, Peacock with a mean of 3.29 and Kangaroo was average with overall mean of 3.13. However, Anbessa was in a lower level in its new product development practices with a mean of 1.50 which affected the overall mean.

Table 4.6: New product introduction, Up-to-datedness of production, Material flow management and flexibility of production system

<i>INTERNA OPERATION PRACTICES (IO 1)</i>		N	Mean	Std. Dev	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
1) frequent introduction of new product and improve models of existing one	Anbessa	6	1.50	1.225	0.500	0.21	2.79
	Kangaroo	8	3.13	0.991	0.350	2.30	3.95
	Jamaica	6	3.83	1.329	0.543	2.44	5.23
	Peacock	7	3.29	0.756	0.286	2.59	3.98
	Ramsie	6	3.67	0.816	0.333	2.81	4.52
	Total	33	3.09	1.259	0.219	2.64	3.54
2) up-to-datedness of production process	Anbessa	6	2.33	0.816	0.333	1.48	3.19
	Kangaroo	8	2.63	0.518	0.183	2.19	3.06
	Jamaica	6	3.33	0.816	0.333	2.48	4.19
	Peacock	7	3.71	0.951	0.360	2.83	4.59
	Ramsie	6	3.67	0.816	0.333	2.81	4.52
	Total	33	3.12	0.927	0.161	2.79	3.45
3) internal material and product flow management for main product	Anbessa	6	3.00	0.000	0.000	3.00	3.00
	Kangaroo	8	3.38	0.744	0.263	2.75	4.00
	Jamaica	6	3.83	0.408	0.167	3.40	4.26
	Peacock	7	3.71	0.488	0.184	3.26	4.17
	Ramsie	6	3.50	0.548	0.224	2.93	4.07
	Total	33	3.48	0.566	0.098	3.28	3.69
4) flexibility of production system to handle order pattern	Anbessa	6	3.00	0.000	0.000	3.00	3.00
	Kangaroo	8	3.88	1.246	0.441	2.83	4.92
	Jamaica	6	4.17	0.753	0.307	3.38	4.96
	Peacock	7	4.29	0.756	0.286	3.59	4.98
	Ramsie	6	2.83	0.408	0.167	2.40	3.26
	Total	33	3.67	0.957	0.167	3.33	4.01

In addition, respondents were asked to rate their production process up-to-datedness, they indicated a slightly more than average level at a mean of 3.12 which is not satisfactory for organizations who operate in a dynamic business environment. However, it was rated higher by

Peacock with a mean value of 3.71, followed by Ramsie and Jamaica with overall mean of 3.67 and 3.33 respectively; while, Kangaroo and Anbessa take the least in this practice with a mean value of 2.63 and 2.33 respectively.

In regard to material and product flow management, participants were asked to rate their performance level and the overall mean of 3.48 was revealed, which shows a slightly better internal material flow management for main products; where, Jamaica was rating it in higher level with a mean of 3.88, followed by Peacock a mean of 3.71 and Ramsie a mean of 3.50. In addition, Kangaroo was slightly better than average a mean of 3.38, while Anbessa reported average level of it with a mean of 3.00. From the overall mean we can understand that, these case firms are better in internal material flow management.

Concerning flexibility of production system to handle order pattern, although the overall mean value of 3.67 was revealed, it was rated in a higher level by Peacock at a mean of 4.29, which indicate its production system flexibility to serve any kind of order from customers. Jamaica and Kangaroo was second and third in their level of flexibility with 4.17 and 3.88 respectively. However, Anbessa was rating it a mean at an average level; while, lower practice level was reported by Ramsie at a mean of 2.83, which shows that, there is a low level of flexibility in firms reported below average, which can reduce their capacity to address different order pattern.

In terms of innovation, these firms under study were asked to score the level of innovation occurring in relation to their main product, the overall mean of slightly better than average was reported at a mean of 3.21. However, to rank based on the level of the performance of firms, Peacock was better in its innovation with regard to creating new design as well as adopting the existing design with a modification. And it was indicated at a mean of 3.71, Ramsie was second in this practice with a mean of 3.50, followed by Jamaica a mean of 3.33 and Kangaroo a mean value of 3.25; whereas, Anbessa Rating this practices as low than the rest of surveyed firms with a mean of 2.17.

Table 4.7: the extent of innovation, continuous improvement adoption, employee professional skill, and Management Know-how regarding supply chain

Internal Operation practices 2		N	Mean	Std. Dev	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
5) the extent of innovation occurring in relation to the main product	Anbessa	6	2.17	0.408	0.167	1.74	2.60
	Kangaroo	8	3.25	1.035	0.366	2.38	4.12
	Jamaica	6	3.33	0.816	0.333	2.48	4.19
	Peacock	7	3.71	0.756	0.286	3.02	4.41
	Ramsie	6	3.50	0.548	0.224	2.93	4.07
	Total	33	3.21	0.893	0.155	2.90	3.53
6) the extent of continuous improvement adoption	Anbessa	6	2.17	0.408	0.167	1.74	2.60
	Kangaroo	8	4.00	1.069	0.378	3.11	4.89
	Jamaica	6	3.83	0.408	0.167	3.40	4.26
	Peacock	7	4.14	0.900	0.340	3.31	4.97
	Ramsie	6	3.33	0.816	0.333	2.48	4.19
	Total	33	3.55	1.034	0.180	3.18	3.91
7) the extent of production employee professional skill	Anbessa	6	3.00	0.000	0.000	3.00	3.00
	Kangaroo	8	3.38	0.744	0.263	2.75	4.00
	Jamaica	6	3.83	0.408	0.167	3.40	4.26
	Peacock	7	4.43	1.134	0.429	3.38	5.48
	Ramsie	6	3.00	0.000	0.000	3.00	3.00
	Total	33	3.55	0.833	0.145	3.25	3.84
8) management know-how regarding supply chain effectiveness	Anbessa	6	3.00	0.000	0.000	3.00	3.00
	Kangaroo	8	3.38	0.744	0.263	2.75	4.00
	Jamaica	6	4.50	0.837	0.342	3.62	5.38
	Peacock	7	4.00	1.414	0.535	2.69	5.31
	Ramsie	6	3.00	0.000	0.000	3.00	3.00
	Total	33	3.58	0.969	0.169	3.23	3.92

In regard to continuous improvement adoption, the overall mean of 3.55 was reported by participants. Here, it was also indicated that, Peacock was good in its continuous improvement adoption in its operation process with a higher level overall mean of 4.14 followed by Kangaroo

whose practice also in a higher level with a mean of 4.00. Jamaica was in a third position in this practice at a mean of 3.83, while Ramsie scored slightly more than average with a mean of 3.33, while, a lower level was rated by Anbessa whose mean is 2.17.

In regard to production employee professional skill, although the overall mean indicated was 3.55, Peacock have reported a higher level of production employee professional skill with a mean of 4.43 and they believed that their production employees are skillful enough to carry out their tasks, followed by Jamaica whose practice was much better than average performers with a mean of 3.83. Kangaroo was third in its employee's professional skill with a mean of 3.38, while Anbessa and Ramsie's performance was at an average level with an equal mean of 3. From this we can infer that, even though, there becomes a culture to recruit professional workers that the work deserves in different manufacturing sector, the result in the surveyed firms shows there is a need for improvement in recruiting and training employees in the footwear industry.

Concerning management Know-how regarding supply chain effectiveness, participants were asked to rate their level of experience, the mean reported was in a level slightly better than average at a mean of 3.58, Jamaica was in a higher level of practice with over all mean of 4.50 followed by Peacock whose practice was in a higher level at a mean of 4 although it was outweighed by Jamaica. Kangaroo was in a third level with a mean value of 3.38, while Anbessa and Ramsie equally reported average level of it with a mean value of 3. We can infer from the result that, firm managers' know-how with respect to supply chain is not sufficient (except two firms who scored above 4) to effectively coordinate and bring forth parties involved together.

Table 4.8: MTS and MTO production, process automation and modular system application

IO 3		N	Mean	Std. Dev	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
9)the extent of made to stock production	Anbessa	6	3.00	0.000	0.000	3.00	3.00
	Kangaroo	8	3.63	1.506	0.532	2.37	4.88
	Jamaica	6	2.50	0.548	0.224	1.93	3.07
	Peacock	7	3.57	0.787	0.297	2.84	4.30
	Ramsie	6	3.50	0.548	0.224	2.93	4.07
	Total	33	3.27	0.944	0.164	2.94	3.61
10) the extent of made to order production	Anbessa	6	3.00	0.000	0.000	3.00	3.00
	Kangaroo	8	4.13	0.991	0.350	3.30	4.95
	Jamaica	6	4.83	0.408	0.167	4.40	5.26
	Peacock	7	4.71	0.488	0.184	4.26	5.17
	Ramsie	6	3.50	0.548	0.224	2.93	4.07
	Total	33	4.06	0.899	0.157	3.74	4.38
11) the extent of production process automation for main product	Anbessa	6	3.00	0.000	0.000	3.00	3.00
	Kangaroo	8	2.75	0.707	0.250	2.16	3.34
	Jamaica	6	2.67	1.506	0.615	1.09	4.25
	Peacock	7	4.14	0.378	0.143	3.79	4.49
	Ramsie	6	3.00	0.632	0.258	2.34	3.66
	Total	33	3.12	0.927	0.161	2.79	3.45
12) the extent of modular system application for production	Anbessa	6	3.17	0.408	0.167	2.74	3.60
	Kangaroo	8	3.25	1.035	0.366	2.38	4.12
	Jamaica	6	2.67	1.506	0.615	1.09	4.25
	Peacock	7	3.86	0.900	0.340	3.03	4.69
	Ramsie	6	3.67	0.816	0.333	2.81	4.52
	Total	33	3.33	1.021	0.178	2.97	3.70

In terms of Made-to-Stock production, although the overall mean identified was 3.27, there were firms whose average mean exceeds the overall mean. To rank them, Kangaroo was rating this practice in a better than average level at a mean of 3.63 followed by Peacock with a mean of

3.57, and Ramsie with a mean of 3.50. It was also indicated that Anbessa is at an average level in its Made-to-stock production a mean of 3.00; in addition, Jamaica was in a lower level at a mean of 2.5. The result from the overall mean revealed that firms did not give sufficient attention to Made-To-Stock production which is related with producing standardized product for inventory and customer will be served from the available inventory.

Participants were also asked to rate their MTO production performance which will be produced for customer order, they rating it in the overall higher mean of 4.06, however, these five firms are scored different level; where, Jamaica was in a very high level of MTO production with a mean of 4.83 which can be interpreted as they are able to serve customers individualized need when ordered, it was followed by Peacock a mean of 4.71, and Kangaroo with a mean of 4.13. However, Ramsie and Anbessa were not scored a higher level as the other firms are, with a mean of 3.50 and 3.00 respectively.

In regard to production process automation, the overall mean of 3.12 was reported, which has shown us the low level of computerized equipment utilization in the production process of the case firms. However, Peacock has a higher level of automation in its production process with a mean of 4.14, followed by Anbessa and Ramsie whose practice level is at an average level with a mean of 3.00, while, Kangaroo and Jamaica reported a lower level of process automation with a mean of 2.75 and 2.63 respectively. We can understand from the result that, Except Peacock all firms are not good at implementing production process automation.

In terms of modular system application, the overall mean of slightly better than average was reported. In addition, it was shown that, Peacock was good in its modular system application for production with a mean of 3.86, it was considered as good practices for firms like Peacock to concentrate on modular design if they preferred an MTO production system, in order to reduce cost of production. And it was followed by Ramsie with a mean of 3.67 and Kangaroo with a mean value of 3.25 while Anbessa reported a slightly better than average mean value of 3.17. However, Jamaica is in a lower level of this practice with a mean value of 2.67, which wouldn't be favorable for firms who rely on MTO production such as Jamaica, to set modular system aside, since the cost of producing each design will be aggravated.

4.2.3. Information sharing practices

Table 4.9: satisfaction, forecast information and product related information sharing

<i>INFORMATION SHARING PRACTICES (IS 1)</i>		N	Mean	Std. Dev	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
1)satisfaction information sharing from customers	Anbessa	6	4.00	0.000	0.000	4.00	4.00
	Kangaroo	8	3.50	0.535	0.189	3.05	3.95
	Jamaica	6	3.33	0.516	0.211	2.79	3.88
	Peacock	7	3.71	0.756	0.286	3.02	4.41
	Ramsie	6	4.00	0.000	0.000	4.00	4.00
	Total	33	3.70	0.529	0.092	3.51	3.88
2) forecast information sharing with major suppliers	Anbessa	6	3.00	0.000	0.000	3.00	3.00
	Kangaroo	8	2.63	0.518	0.183	2.19	3.06
	Jamaica	6	2.67	1.033	0.422	1.58	3.75
	Peacock	7	4.14	0.690	0.261	3.50	4.78
	Ramsie	6	3.17	0.753	0.307	2.38	3.96
	Total	33	3.12	0.857	0.149	2.82	3.43
3) other product related information sharing with customers	Anbessa	6	2.33	0.816	0.333	1.48	3.19
	Kangaroo	8	2.88	0.354	0.125	2.58	3.17
	Jamaica	6	3.83	0.408	0.167	3.40	4.26
	Peacock	7	3.71	0.488	0.184	3.26	4.17
	Ramsie	6	4.50	0.548	0.224	3.93	5.07
	Total	33	3.42	0.902	0.157	3.10	3.74
3) forecast information sharing by customer	Anbessa	6	2.33	0.816	0.333	1.48	3.19
	Kangaroo	8	2.50	0.535	0.189	2.05	2.95
	Jamaica	6	3.17	0.753	0.307	2.38	3.96
	Peacock	7	4.29	0.488	0.184	3.83	4.74
	Ramsie	6	3.83	0.408	0.167	3.40	4.26
	Total	33	3.21	0.960	0.167	2.87	3.55

In terms of satisfaction information sharing, overall mean of 3.70 was reported. To put firms based on their performance level, Anbessa and Ramsie equally reported a higher level

performance in this practice which is satisfaction information sharing from customer with a mean value of 4.00 followed by Peacock with a mean of 3.71 and Kangaroo a mean of 3.50, while, lower level was rated by Jamaica at a mean of 3.33.

In relation to forecast information sharing, it was indicated by participants at a lower mean of 3.12; however, Peacock was reported a better experience in sharing its forecast information with suppliers with a higher mean of 4.14, followed by Ramsie whose practice was not as such satisfactory but has a mean (3.17) slightly more than average. This practice was rated by Anbessa at an average level a mean of 3.00. However, a lower level of practice was reported by Jamaica and Kangaroo a mean of 2.67 and 2.63 respectively. From the result one can understand that, most of the case firms are not well prepared to share forecast related data with their suppliers.

In regard to other product related information sharing with customers, respondents was reported slightly better than average at a mean of 3.42, where, Ramsie was rating it in a higher level to show its performance in sharing product related information with its customers a mean of 4.50, followed by Jamaica with a mean much better than average at 3.83. Peacock was third in its experience with a mean of 3.71, while Kangaroo and Anbessa was in a lower level of practice at a mean of 2.88 and 2.33.

Concerning forecast information sharing by customers, firms were asked to rate their practice level and overall mean of 3.21 was revealed. But, as per the result, Peacock scored a higher level of arrangement with customers at a mean (4.29), higher than the other firms under study, which lead these customers share forecast data with it. Ramsie was the second in its practice with a mean of 3.83, while Jamaica reported a slightly better than average at a mean of 3.17. However, this practice was rated by Kangaroo and Anbessa in a lower level at 2.50 and 2.33 respectively.

Table 4.10: Adequacy of information flow, efforts to provide sales forecast data, formal and informal information sharing

IS 2		N	Mean	Std. Dev	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
5) adequacy of information flow through supply chain	Anbessa	6	2.33	0.816	0.333	1.48	3.19
	Kangaroo	8	3.00	0.756	0.267	2.37	3.63
	Jamaica	6	3.33	0.516	0.211	2.79	3.88
	peacock	7	4.57	0.535	0.202	4.08	5.07
	Ramsie	6	3.67	0.816	0.333	2.81	4.52
	Total	33	3.39	0.998	0.174	3.04	3.75
6) overall efforts to provide sales forecast data along the supply chain	Anbessa	6	2.83	0.408	0.167	2.40	3.26
	Kangaroo	8	2.75	0.707	0.250	2.16	3.34
	Jamaica	6	2.50	0.548	0.224	1.93	3.07
	peacock	7	4.29	0.951	0.360	3.41	5.17
	Ramsie	6	3.17	0.983	0.401	2.13	4.20
	Total	33	3.12	0.960	0.167	2.78	3.46
7) use of formal information sharing agreement with suppliers and customers	Anbessa	6	2.33	0.816	0.333	1.48	3.19
	Kangaroo	8	2.88	0.354	0.125	2.58	3.17
	Jamaica	6	3.33	0.516	0.211	2.79	3.88
	peacock	7	3.57	0.535	0.202	3.08	4.07
	Ramsie	6	4.33	0.816	0.333	3.48	5.19
	Total	33	3.27	0.876	0.152	2.96	3.58
8) use of informal information sharing with suppliers and customers	Anbessa	6	2.83	0.408	0.167	2.40	3.26
	Kangaroo	8	2.88	0.641	0.227	2.34	3.41
	Jamaica	6	2.17	1.472	0.601	.62	3.71
	Peacock	7	3.71	0.951	0.360	2.83	4.59
	Ramsie	6	1.67	0.516	0.211	1.12	2.21
	Total	33	2.70	1.075	0.187	2.32	3.08

With regard to the adequacy of information flow through the supply chain, the case firms were asked to rate their experience level, the result shows that, Peacock was rating it at a higher mean of 4.57 with belief that, the information flow through its supply chain is adequate, while, Ramsie was the second in its experience with a mean of 3.67 followed by Jamaica and Kangaroo with a mean of 3.33 and 3.00 respectively. However, Anbessa was the least in its practice and rating it lower at a mean of 2.33. The result shows the information flow through each supply chain is not adequate and most of footwear manufacturing firms under study were not comfortable with the adequacy of information flow through supply chain which needs improvement.

Surveyed firms were also asked to report the overall efforts made to provide sales forecast data along the supply chain, a lower response mean was reported at 3.12. In this practice it was also revealed that Peacock was good at a mean of 4.29 followed by Ramsie at a mean of 3.17. However, the rest three firms: Anbessa, Kangaroo, Jamaica were reported a lower level experience of it with a mean value of 2.83, 2.75 and 2.50 respectively.

In regard to information sharing agreement, Ramsie is better in having a formal information sharing agreement between its partners and reported a higher mean of 4.33, followed by Peacock at a mean of 3.57 and Jamaica a mean of 3.57. However, Anbessa and Kangaroo was in a lower level experience in their agreement with their partners a mean of 2.83 and 2.88 respectively.

Concerning informal information sharing with partners, only a mean (2.70) of less than average was reported, except Peacock the rest firms were lower than average in their practice. A better Practice level was reported by Peacock at a mean of 3.71 followed by Kangaroo a mean of 2.88, Anbessa a mean of 2.83, and Jamaica with a mean of 2.17. However the worst practice of all was reported by Ramsie a mean of 1.67.

4.2.4. Information Technology implementation practices

Table 4.11: IT based order receiving, IT based ordering and up-to-datedness of IT technology

INFORMATION TECHNOLOGY PRACTICES (IT 1)		N	Mean	Std. Dev	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
1)the level of IT based automated ordering from major customer	Anbessa	6	4.50	1.225	0.500	3.21	5.79
	Kangaroo	8	3.00	0.000	0.000	3.00	3.00
	Jamaica	6	3.33	1.966	0.803	1.27	5.40
	peacock	7	3.29	0.756	0.286	2.59	3.98
	Ramsie	6	3.00	1.095	0.447	1.85	4.15
	Total	33	3.39	1.197	0.208	2.97	3.82
2) the level of IT based automated ordering to major suppliers	Anbessa	6	2.83	0.408	0.167	2.40	3.26
	Kangaroo	8	3.00	0.000	0.000	3.00	3.00
	Jamaica	6	4.33	0.816	0.333	3.48	5.19
	peacock	7	4.00	0.816	0.309	3.24	4.76
	Ramsie	6	3.00	1.095	0.447	1.85	4.15
	Total	33	3.42	0.902	0.157	3.10	3.74
3)the up-to-datedness of IT technology throughout the supply chain	Anbessa	6	2.00	0.000	0.000	2.00	2.00
	Kangaroo	8	2.25	0.707	0.250	1.66	2.84
	Jamaica	6	3.00	1.095	0.447	1.85	4.15
	peacock	7	4.43	0.787	0.297	3.70	5.16
	Ramsie	6	3.00	1.095	0.447	1.85	4.15
	Total	33	2.94	1.171	0.204	2.52	3.35

In terms of IT based automated ordering from major customers, the level of IT utilization from major customers to order product is low with a mean of 3.39, however, Anbessa was reported a higher experience level at a mean of 4.50 and was considered as a very good IT utilization with its customer. And it was followed by Jamaica a mean of 3.33, Peacock a slightly more than average with a mean of 3.29. Kangaroo and Ramsie rating this practice at an average level with a mean of 3.00. The result shows that, except Anbessa, all firms understudy need improvement in their IT utilization to receive order from their customers.

Concerning IT based automated ordering to major suppliers, overall slightly better than average performance level at a mean of 3.42 was indicated, where, Jamaica was reported a higher level in ordering material to suppliers through the use of IT as an enabler with a mean of 4.33. Peacock was the second having a mean of 4.00, while Ramsie and Kangaroo was average level in their IT based ordering. However, Anbessa revealed a lower level the practice by scoring at a mean of 2.83.

In terms of the up-to-datedness of the IT technology throughout their supply chain, a mean value of less than average 2.94 was reported. Although, Peacock was rating it at a higher level with a mean of 4.43, to show its good experience in the Up-to-datedness of IT technology and was followed by Jamaica and Ramsie whose mean were equal at an average level 3.00. However, Anbessa and Kangaroo rating a lower level practice of Up-to-datedness by rating it a mean of 2.00 and 2.25 respectively.

Table 4.12: Adequacy of IT system, and IT based production

IT 2		N	Mean	Std. Dev	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
4) the adequacy of IT system throughout the supply chain	Anbessa	6	2.83	0.408	0.167	2.40	3.26
	Kangaroo	8	2.38	0.916	0.324	1.61	3.14
	Jamaica	6	2.83	1.329	0.543	1.44	4.23
	peacock	7	3.29	0.951	0.360	2.41	4.17
	Ramsie	6	2.50	0.548	0.224	1.93	3.07
	Total	33	2.76	0.902	0.157	2.44	3.08
5) the level of IT based production	Anbessa	6	2.17	0.408	0.167	1.74	2.60
	Kangaroo	8	1.88	0.641	0.227	1.34	2.41
	Jamaica	6	2.33	0.816	0.333	1.48	3.19
	peacock	7	2.71	0.951	0.360	1.83	3.59
	Ramsie	6	2.83	0.408	0.167	2.40	3.26
	Total	33	2.36	0.742	0.129	2.10	2.63

The case firms were also asked to rate the adequacy of IT system in their respective Supply Chain, it was rated more than average only by one firm. However, the result shows, the performance of firms supply chain members is quite low at a mean of 2.76; Peacock was rating it a slightly more than average at a mean of 3.29, however it was indicated that it was not sufficient

to share sufficient data along the supply chain. In addition, it was revealed that, Anbessa and Jamaica was reported equally a lower level mean at 2.83, followed by Ramsie and Kangaroo whose mean was 2.50 and 2.38 respectively. In regard to IT based Production; experience of surveyed firms is low at a mean of 2.36 all surveyed firms were below average level. To rank them, Ramsie was first at a mean of 2.83 followed by Peacock a mean of 2.71, Jamaica a mean of 2.33, Anbessa a mean of 2.17 and Kangaroo with a mean of value of 1.88. We conclude from the result that, the level of IT utilization is not adequate in the case firms.

4.2.5. Supply Chain Performance profile

The following tables show firm supply chain performance through supply chain management practice.

Table 4.13: Delivery performance, and product quality

SUPPLY CHAIN PERFORMANCE (SCP 1)		N	Mean	Std. Dev	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
1) we deliver our products and services faster than our competitors	Anbessa	6	3.00	0.000	0.000	3.00	3.00
	Kangaroo	8	3.63	0.518	0.183	3.19	4.06
	Jamaica	6	3.67	0.516	0.211	3.12	4.21
	peacock	7	3.71	0.756	0.286	3.02	4.41
	Ramsie	6	3.50	0.548	0.224	2.93	4.07
	Total	33	3.52	0.566	0.098	3.31	3.72
2) our on-time delivery performance is better than our competitor	Anbessa	6	3.17	0.408	0.167	2.74	3.60
	Kangaroo	8	3.63	0.518	0.183	3.19	4.06
	Jamaica	6	3.67	0.516	0.211	3.12	4.21
	peacock	7	4.29	0.488	0.184	3.83	4.74
	Ramsie	6	3.67	0.516	0.211	3.12	4.21
	Total	33	3.70	0.585	0.102	3.49	3.90
3) our product and service quality is better than our competitors	Anbessa	6	4.00	0.000	0.000	4.00	4.00
	Kangaroo	8	3.88	0.354	0.125	3.58	4.17
	Jamaica	6	4.83	0.408	0.167	4.40	5.26
	Peacock	7	3.71	1.113	0.421	2.69	4.74
	Ramsie	6	3.67	0.516	0.211	3.12	4.21
	Total	33	4.00	0.707	0.123	3.75	4.25

Concerning faster delivery of products and service to customers in comparison with competitors, participants were asked to rate their level of experience, the overall mean of 3.52 was reported, where, Peacock was performed better in its faster delivery performance compared with its competitors and indicated it at a mean of 3.71. The second in faster delivery performance was Jamaica with a mean of 3.67 followed by Kangaroo and Ramsie with a mean value of 3.63 and 3.5 respectively. However, the performance of Anbessa was moderate at a mean of 3.00.

In regard to on-time delivery performance, firms were asked to rate their on-time delivery performance in comparison with their competitors, overall mean of 3.70 was revealed, furthermore, Peacock was in a higher on-time delivery performance which was revealed at a mean of 4.29, followed by Jamaica and Ramsie equally at a mean of 3.67 and Kangaroo at a mean of 3.63, whereas, Anbessa was slightly better than average with a mean of 3.17 but it is not sufficient.

In terms of product and service quality, participants were asked to report their quality level in comparison with competitors; it was revealed that Jamaica has a very higher level of quality performance with a mean of 4.83 followed by Anbessa who performed well in its quality at a mean of 4.00. Kangaroo was in a third position at a mean of 3.88. while Peacock and Ramsie performed at a mean of 3.71 and 3.67 respectively.

Participants were also asked to rate their cost reduction level in comparison with their competitors, a higher cost reduction performance were reported by Anbessa with a mean of 4.00 followed by Peacock whose performance mean was 3.86. In addition, Ramsie was in a better position at a mean of 3.83 in cost reduction performance although it was surpassed by the above two companies. However the lower performance was also indicated by Kangaroo and Jamaica at a mean of 2.63 and 2.17 respectively.

Table 4.14: cost and damage reduction, and responsiveness to customer order

SCP 2		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
4) our operating costs are lower than our competitors	Anbessa	6	4.00	0.000	0.000	4.00	4.00
	Kangaroo	8	2.63	0.518	0.183	2.19	3.06
	Jamaica	6	2.17	0.408	0.167	1.74	2.60
	Peacock	7	3.86	1.069	0.404	2.87	4.85
	Ramsie	6	3.83	0.408	0.167	3.40	4.26
	Total	33	3.27	0.944	0.164	2.94	3.61
5) no damage in the order to the customer	Anbessa	6	3.17	0.408	0.167	2.74	3.60
	Kangaroo	8	3.88	0.354	0.125	3.58	4.17
	Jamaica	6	4.17	0.408	0.167	3.74	4.60
	Peacock	7	4.14	1.215	0.459	3.02	5.27
	Ramsie	6	2.83	0.408	0.167	2.40	3.26
	Total	33	3.67	0.816	0.142	3.38	3.96
6) Responsiveness to customer order	Anbessa	6	2.17	0.408	0.167	1.74	2.60
	Kangaroo	8	3.88	0.354	0.125	3.58	4.17
	Jamaica	6	4.00	0.000	0.000	4.00	4.00
	Peacock	7	4.00	0.816	0.309	3.24	4.76
	Ramsie	6	3.50	0.548	0.224	2.93	4.07
	Total	33	3.55	0.833	0.145	3.25	3.84

In terms of damage reduction, firms were asked to rate their performance level compared with competitors, it was shown that, Jamaica was in a better position at a mean of 4.17 at reducing damage in the order to customers followed by Peacock at a mean of 4.14 and Kangaroo a mean of 3.88. Anbessa reported a mean (3.17) slightly better than average, while a lower performance level was revealed by Ramsie.

In terms of responsiveness to customer order, both Jamaica and Peacock reported a higher level of performance with a mean value of 4.00. It was also indicated that Kangaroo was better in its performance related to responsiveness to customer order at a mean of 3.88, while Ramsie reported slightly better than average mean of 3.50. However, Anbessa was revealed a lower level of responsiveness at a mean of 2.17.

4.3. Analysis Of Variance (ANOVA) result and Discussion

To compare the mean difference among the case firms, the researcher applied Analysis of Variance (ANOVA). The following table and discussion is based on the data obtained from firms selected for the study. For the purpose of deciding whether to accept or reject the null hypothesis, degree of freedom between firms and within firms, in addition to significance level has been taken in to account. When P less than or equal to 0.05 (≤ 0.05), the decision has been to reject the null hypothesis since there seems to have significance mean performance difference among firms with regard to a particular item. However, if $P > 0.05$, the decision was to accept the null hypothesis which states there is no mean difference among surveyed in a particular practice.

Table 4.15: Analysis of variance among firms in Relation to Customer and Supplier relation practices

Hypothesis	ANOVA among firms		
	Significance	F-calculated	Decision
H ₀ : There is no performance difference among these five MLS footwear manufacturing organizations in the Following Customer and Supplier relationship practices			
H ₀ :the strictness of the major customers delivery fulfillment requirements	0.238	1.471	Accepted
H ₀ : level of compliance with major customers delivery in full requirement	0.000	7.500	Rejected
H ₀ : the level compliance with major customer delivery on-time requirement	.002	5.727	Rejected
H ₀ : the level of cooperativeness in your relationship with major customer	.116	2.042	Accepted
H ₀ : the level of joint product planning with major customers	0.603	0.694	Accepted
H ₀ : the level of cooperativeness in relationship with major suppliers	0.904	0.256	Accepted
H ₀ : the level of joint product planning with major suppliers	0.002	5.566	Rejected
H ₀ : occurrence of meeting with suppliers and customers	0.399	1.051	Accepted
H ₀ : acceptance and implementation of supplier improvement suggestion	0.049	2.731	Rejected
H ₀ : advice and suggestion to supplier according to quality result	.045	2.801	Rejected
H ₀ : participating in the sourcing decision of the suppliers	0.004	4.856	Rejected

Significance level for alpha $\alpha = 0.05$

With a 95% confidence interval, there is no significant difference identified among these five Medium and Large footwear manufacturing organizations in terms of the strictness of major customers delivery fulfillment requirement, and cooperativeness in relationship with major customers; $F(4, 28)=1.471$, $P=0.238$ and $F(4, 28)=2.042$, $P=0.116$ respectively. Hence, null hypothesis one and four are accepted. However, firms differ significantly in their level of compliance to customer in-full as well as on-time delivery requirement at $F(4, 28)=7.500$, $P=0.00$ and $F(4, 28)=5.727$ respectively. Thus null hypothesis two and three are rejected.

In terms of Joint product planning with customer, with a 95% confidence interval, there is no significance difference identified between surveyed firms. $F(4, 28)=0.694$, $P=0.603$, so null hypothesis five is accepted. In addition, the differences are not as such significant in regard to cooperativeness in relationship with suppliers; $F(4, 28)=0.256$, $P=0.904$, and occurrence of meeting with suppliers and customers as well $F(4, 28)=1.05$, $P=0.399$ these null hypothesis are also accepted. However, in terms of joint product planning with supplier, there is significant difference identified among surveyed five ML footwear manufacturing firms, $F(4, 28)=5.566$, $p=0.002$, null hypothesis 7 is rejected.

There is a significant difference among these five firms in the mean acceptance and implementation of suppliers' improvement suggestion, $F(4, 28)=1.611$, $P=0.049$, hypothesis 9 is rejected. In addition, it was indicated that, the case firms significantly differ in their advice and suggestion to suppliers according to quality result, $F(4, 28)=2.801$, $P=0.045$ this hypothesis is also rejected. Moreover, hypothesis 11 was also rejected since there is a significant variance among those five firms with regard to their participation in the sourcing decision of their suppliers, $F(4, 28)=4.856$, $P=0.004$.

Table 4.16: Analysis of variance among firms in regard to Internal Operation Practices

Hypothesis	ANOVA among firms		
	Significance	F-calculated	Decision
H ₀ : There is no performance difference among the selected five MLS footwear manufacturing organizations in the Following Internal Operation practices			
H ₀ : frequent introduction of new product and improve models of existing one	.004	4.848	Rejected
H ₀ : up-to-datedness of production	.009	4.131	Rejected
H ₀ :internal material and product flow management for main product	.075	2.388	Accepted
H ₀ : flexibility of production system to handle order pattern	.007	4.426	Rejected
H ₀ : the extent of innovation occurring in relation to the main product	.014	3.762	Rejected
H ₀ : the extent of continuous improvement adoption	.001	6.399	Rejected
H ₀ : the extent of production employee professional skill	.002	5.499	Rejected
H ₀ : management know-how regarding supply chain effectiveness	.013	3.861	Rejected
H ₀ : the extent of made to stock production	.148	1.846	Accepted
H ₀ : the extent of made to order production	0.000	10.03	Rejected
H ₀ : the extent of production process automation for main product	.012	3.888	Rejected
H ₀ : the extent of modular system application for production	.267	1.376	Accepted

Significance level for alpha α =0.05

It was also shown that, with a 5% significance level, null hypothesis one and two are rejected, since, these five firms are significantly differ with the practices related to frequent introduction of new product and improvement of existing design, $F(4, 28)=4.848$, $P=0.004$. In addition, practices with related to up-to-datedness of production system significantly differ among these five firms, $F(4, 28) =4.131$, $P=0.009$. However, null hypothesis three is accepted because there is no significant difference identified among firms in regard to internal material flow management $F(4, 28) =2.388$, $P=0.075$. Nevertheless, hypothesis four is rejected due to the fact that firms significantly differ in their flexibility of production system to handle order pattern , $F(4, 28) =4.426$, $P=0.007$.

In regard to innovation occurring in relation to the main product, the case firms significantly differ in their practice, $F(4, 28) = 3.762$, $P = 0.014$. Furthermore, these five ML footwear manufacturing firms significantly differ by their; continuous improvement adoption $F(4, 28) = 6.339$, $P = 0.001$, production employees professional skill $F(4, 28) = 5.499$, $P = 0.002$ and management Know-how regarding supply chain effectiveness $F(4, 28)$, $P = 0.013$. Thus hypothesis five, six and seven and eight are rejected.

With 5% significance level hypothesis nine and ten are accepted because there is no significance difference identified among firms with respect to; made-to-stock production $F(4, 28) = 1.846$, $P = 0.148$ and modular system application $F(4, 28) = 1.376$, $P = 0.267$. However, surveyed firms significantly differ in their; made-to-order production $F(4, 28) = 10.030$, $P = 0.00$ and with regard to production process automation for main products $F(4, 28) = 3.888$, $P = 0.012$. Thus, hypothesis eleven and twelve are rejected.

Table 4.17: Analysis of Variance among the case firms in relation to Information sharing practices

Hypothesis	ANOVA among firms		
	Significance	F-calculated	Decision
H_0 : There is no significant performance difference among these five MLS footwear manufacturing organizations in the Following Information sharing practices			
H_0 : satisfaction information sharing from customers	.085	2.286	Accepted
H_0 : forecast information sharing with major suppliers	.002	5.761	Rejected
H_0 : other product related information sharing with customers	.000	15.888	Rejected
H_0 : forecast information sharing by customer	.000	12.812	Rejected
H_0 : adequacy of information flow through supply chain	.000	9.271	Rejected
H_0 : overall efforts to provide sales forecast data along the supply chain	.002	5.836	Rejected
H_0 : use of formal information sharing agreement with suppliers and customers	.000	9.226	Rejected
H_0 : use of informal information sharing with suppliers and customers	.003	5.148	Rejected

Significance level for alpha $\alpha = 0.05$

In information sharing practice all null hypotheses except hypothesis one are rejected. These five MLS footwear manufacturing firms do not significantly differ in the sharing of satisfaction information with customer, $F(4, 28) = 2.286$, $P = 0.085$. However, with 95% confidence interval firms performance significantly differ in terms of: forecast information sharing with major supplier, $F(4, 28) = 5.761$, $P = 0.002$; product related information sharing with partners $F(4, 28) = 15.888$, $P = 0.00$; and forecast information sharing with customers, $F(4, 28) = 12.812$, $P = 0.00$. In terms of the adequacy of information flow through supply chain, firms performance are significantly different, $F(4, 28) = 9.271$, $P = 0.00$. In addition, these firms differ significantly with their overall efforts exerted to provide sales forecast data along their supply chain, $F(4, 28) = 5.836$, $P = 0.002$. Furthermore, it is identified that, there are significant different among firms with regard to formal and informal information sharing agreement, $F(4, 28) = 9.226$, $P = 0.00$ and $F(4, 28) = 5.148$, $P = 0.003$ respectively.

Table 18: Analysis of Variance in relation to IT practices

Hypothesis	ANOVA among firms		
	Significance	F-calculated	Decision
H_0 : There is no performance difference among these five Medium and Large size footwear manufacturing organizations in the Following Information Technology practices			
H_0 : the level of IT based automated ordering from major customer	.146	1.856	Accepted
H_0 : the level of IT based automated ordering to major suppliers	.001	5.877	Rejected
H_0 : the up-to-datedness of IT technology throughout the supply chain	.000	8.986	Rejected
H_0 : the adequacy of IT system throughout the supply chain	.368	1.118	Accepted
H_0 : the level of IT based production	.086	2.280	Accepted

Significance level for alpha $\alpha = 0.05$

In terms, of IT based ordering from customers, using a 5% significance level, the result shows there is no significant difference among the case firms, $F(4, 28) = 1.856$, $P = 0.146$. Thus, null hypothesis one is accepted. However, these firms significantly differ in regard to; the level of

automated ordering to major suppliers $F(4, 28)=5.877$, $P=0.001$ and the up-to-datedness of IT technology throughout the supply chain $F(4, 28)=8.986$, $P=0.00$. Thus hypothesis two and three are rejected.

It is also indicated that, null hypothesis four and five are accepted because, with 5% significance level, there is no significant difference among these firms with respect to the adequacy of IT system throughout the supply chain, $F(4, 28)=1.118$, $P=0.368$ and also the level of IT based production do not show significant difference among firms $F(4, 28) = 2.280$, $P=0.86$.

Table 4.19: analysis of Variance among surveyed firms in relation to Supply Chain Performance

Hypothesis	ANOVA among firms		
	Significance	F-calculated	Decision
H_0 : There is no difference among these five Large and Medium size footwear manufacturing organizations in the Following Supply chain performances			
H_0 : we deliver our products and services faster than our competitors	.155	1.811	Accepted
H_0 : our on-time delivery performance is better than our competitor	.008	4.286	Rejected
H_0 : our product and service quality is better than our competitors	.015	3.697	Rejected
H_0 : our operating costs are lower than our competitors	.000	12.215	Rejected
H_0 : no damage in the order to the customer	.003	5.208	Rejected
H_0 : responsiveness to customer order	.000	14.541	Rejected

Significance level for alpha $\alpha=0.05$

With regard to supply chain performance, it is identified that with a 5% significance level, except the first null hypothesis all are rejected.

There is no significant difference among surveyed firms with respect to delivery of products faster than own competitors, $F(4, 28) = 1.811$, $P = 0.155$. However, in terms of on-time delivery to customer in comparison to competitors, these firms significantly show a different. $F(4, 28) = 4.286$, $P = 0.008$. In addition, these five firms are significantly differ in their product and service quality compared with their competitors $F(4, 28) = 3.697$, $P = 0.015$.

It is also revealed that, the case firms are significantly different in their operating cost reduction in comparison with their competitors with a 95% confidence interval, $F(4, 28) = 12.215$, $P = 0.000$. In addition, there is a significant difference in reducing damage among surveyed firms. $F(4, 28) = 5.208$, $P = 0.003$.

In regard to responsiveness, these five MLS footwear manufacturing firms significantly differ with performances related to responsiveness to customer order $F(4, 28) = 14.541$, $P = 0.00$.

5 Conclusion and Suggestion

5.1. Conclusion

Different literature conducted under SCM shows the importance of Supply Chain Management practice to firms' competitive advantage as well as performance. This study like other research in the area found out, the level SCM practices in selected Medium and Large footwear firms. As revealed in the study, each firm's has had different performance level in implementing those supply chain management practices. In addition, the result revealed that, one supply chain practice is implemented better than the other in the selected footwear firms. The researcher finally came up with the following summary of findings.

The result shows that, in customer and supplier relationship practice, most of the null hypotheses are rejected due to the fact that there was a significant performance difference among surveyed firms. Nevertheless, with 5% significance level, there were no significance difference among the case firms with regard to; strictness of major customers delivery requirement, cooperativeness in relationship with customers and suppliers, joint product planning with customers and in the occurrence of meeting with suppliers. Hence, the null hypotheses for the above practices are accepted. However, with 95% confidence interval, there were significance difference identified among these five firms with regard to; compliance to customers' in-full as well as on-time requirement, joint product planning with suppliers, accepting and implementing suppliers' improvement suggestion, advice and suggestion according to quality result and participation in the sourcing decision of suppliers. Thus, null hypotheses for the above practices are rejected.

The results also indicated that, with 5% significance level firms significantly vary in their; new product development, flexibility of production process, innovation, continuous improvement adoption, employees' professional skill, management know-how regarding supply chain, the extent of made to order production and production process automation. Due to this fact, the null hypotheses for the above practices are rejected. Whereas null hypotheses related to; internal material flow management, made to stock production and modular system application for production are accepted because of the non significance difference identified among surveyed firms.

In addition, the case firms show significance performance difference in all information sharing practices such as; forecast information sharing, product related information sharing, adequacy of

information sharing, formal and informal information sharing agreement, except satisfaction information sharing. Thus, the null hypotheses were rejected for all practices, while the null hypothesis for satisfaction information sharing is accepted.

The study result in IT practice shows, at 5% significance level, there were significance performance difference among these firms with related to; IT based automated ordering to major suppliers and the up-to-datedness of IT technology throughout the chain. Hence, the null hypotheses to these two practices are rejected. Whereas, the null hypotheses related to; IT based ordering from major customers, the adequacy of IT system and the level of IT based production, are accepted, because there were no significance difference identified among the case firms.

It was also discovered that, these five MLS footwear firms are significantly differ in all supply chain performance practice except, the first hypothesis which claims, faster delivery service to customer in comparison with their competitors, thus all null hypotheses except the first one were rejected.

Regarding the best performance of firms under study, the researcher finally arrived at the following conclusion from the analysis.

i. Peacock shoe Company

Peacock Shoe Company is well equipped in its capacity to deliver the amount of a product required by customers as well as to meet on-time delivery requirement of customers. It is also revealed that this company arranged a room where customers and suppliers idea will be included in its product planning, by accepting and implementing suppliers' improvement suggestion as well as by giving suggestion according to its suppliers quality result. Peacock company also Participate in the sourcing decision of its suppliers.

Their efforts exerted to develop new products, to improvements of existing design and innovation occurring is good including the flexibility of their production process to handle order pattern. Moreover, the management emphasis for supply chain effectiveness, and its professionally skilled man powers are considered as the building block for better supply chain performance.

In addition, continuous improvement adoption, production process automations and Modular system application for production are the major advantages of Peacock over its competitors.

This company is better in sharing forecast related information when we compare with other firms in the study. The overall efforts exerted by Peacock to provide sales forecast data along the

supply chain is considered more than the other firms under study. It is indicated also that, Peacock is good in sharing information informally with its partners.

Its IT technology is up-to-date which can easily adopt with the dynamic nature of the production process. However, although it is better than the other firms under study, IT system throughout the chain is not as such sufficient.

With regard to supply chain performance peacock performed better in its on-time delivery when compared with its major competitors and they are responsive to their customer order.

ii. *Anbessa Shoe Share Company*

As it was shown in the result, Anbessa shoe factory is good at Supply chain performance related to customer aspects, although their relation with suppliers is not doubtful. Such practices as; delivering products on-time to customers, creating collaborative environment with customers, joint product planning arrangement with customers are better in implementation, which will have its own impact on customer satisfaction. Anbessa is good at using IT to receive order from customers, which shows its ability in using EDI to share data with customers. Moreover, it is superior in sharing satisfaction related information with partners. It is also revealed that, Anbessa is better than the rest four firms at participating in the sourcing decision of their suppliers.

In addition they are good at reducing operating cost and producing quality product to customers when they compare themselves with major industry competitors.

iii. *Ramsie shoe factory*

This company maintained a cooperative environment with customers and suppliers. Besides it shows a good trend in accepting suppliers' improvement suggestion in order to include their idea in product planning.

The production process they implemented is up-to-date which help them to better adopt with the changing business environment. Ramsie is also better in receiving satisfaction information from customers and sharing Product related information with their customers to better satisfy them.

Forecast information sharing with customers and although it was not satisfactory, formal information sharing agreement with partners will make this company different from others in the study. They also used IT based production system which will reduce manual work.

iv. *Kangaroo shoe factory*

It is good at arranging Cooperative environment with their suppliers, in addition to advising and giving suggestion to its suppliers after Peacock. Although, it was surpassed by Peacock and Jamaica, its flexibility to handle order pattern is good. Continuous improvement is also scored better by Kangaroo. The production is more of made to stock production to satisfy customers need from the shelf, even though its made-to-order production is not insignificant. Although, their product quality was better, it was outweighed by Anbessa and Jamaica. However, this company has moderate experience in the other supply chain management areas.

v. *Jamaica shoe company*

Jamaica is good at meeting customers' delivery in-full requirement after Peacock, and scored best in its cooperativeness with major customers and suppliers. In addition, its new product development function and the flexibility of its production process to handle different order from customers are among the performance that can better express Jamaica.

In addition, material flow management and made-to-order production based on the requirement of customers' specific needs are well implemented in Jamaica. Moreover, management Know how about SCM and production employees professional skill is one of the merits that this company has, to better show progress in their supply chain performances.

They are also better at using IT instrument to order material from suppliers which shows their strength in the area of IT implementation.

Jamaica also has products whose qualities are higher than major competitors; damage reduction is also another good performance that they have. It is also indicated that, this firm show good progress in responsiveness to customer order.

5.2. Suggestions

While undertaking this study the researcher considers only five Supply Chain Management variables, there are other aspects of Supply Chain Management that are equally as important as the perspectives selected for this study. Thus, other Supply Chain Management dimension as well as the effect of those SCM perspectives on financial as well as operational performance should be well examined in the future. In addition, there can be interdependency between variables addressed in this study. Thus, the interdependency should be investigated in the future.

Nevertheless, the research result provides a significant contribution to the existing body of knowledge in SCM research. Specific areas that should be given sufficient attention by the case firms are:

- Firms should develop their internal capability, in order to delivery products and services in-full when required by customers. Without, increasing inventory carrying cost.
- Continuous improvement adoption: if firms need to produce defect free products and if they intend to reduce quality inspection cost, it is relevant to adopt Continuous Improvement program in their respective organization.
- Modular system implementation: one of the demerits of Made-to-Order production is its cost of producing each pair of shoes which is the result of producing different parts of a product separately. However, with the application of modular design, different parts will be produced in batch which will further reduce the cost of operation.
- Joint product planning with partners: partners like customers or suppliers may have a good design which can be the result of a good research and development work. Hence, getting in touch with them will serve firms to better equip their product line without affording large investments in new design.
- Recruiting professionals who acquaint with Supply Chain Management should become a culture of these firms. Moreover, it is necessary to improve workers professional skill through training.
- In addition, firms should focus on maintaining long term partnering relationship with customers and suppliers which will intern facilitate and coordinate better information sharing.

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Appendix

Appendix

Master of Business Administration Program

Title: supply chain performance of selected leather footwear firms in Addis Ababa

Questionnaire for data gathering purpose

The following set of questions describes supply chain performance of the footwear manufacturing firms. It includes two kinds of questions. The first set of questions require respondents to tick one of the alternatives that can represent the current practice of their organizations and the second set of question require respondents to give specific answer for questions followed by blank space. Any response given will be kept confidentially and wouldn't be used for any other purpose other than for the research work.

Your participation is extremely important to me to conduct relevant thesis. However, if you encounter with difficult question or areas that you are not responsible, skip it.

I. Name of the organization_____

II. Position of the respondent in the organization_____

III. Number of employees in the organization _____

Respondents will be highly requested to tick one of the five alternatives that can represent the current practice of their organizations, from the alternatives mentioned below.

Appendix A 1

<i>Supplier and customer relationship</i>						
No	Description	V. low	low	Average	High	V. high
1.	The strictness of major customers delivery fulfillment requirement					
2.	Level of compliance with major customers delivery in-full requirement					
3.	Level of compliance with major customers delivery on -time requirement					
4.	The level of cooperativeness in your relationship with major customer					
5.	The level of joint product planning with major					

	Customers					
6.	The level of cooperativeness in relationship with major supplier					
7.	The level of joint product planning with major suppliers					
8.	Occurrences of meeting with supplier and customer					
9.	Acceptation and implementation of supplier improvement suggestions					
10.	Advice and suggestions to supplier according to quality result					
1.	Participating in the sourcing decisions of the suppliers					
A2 <i>Internal Operations Practices</i>						
No	Description	V. low	Low	Average	High	V. high
12	frequent introduction of new product and improve models of existing ones					
13	Up-to-datedness of production					
14	Internal material and product flow management for main product					
15	Flexibility of production system to handle order pattern					
16	The extent of innovation occurring in relation to the main product					
17	The extent of continuous improvement adoption					
18	the extent of employees professional skill					
19	Management Know-how regarding supply chain effectiveness					
20	The extent of made to stock production					
21	The extent of made to order production					
22	The extent of production process automation for main product					
23	The extent of modular system application for production					
A3 <i>Information Sharing Practice</i>						

No	Description	V. low	Low	Average	High	V. high
24	Satisfaction information sharing from customers					
25	Forecast information sharing with major suppliers					
26	Other product related information sharing with customers					
27	Forecast information sharing by customer					
28	Adequacy of information flow through supply chain					
29	Overall efforts to provide sales forecast data along supply chain					
30	Use of formal information sharing agreements with suppliers and customers					
31	Use of informal information sharing with suppliers and customers					
A4 IT related practices						
32.	the level of IT based automated ordering from major customers					
33.	the level of IT based automated ordering to major suppliers					
34.	the up-to-datedness of IT technologies throughout the supply chain					
35.	the adequacy of IT system throughout the supply chain					
36.	The level of IT based production					

A5 Supply Chain Performance						
No	Description	Strongly disagree	Disagree	Moderate	Agree	Strongly agree
37.	We deliver our products and services faster than our competitors					
38.	Our on-time delivery performance is better than our competitors					
39.	Our product and service quality is better than our competitors					
40.	Our operating costs are lower than our competitors					
41.	No damages in the order to the customer					
No	Description	Very low	Low	Average	High	Very high
42.	Responsiveness to customer requests					

Appendix B

ii. Quantitative Questions

1. How many suppliers do you have approximately? _____
2. About how many of those are your core-suppliers? _____
3. Products provided to customers _____
4. What is the percentage of products/raw materials supplied to you by your core-suppliers?

- i. Raw material _____
- ii. Component or assembly product _____

Annex

Annex 1

Customer and Supplier relation practice (CSR 1)		Sum of Squares	df	Mean Square	F	Sig.
1) the strictness of the major customers delivery fulfillment requirements	Between Groups	1.831	4	.458	1.471	.238
	Within Groups	8.714	28	.311		
	Total	10.545	32			
2) level of compliance with major customers delivery in full requirement	Between Groups	6.677	4	1.669	7.500	.000
	Within Groups	6.232	28	.223		
	Total	12.909	32			
3) level of compliance with major customers delivery on-time requirement	Between Groups	8.045	4	2.011	5.727	.002
	Within Groups	9.833	28	.351		
	Total	17.879	32			
4) the level of cooperativeness in your relationship with major customer	Between Groups	5.132	4	1.283	2.042	.116
	Within Groups	17.595	28	.628		
	Total	22.727	32			

CSR 2		Sum of Squares	Df	Mean Square	F	Sig.
5) the level of joint product planning with major customers	Between Groups	2.613	4	.653	.694	.603
	Within Groups	26.357	28	.941		
	Total	28.970	32			
6) the level of cooperativeness in relationship with major suppliers	Between Groups	.519	4	.130	.256	.904
	Within Groups	14.208	28	.507		
	Total	14.727	32			
7) the level of joint product planning with major suppliers	Between Groups	22.980	4	5.745	5.566	.002
	Within Groups	28.899	28	1.032		
	Total	51.879	32			
8) occurrence of meeting with suppliers and customers	Between Groups	3.662	4	.915	1.051	.399
	Within Groups	24.399	28	.871		
	Total	28.061	32			

CSR 3		Sum of Squares	Df	Mean Square	F	Sig.
9) acceptance and implementation of supplier improvement suggestion	Between Groups	6.446	4	1.611	2.731	.049
	Within Groups	16.524	28	.590		
	Total	22.970	32			
10) advice and suggestion to supplier according to quality result	Between Groups	5.162	4	1.290	2.801	.045
	Within Groups	12.899	28	.461		
	Total	18.061	32			
11) participating in the sourcing decision of the suppliers	Between Groups	6.404	4	1.601	4.856	.004
	Within Groups	9.232	28	.330		
	Total	15.636	32			

Annex 2

Internal Operation Practices (IO 1)		Sum of Squares	df	Mean Square	F	Sig.
1) frequent introduction of new product and improve models of existing one	Between Groups	20.757	4	5.189	4.848	.004
	Within Groups	29.970	28	1.070		
	Total	50.727	32			
2) up-to-datedness of production	Between Groups	10.212	4	2.553	4.131	.009
	Within Groups	17.304	28	.618		
	Total	27.515	32			
3) internal material and product flow management for main product	Between Groups	2.606	4	.651	2.388	.075
	Within Groups	7.637	28	.273		
	Total	10.242	32			
4) flexibility of production system to handle order pattern	Between Groups	11.363	4	2.841	4.426	.007
	Within Groups	17.970	28	.642		
	Total	29.333	32			

IO 2		Sum of Squares	Df	Mean Square	F	Sig.
5) the extent of innovation occurring in relation to the main product	Between Groups	8.920	4	2.230	3.762	.014
	Within Groups	16.595	28	.593		
	Total	25.515	32			
6) the extent of continuous improvement adoption	Between Groups	16.325	4	4.081	6.399	.001
	Within Groups	17.857	28	.638		
	Total	34.182	32			
7) the extent of production employee professional skill	Between Groups	9.759	4	2.440	5.499	.002
	Within Groups	12.423	28	.444		
	Total	22.182	32			
8) management know-how regarding supply chain effectiveness	Between Groups	10.686	4	2.671	3.861	.013
	Within Groups	19.375	28	.692		
	Total	30.061	32			

IO 3		Sum of Squares	Df	Mean Square	F	Sig.
9) the extent of made to stock production	Between Groups	5.956	4	1.489	1.846	.148
	Within Groups	22.589	28	.807		
	Total	28.545	32			
10) the extent of made to order production	Between Groups	15.242	4	3.810	10.030	.000
	Within Groups	10.637	28	.380		
	Total	25.879	32			
11) the extent of production process automation for main product	Between Groups	9.825	4	2.456	3.888	.012
	Within Groups	17.690	28	.632		
	Total	27.515	32			
12) the extent of modular system application for production	Between Groups	5.476	4	1.369	1.376	.267
	Within Groups	27.857	28	.995		
	Total	33.333	32			

Annex 3

Information Sharing Practices (IS 1)		Sum of Squares	Df	Mean Square	F	Sig.
1)satisfaction information sharing from customers	Between Groups	2.208	4	.552	2.286	.085
	Within Groups	6.762	28	.241		
	Total	8.970	32			
2) forecast information sharing with major suppliers	Between Groups	10.616	4	2.654	5.761	.002
	Within Groups	12.899	28	.461		
	Total	23.515	32			
3) other product related information sharing with customers	Between Groups	18.090	4	4.523	15.888	.000
	Within Groups	7.970	28	.285		
	Total	26.061	32			
4) forecast information sharing by customer	Between Groups	19.087	4	4.772	12.812	.000
	Within Groups	10.429	28	.372		
	Total	29.515	32			

IS 2		Sum of Squares	df	Mean Square	F	Sig.
5) adequacy of information flow through supply chain	Between Groups	18.165	4	4.541	9.271	.000
	Within Groups	13.714	28	.490		
	Total	31.879	32			
6) overall efforts to provide sales forecast data along the supply chain	Between Groups	13.420	4	3.355	5.836	.002
	Within Groups	16.095	28	.575		
	Total	29.515	32			
7) use of formal information sharing agreement with suppliers and customers	Between Groups	13.956	4	3.489	9.226	.000
	Within Groups	10.589	28	.378		
	Total	24.545	32			
8) use of informal information sharing with suppliers and customers	Between Groups	15.666	4	3.917	5.148	.003
	Within Groups	21.304	28	.761		
	Total	36.970	32			

Annex 4

Information Technology Practice (IT 1)		Sum of Squares	Df	Mean Square	F	Sig.
1) the level of IT based automated ordering from major customer	Between Groups	9.617	4	2.404	1.856	.146
	Within Groups	36.262	28	1.295		
	Total	45.879	32			
2) the level of IT based automated ordering to major suppliers	Between Groups	11.894	4	2.973	5.877	.001
	Within Groups	14.167	28	.506		
	Total	26.061	32			
3) the up-to-datedness of IT technology throughout the supply chain	Between Groups	24.665	4	6.166	8.986	.000
	Within Groups	19.214	28	.686		
	Total	43.879	32			

IT 2		Sum of Squares	df	Mean Square	F	Sig.
4) the adequacy of IT system throughout the supply chain	Between Groups	3.590	4	.898	1.118	.368
	Within Groups	22.470	28	.803		
	Total	26.061	32			
5) the level of IT based production	Between Groups	4.333	4	1.083	2.280	.086
	Within Groups	13.304	28	.475		
	Total	17.636	32			

Annex 5

Supply Chain Performance (SCP 1)		Sum of Squares	df	Mean Square	F	Sig.
1)we deliver our products and services faster than our competitors	Between Groups	2.106	4	.526	1.811	.155
	Within Groups	8.137	28	.291		
	Total	10.242	32			
2)our on-time delivery performance is better than our competitor	Between Groups	4.166	4	1.042	4.286	.008
	Within Groups	6.804	28	.243		
	Total	10.970	32			
3)our product and service quality is better than our competitors	Between Groups	5.530	4	1.382	3.697	.015
	Within Groups	10.470	28	.374		
	Total	16.000	32			

SCP 2		Sum of Squares	df	Mean Square	F	Sig.
4) our operating costs are lower than our competitors	Between Groups	18.147	4	4.537	12.215	.000
	Within Groups	10.399	28	.371		
	Total	28.545	32			
5) no damage in the order to the customer	Between Groups	9.101	4	2.275	5.208	.003
	Within Groups	12.232	28	.437		
	Total	21.333	32			
6) responsiveness to customer order	Between Groups	14.973	4	3.743	14.541	.000
	Within Groups	7.208	28	.257		
	Total	22.182	32			

Annex 6

Reliability statistics

Case Processing Summary

		N	%
Cases	Valid	33	100.0
	Exclude	0	.0
	d(a)		
	Total	33	100.0

a Listwise deletion based on all variables in the procedure.

Case Processing

		N	%
Cases	Valid	33	100.0
	Exclude	0	.0
	d(a)		
	Total	33	100.0

Customer and supplier relation

Cronbach's Alpha	N of Items
.648	11

Internal operation Practices

Cronbach's Alpha	N of Items
.913	12

Reliability Statistics

Cronbach's Alpha	N of Items
.932	42

SC performance

Cronbach's Alpha	N of Items
.641	6

Information sharing practice

Cronbach's Alpha	N of Items
.825	8

Information technology practice

Cronbach's Alpha	N of Items
.775	5