The Effect of Supply Chain Management Practice on Organizational Performance: In case of MDE bottling PLC.

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DEPARTMENT OF LOGISTICS AND SUPPLY CHAIN MANAGEMENT

This is to certify that this thesis entitled with “The Effect of Supply Chain Management Practices on Organizational Performance: In the Case of MDE bottling Plc." Dire Dawa, Ethiopia carried out by Getachew Kifle Feyissa and submitted in partial fulfillment of the requirements of the Degree of Master of Art in Logistics and Supply Chain Management complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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patience and support throughout the thesis.

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Statement of Certification

This is to certify that Getachew Kifle has carried out this research work on the topic entitled "The Effect of Supply Chain Management Practices on Organizational Performance: In the Case of MDE bottling Plc." Dire Dawa, Ethiopia, under my supervision. This work is enough for submission to the partial fulfillment for the award of masters of Arts degree in logistics and supply chain management.

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Statement of Declaration

I, Getachew Kifle Feyissa declare that this paper is a result of my original work on the topic entitled **"The Effect of Supply Chain Management Practice on Organizational Performance: In case of MDE bottling PLC"** in partial fulfillment of the requirements for the Degree of Masters of Art in Logistics and Supply Chain Management at Dire Dawa University. This work is original and has not been submitted for a degree to any other university with the same title from MDE bottling PLC organization previously. All the references are also duly acknowledged and suitable for submission for the Masters of art in Logistic and Supply Chain Management.

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Acronyms/Abbreviations

CR:	Customer Relationship
ECAE:	Ethiopian Conformity Assessment Enterprise
EDI:	Electronic Data Interchange
PLC:	private limited company
MOFED:	Ministry of Finance and Economic Development
SCMP:	Supply Chain Management Practice
SCM:	Supply Chain Management
CLM:	Council of Logistics Management
ROI:	Return on Investment
VIF	Variance inflator factor
STD.DEV	Standard deviation
MDE	Meskerem, Desta and Elias

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ABSTRACT

*The purpose of this study is to study the effect of supply chain management practices on the organization performance**: -** in case of MDE bottling PLC Dire Dawa, Ethiopia. For this study Five key dimensions of Supply chain management practices (strategic supplier partnership, customer relationship, quality and level of information sharing and lean practices) were used as independent variables, while market and financial performance variables were used to measure the organizational performance. The researcher applied a descriptive research type and used a mixed research approach both quantitative and qualitative. Data were obtained via questionnaires from a sample of 64 people which worked in different functional area of the case organization. The researcher followed a stratified sampling and simple random sampling technique to use all the target population of 64. Correlation analysis between SCM practices and company performance showed that, internal lean practice (0.7083), level of information sharing (0.6792) and quality of information sharing (0.5056) have positive and strong effect to company performance with the statistical significant level, whereas Strategic supplier relationship (0.47030) and customer relationship (0.30350) have positive and medium effect to company performance. with the statistical significant level. The regression result show that the proportion of variance in dependent variable that can be explained by independent variable is 76.33 %, while other factors not studied in this research contributed 23.67% of the organizational performance on of MDE bottling PLC. The study is limited on some issues of supply chain management practices. This research can be further explored by adding more Supply chain management practice dimensions like BPR, JIT, and also formed a basis in carrying out a study on the effects of supply chain management practices on employee satisfaction in MDE bottling company.*

Keywords: *supply chain management, strategic supplier partnership, customer relationship, level of information sharing, quality of information sharing, lean practices, and company performance.*

Chapter One

1.ITRODUCTION

This chapter presents a summary of an introduction chapter one and it consists background of the study, research problem, research objectives, research questions, scope of the study, limitation of the study, definition of terms and organization of the thesis respectively.

1.1 Background of the Study

Globally, supply chain management (SCM) serves as one of the mechanisms that manufacturing companies employ for purposes of achieving competitive advantage over their competitors (Kremyeeh & Dza, 2018). It entails the management and planning of all activities related to sourcing and procurement, conversion, as well as all activities as regards logistics management. Council of Logistics Management (CLM) defines SCM as the systemic, strategic coordination of the traditional business functions and tactics across these businesses functions within a particular organization and across businesses within the supply chain for the purposes of improving the long-term performance of the individual organizations and the supply chain as a whole. SCM has been defined to explicitly recognize the strategic nature of coordination between trading partners and to explain the dual purpose of SCM: to improve the performance of an individual organization, and to improve the performance of the whole supply chain. The goal of SCM is to integrate both information and material flows seamlessly across the supply chain as an effective competitive weapon Childhouse and Towill, (2003)**.**

SCM deals with total business process excellence and represents a new way of managing the business and relationships with other members of the supply chain (Cooper et al., 1997). Supply chain management practices(SCMP) are defined as the set of activities undertaken by an organization to promote effective management of its supply chain. The practices of SCM are proposed to be a multidimensional concept, including the downstream and upstream sides of the supply chain. SCMP were described by different scholars; Donlon (1996) describes the latest evolution of SCMP, which include supplier partnership, outsourcing, cycle time compression, continuous process flow, and information technology sharing. Tan et al. (1998) use purchasing, quality, and customer relations to represent SCM practices, in their empirical study. Alvarado and Kotzab (2001) include in their list of SCM practices concentration on core competencies, use of

inter-organizational systems such as electronic data interchange (EDI), and elimination of excess inventory levels by postponing customization toward the end of the supply chain.

A coping up strategy suggests that a relationship with suppliers and other partners should be supported with an appropriate level of collaboration information technology, information system, and lean agile principles.

The literature is replete on the dimensions of SCM practices from variety of perspectives. Li et al. (2006) attempted to develop and validate a measurement instrument for SCM practices. Their instrument has five empirically validated and reliable dimensions, which include strategic supplier partnership, customer relationship, information sharing, information quality and postponement. Mustefa (2014) used five dimension of Supply chain management Practices, including strategic supplier partnership, customer relationship, information sharing, information quality.

Organizational performance is difficult to measure and there is no universally accepted definition (wijetunge, 2016). However, Organizational performance refers to how well an organization achieves its market-oriented goals as well as its financial goals (YaminS, 1999).and internal lean practices. A number of prior studies have measured organizational performance using both financial and market criteria, including return on investment (ROI), market share, profit margin on sales, the growth of ROI, the growth of sales, the growth of market share, and overall competitive position (Vickery et al., 1999; Stock et al., 2000; and Zhang., 2001). Performance of organization can be measured by operational performance and financial performance. These dimensions are divided into the following components: market share, return on investment (ROI), increase market share, sales growth, return on investment growth, sales margins and the overall situation of competition (Li et al ,2006).

The bottled water market started in Europe and Russia by the early 1900‟s and extended later to `the US and China. In the United States and Asia bottled water become the fastest growing drink choice and spends billions of dollars each year (Beverage Marketing Corporation, 2004). The real boost of bottled water commenced in 1968 when the French company "Vittel" revolutionarily launched the first plastic bottled water- aimed for general public consumption (Finlayson, 2005).

Africa is an emerging market for bottled water investment. As one of the fastest growing economies in Africa, home to the continent's second largest population, and the water tower of Africa; Ethiopia represents a compelling investment opportunity particularly in Water Bottling oriented sectors (Ethiopian Business Review, 2013). In less than a decade time, there has been different bottled water producers entering into the business and presently there are more than fifty-seven mineral and bottled water producers, majority of them passed through a certification process mandated by Ethiopian Quality and Standards Authority and ECAE (Bottled Drinking Water Specification, ES 597:2001).

It was in 1999 that the first bottled water highland springs, was introduced to Ethiopia, by the Apex bottling company a pioneer in the industry established by Ermias Amelga partners. Water bottling companies certified by Ethiopian Conformity Assessment Enterprise (ECAE) for producing either mineral or spring water in all corners of the country. Investors in to the sector claim that there is a huge demand in the market for bottled water, which is what led to the emergence of so many brands (MOFED, 2007).

The expansion of bottling firms as well as the increased production and marketing opportunity of bottled water are clear indicators of high demand for such products that needs effective Supply Chain Management approach to satisfy customer needs for products and services by integrating the business process of the firm with the entire value chain from raw material procurement to the product or service delivery to customers .As a real business, bottled water companies are sharply competing against each other .

In Ethiopia firms, the practice of integration, collaboration and having willingness and trend of managing the supply chain from supplier to customer is traditional, which is not more than just buy and sale (transactional) relationship (Belay, 2011). Even if there is supply by default it is not well managed, and implemented for getting the benefits resulted from effective SCM. Therefore, the overall intention of this paper is to study the supply chain management practices and its effect on performance of MDE bottling company in Dire Dawa, Ethiopia and forward possible suggestions that would enable the company to be more competitive.

1.2 Background of the company

MDE bottling private limited company (PLC) was established in 2016 and located in Dire Dawa city administration on Djibouti road near Hamdael real state. The MDE bottling company produces bottled water known as **'Aqua UNO'** from the upper green lands of Dire Dawa where it has been infused with essential by filtering through natural dense sand. It is purified using the latest technology: activated carbon filtration, ultra-fine micro filtration, reverse osmosis and ozone treatment under strict quality control. The MDE bottling company committed to doing business responsibly and seeking opportunities to make a difference. MDE bottling company has been awarded by the Ethiopian Conformity and Assessment Authority for its high quality and Original Taste. The factory lies on a 20,000-sqm area in Dire Dawa. MDE bottling company has state-of-the-art manufacturing and bottling at its source. The water plant can produce (1.5lit//sec∗60mint∗8hurs/day∗304 hour/year/ 13,132,800 liters of still water. The laboratory is equipped with the latest technology: activated carbon filtration, ultra-fine micro filtration, reverse osmosis and ozone treatment under strict quality control. This processes gives **Aqua UNO** bottled water its signature soft test. The factory's production equipment is sourced from Europe. The plant also employs over 96 people. MDE bottling company is committed to providing safe and premium quality bottled water for its customers. Raw materials, bottling, packaging, warehousing and point of sales operations are continuously checked to ensure that the highest quality standards and specifications are consistently meet. Samples are collected from every step every single day and checked for compliance (source: MDE bottling PLC office, business proposal, 2016).

1.3 Statement of the Problem

Christopher (1998) found out that current businesses no longer compete as solely autonomous entities, but rather as supply chain. Many organizations have begun to recognize that SCM is the key to building sustainable competitive edge for their products and/or services in an increasingly crowded marketplace and enhancing organizational and overall supply chain performance Li et al. (2006). Therefore, a well-designed supply chain management increases the competitive advantages for any of the business company. SCM practices are expected to increase an organization's market share, return on investment and improve overall competitive positions. For instance, Tan et al. (1998) asserted that customer relations and purchasing practices impact the effectiveness of SCM strategy and lead to financial and market performance. Different organizations and countries have a different set of practices in implementing SCM this is due to the fact different managerial perceptions of how supply chain components are related to each other. In addition, manufacturing firms found in developing countries are using their own individual efforts to improve their supply chain management based on individual efforts without considering the holistic supply chain theories and management philosophies; they are not as such effective. Supply Chain Management practice in Ethiopia is still in the infancy stages, there are small numbers of manufacturing companies integrating it to their organizational system. 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 (Haile Michael, 2011). Based on an interview made in the case company with a manager some distributor agents leave and join other bottling companies, on the other hand, informal pilot interview made with two of their distributer agents in Dire Dawa who involved with SCM activities of **Aqua UNO** Water bottling to identify major challenges they faced with the case company , is that they revealed hording bottled water in the store and not giving real information about the availability of product are the major SCMP problem exhibited at MDE bottling PLC. Hence undertaking in-depth research in dimensions of strategic supplier partnership, customer relationship, level of information sharing, lean system and performance with some performance metrics would help the organization to have appropriate SCM practice to mitigate those problems. Based on the above reviewed literatures and interviews, the researcher inspired to study the effect of supply chain management practices on the performance of MDE water bottling PLC.

1.4 Basic research questions

The purpose of this study is primarily aimed to answer the effect of supply chain Management practice on performance in the case of MDE bottling plc, and more specifically to answer the following basic research questions: -

1.What do the current supply chain managements practices of MDE bottling PLC looks like?

2. Is there relationship between SCM practice (Strategic supplier partnership, Customer relationship, Level of information sharing, Quality of information sharing, and Internal lean practice), and Organizational Performance of MDE bottling PLC?

3.What is effect of Strategic supplier partnership, Customer relationship, Level of information sharing, quality of information sharing, and internal lean practice on organizational performance of MDE bottling PLC?

4.What is the extent of the current performance of MDE bottling PLC looks like??

5.What are the extent of difficulties faced by the case company in improving SCM practice?

1.5 Objective of the study

1.5.1 General objective

The major objective of this study is to investigate the effect of supply chain management practices in terms of strategic supplier partnership, customer relationship, level of information sharing and quality of information sharing, lean system of the organization and to determine whether supply chain practices has impact on organizational performance of MDE bottling plc.

1.5.2 Specific objectives

The specific objectives of the thesis are:

- ✓ To study the current supply chain management practices in terms of Strategic supplier partnership, Customer relationship, Level of information sharing, Quality of information sharing, and Internal lean practice of the case company.
- ✓ To study the effect of supply chain management practices on the case Company performance.
- ✓ To study the extent of the current performance of MDE bottling PLC
- ✓ To identify the difficulties to improve the case Company's SCM practices**.**

1.6 Research hypotheses

According to Leedy et al., (2010), the research hypothesis is a reasonable conjecture, an educated guess and its purpose is to provide a temporary objective, an operational target, a logical framework that guides researchers as they collect and analyze data. Therefore, in this study the researcher used the following hypothesis: -

H0: Strategic supplier partnership has no significant effect on organizational performance

H1: Strategic supplier partnership has significant effect on organizational performance

H0: Customer relationship has no significant effect on organizational performance

H1: Customer relationship has significant effect on organizational performance

H0: Level of information sharing has no significant effect on organizational performance

H1: Level of information sharing has significant effect on organizational performance

H0: Quality of information sharing has no significant effect on organizational performance

H1: Quality of information sharing has significant effect on organizational performance

H0: Internal lean practice has no significant effect on organizational performance

H1: Internal lean practice has significant effect on organizational performance

Whereas;

H1: The Alternative Hypothesis- the effect observed in the sample reflects a “significant” effect on organizational performance

Ho: The Null Hypothesis- there is no “significant” effect on organizational performance.

1.7 Significances of the study

This study will add onto the body knowledge of supply chain management by focusing on the development of the practice in a bottled water industry in Ethiopia. Further, it adds the knowledge on the effect of supply chain management practices and performance in the bottling industry, particularly to MDE bottling PLC that produces **‘Aqua UNO** bottled water. The bottled water companies in Ethiopia will benefit from the study because the documentation of how the practice of supply chain management is carried out in water bottling companies. The critique of the practice and the documentation of the challenges offer an impetus to the companies to devise better ways of practicing the same. The recommendations given will guide them in strengthening the practice in such organizations. Firms in other industries will also find this study useful as results show how the practice of supply chain management is carried out in the bottled water industry and what practices they can borrow from the same. Students, researchers, scholars, consultants, and other practitioners will find this study a useful guide for purposes of learning, discussions, consulting, and future research in the area.

1.8 Scope of the Study

SCM encompasses vast areas of managerial practices. However, it is difficult and unmanageable to conduct the study in all areas that summarizes SCM in terms of time, finance, and research manageability. Therefore, the scope of this study is delimited to the effect of SCM practices and performance position of MDE bottling PLC in terms of the topic**.** The subject scope of this study is also delimited to the company’s point of reference towards strategic supplier partnership, customer relationship, level of information sharing, quality of information sharing and Internal lean practices. Organizational performance incorporates market share, return on investment, the growth of market share, the growth of sales, growth in return on investment, profit margin on sales and overall competitive position. The area of the study is also delimited to the case company i.e., MDE bottling PLC through assessing how the company interact with their upper stream (suppliers) and the down

streams of the supply chain. Methodologically the researcher used stratified and simple random sampling method to select an optimal sample size from the identified target population.

1.9 Limitation of the study

Among the major limitation the researcher face was few respondents didn't give answer for some open ended questionnaires. Since, it was difficult to cover entire domain of supply chain just in one study. The research sample didn't incorporate all the supply chain participants due to time constrained so that it couldn't be applied to the complete chain of the company under investigation. On the other hand, constructs of SCM are not only limited to SCM practices selected in this study. Therefore, it was not representing all constructs that could explain SCM practices.

1.10 Definition of Terms and concepts

- **Supply Chain Management Practices**: the set of activities undertaken by an organization to promote effective management of its supply chain (Li et al. 2006).
- **Strategic supplier partnership**: The long-term relationship between the organization and its suppliers. It is designed to leverage the strategic and operational capabilities of individual participating organizations to help them achieve significant ongoing benefits (Li et al. 2006).
- **Customer relationship**: The entire array of practices that are employed for the purpose of managing customer complaints, building long-term relationships with customers, and improving customer satisfaction (Li et al. 2006).
- **Level of information sharing**: The extent to which critical and proprietary information is communicated to one 's supply chain partner (Li et al. 2006).
- **Quality of information sharing**: Refers to the accuracy, timeliness, adequacy, and credibility of information exchanged (Li et al. 2006)
- **Internal Lean Practices**: Lean is focused on identifying and eliminating waste throughout a product 's entire value stream, extending not only within the organization but also along its entire supply chain network (Boyle and Scherrer, 2009)
- **Organizational performance**: Organizational performance refers to how well an organization achieves its market-oriented goals as well as its financial goals (wijetunge, 2016).
- **The case company**: MDE bottling private limited company

1.11 Structure of the thesis

The paper is organized into five chapters. The first chapter contain introduction; which consists of background of the study, background of the company, statement of the problem, research question, objectives of the study, significance of the study, scope and limitation of the study. Chapter Two contains related theoretical and empirical literature review, which support the content of the study about SCMP and Organizational Performance. The third chapter deals with the methodology of the research and the fourth chapter presents data analysis, findings and discussion of the data gathered. The fifth chapter will present the summary, conclusion and recommendations of the research and area of further studies.

CHAPTER TWO

2. REVIEW OF THE RELATED LITERATURE

This chapter reviews relevant theoretical and empirical literatures on the key areas that the study covers. It examines what varies scholars and authors have presented about concept of supply chain management practices. The theoretical framework introduces and describes the theory which explains why the research problem under study exists. A theoretical framework consists of concepts, together with their definitions, and existing theories that are used for the particular study (Sekaran 2010).

2.1Theoretical literatures

2.1.1 Concepts of Supply Chain Management

One of the most relevant evolutions of modern business management is that companies compete as networks of partners, rather than as single autonomous companies. Traditionally composed of suppliers, manufacturers, wholesalers, and customers, these partners form a network of relationships that is known as a supply chain. The term SCM was first used in the 1980s and as such is a relatively new discipline within management theory with tools and concepts still being developed. SCM was one of the most popular management concepts to impact the business and the logistics concept in the 1990s.

According to Tan et al. (2002) in the last few years the concept of SCM has received increasing attention from academicians, consultants, and business managers alike. Furthermore, Li et al. (2006) identify as many organizations have begun to recognize that SCM is the key to building sustainable competitive edge for their products and/or services in an increasingly crowded marketplace. However, the concept of SCM has been considered from different points of view in different bodies of literature such as purchasing and supply management, logistics and transportation, operations management, marketing, organizational theory, and management information systems Croomet al. (2000). Even though different things contribute to differences in the concepts of SCM, different researchers tried to describe the concepts of SCM as follows. Robinson and Kalakota (2000) view the supply chain quite simply as a “process umbrella” under which products are developed and delivered to customers. As Li et al. (2006) described, SCM is a concept which its goal is to integrate both information and material flows seamlessly across the supply chain as an effective competitive

weapon. In addition, according to Arawati (2011), SCM includes managing supply and demand, sourcing raw materials and parts, manufacturing and assembly, warehousing and inventory tracking, order entry and order management, distribution across all channels, and delivery to the customer. However, definitions and approaches to SCM vary substantially from organization to organization because it is influenced by many different fields and researchers in the area of SCM. CLM defines SCM as the systemic, strategic coordination of the traditional business functions and tactics across these business functions within a particular organization and across businesses within the supply chain for the purposes of improving the long-term performance of the individual organizations and the supply chain as a whole. SCM has been defined to explicitly recognize the strategic nature of coordination between trading partners and to explain the dual purpose of SCM: to improve the performance of an individual organization, and to improve the performance of the whole supply chain Li et al. (2006). Supply chain by Christopher (1998) defined as a network of various organizations involved both through upstream and downstream linkages in different kinds of activities and processes. Meanwhile, Moslem et al. (2013) „the task of integrating organizational units along a supply chain and coordinating materials, information and financial flows in order to fulfill (ultimate) customer demands with the aim of improving competitiveness of the supply chain as a whole". The upstream parties, as being described by Handfield and Nichols (1999) consists of an organization's function, processes and network of suppliers while the downstream function on the other hand concerns the distribution channels, processes and functions where the product passes through to the end customer. Therefore, Supply chain management is a strategic factor for the better attainment of company goals such as enhanced competitiveness, improved customer service and increased profitability Mamun (2011). Integration of internal process with external supply chain network could be improved through communication, partnerships, alliances and cooperation Tumaini M. K. (2011). The pillars of supply chain integration are cooperation, collaboration, information sharing, trust, partnership, shared technology, and a fundamental shift away from managing individual function processes, to managing an integrated chain of processes.

Tumaini M. K. (2011) also agreed on the efficiency and effectiveness of the supply chain practices among a company. 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, back orders and inventory levels. Whereas effects are measured by service quality and the service needs. Therefore, for the company/firm to survive competition, depends on how well it meets customer preferences in terms of service, cost, quality,

and flexibility, by designing a supply chain which will be more effective and efficient than competitors.

2.1.2 Supply Chain Performance (SCP)

Supply chain performance can be measured both in terms of customers' level of satisfaction and the costs incurred (Estampea, et al., 2013). Customer ‘s satisfaction level is a sign of the required standard service level of a company, which is closely related to the whole performance of its supply chain (Chan, 2003). Evaluating supply chain performance is a complex process as it involves several actors collaborating and interacting each other to achieve a given strategic supply chain objective (Estampea, et al., 2013). Companies to improve the overall supply chain performance and to track the supply chain operations, they share supply chain information among the partners to reduce the lack of demand visibility as it goes from downstream end customer to upstream partners in the chain, work closely with customers and suppliers in order to improve information and product flows, and reduce surprises from demand fluctuations, enhance internal processes integration, work with suppliers to reduce lead times, reduce risk of supply disruption, mitigate the bullwhip effect, reduce supply chain cost of all members through collaboration and trust. (Krajewski, et al., 2010). Supply chain performance is influenced by several factors like sourcing strategy, distribution strategy and, inventory management strategy, collaboration with partners, information technology, etc.

According to Jonsson (2008), strategic sourcing and the development of the supplier relationship is really significant for the company’s and supply chain performance. The efficiency and the competitiveness of the company’s supply chain can be affected by the choice of, sourcing strategy, collaboration strategy with suppliers. Suppliers are as equally important as the customers for a company’s performance and competitiveness.

There are different performance indicators that companies use to assess the performance of the supply chain. The following parameters can be used to evaluate the performance of the supply chain (Rejewski & Ritzman, 2002): (a) Lead time – the time interval between placing purchase order and delivery of the product to the customer. (b) Cost of order processing, shipping and delivery. (c) Capacity including warehousing, transportation and shipping capacity. (d) Quality of suppliers - the ability to meet quality standards set by manufactures. (e) Delivery has three dimensions including delivery speed, production lead time & delivery reliability (Coyle et al. 2003). (f) Flexibility (ability to adapt to their changing environment). A firm ‘s quality management approaches and supply chain

management practices complement each other and need to be integrated to achieve superior financial and business performance (Mellat-Parast, 2013). This means, the higher the supply chain performance, the greater will be its contribution for quality management and organizational performance. Practices such as supplier relationship and information sharing facilitate the integration of quality management and supply chain management.

2.1.3 Internal Operation

In addition to the upstream and downstream integration, SCM also emphasize on the importance of both effectiveness and efficiency of firm's internal operations on its performance. This is due to a significant element of SCM practice is an internal operations and they are the basis for developing a competitive advantage before embarking into external integrations. Poor internal operations can lead to failure in coordinating with external partners Handfield and Nichols (1999). Internal operation summarizes all activities related to production system and internal, logistics flow Handfield and Nichols (1999). To judge the SCM practice as an effective and value adding the internal operation should be flexible in responding to changing market needs, which is expressed on the basis of agility principles. This means that, a production system must be able to perform rapid change over in both order patterns and mass customization Lambert and Cooper (2000). Power and Soha (2001) find that technology utilization, continuous improvement and computer based automation in manufacturing are some of characteristics of agile/flexible organization. Thus, the effectiveness of SCM can be examined by the ultimate effect it would have on customer satisfaction through responsiveness and lower price resulting from lean internal operations.

2.1.4 Supply Chain Management Practices

SCMP have been defined as a set of activities undertaken in an organization to promote effective management of its supply chain. The practices of SCM are proposed to be a multidimensional concept, including the downstream and upstream sides of the supply chain Li et al. (2006). Tan et al. (2002) identify six aspects of SCMP through factor analysis: supply chain integration, information sharing, supply chain characteristics, customer service management, geographical proximity, and just in time capability. Alvarado and Kotzab (2001) include in their list of SCM practices concentration on core competencies, use of inter-organizational systems such as elimination of excess inventory levels by postponing customization toward the end of the supply chain. Chen and Paulraj (2004) presented SCM framework/practice that encompassed three dimensions: supply network structure,

characterized by strong linkages between members, low levels of vertical integration, non-power based relationships; long-term relationships, managed with effective communication, cross-functional teams, and early supplier involvement in crucial projects, planning processes; and logistics integration. Min and Mentzer (2004) identify the practices of SCM as including agreed vision and goals, information sharing, risk and reward sharing, cooperation, process integration, long-term relationship and agreed supply chain leadership. Arawati (2011) identify SCM dimensions as it's encompasses: Strategic Supplier Partnership, developing trust and collaboration among supply chain partners as well as customers; Lean Production, is associated with continuous pursuit of improving the processes, a philosophy of eliminating all non-value adding activities and reducing waste within an organization;

Postponement Concept, Postponement involves the process of delaying final product configuration until the actual order requirement is specified by the customer: Keeping products in semi-finished would allow more flexibility and customization in completing the final products and also enables a company to respond more quickly to market demand and New Technology and Innovation. Li et al. (2006) constructs upstream (strategic supplier partnership) and downstream (customer relationship) sides of a supply chain, information flow across a supply chain (level of information sharing and quality of information sharing), and internal lean practice (waste minimization). Therefore, in this research the SCM practice is conceptualized as a five dimensional constructs which are strategic supplier partnerships, customer relationship, the level of information sharing, quality of information sharing, and lean practices. The detail of each independent variable is presented as follows.

2.1.4.1 Strategic Supplier Partnership

Effective partnerships with suppliers can be a critical factor to guide supply chain management Li et al. (2006). Strategic partnerships with suppliers are organized efforts to create and maintain a network of qualified suppliers. This effort includes all activities that are needed to improve the current performance of suppliers. Strategic partnership emphasizes direct relationship and long-term and encourages mutual planning and efforts to resolve problem. Supplier organizations can work together more closely and eliminate useless time and effort Moslem et al. (2013). Such strategic partnerships are entered to promote shared benefits among the parties and ongoing participation in one or more key strategic areas such as core raw materials, technology, products, and markets Yoshino and Rangan (1995). The main objective of strategic partnerships with suppliers is increasing the functional capability desired supplier Rosenzweig (2003). In this study, the researcher is

conceptualized quality base, long-term relationship, communication, cross-functional teams and supplier involvement to measure strategic supplier relationships.

2.1.4.2 Customer Relationship (CR)

CR consists of all the ways that are used for the purpose of controlling and managing customer complaints, creating long-term relationships with consumers and to improve consumer satisfaction Moslem et al. (2013).Close relationships with customer organizations enables to distinguish their products to competitors, Retain customer loyalty and this value is protected largely to consumers Li et.al(2006) Good relationships with supply chain members, including customers, are needed for successful implementation of SCM programs Moberget al. (2002). Close customer relationship allows an organization to differentiate its product from competitors, sustain customer loyalty, and dramatically extend the value it provides to its customers Magretta (1998). As discussed in Niknia (2007) the main customer relationship goals are identifying new business opportunities, reduce missed opportunities, reducing customer defection, creating customer loyalty, improve customer service, improve organization appearance, reduce costs, and increase revenue. For this research purpose, the CR is conceptualized from the literature review and practicability in Ethiopia as the way of building long-term relationships with customers through creating customer loyalty, reducing defect products, improving customer services, reducing price/cost, managing customer complaints and working on improving customer satisfaction.

2.1.4.3 Internal Lean Practices

The term ' lean 'is used to refer to a system that uses less input to produce at a mass production speed, while offering more variety to the end customers. Elimination of waste is a fundamental idea within the lean system. The core thrust of lean practices are that these practices can work synergistically to create a streamlined, high quality system that produces finished products at the pace of customer demand with little or no waste (Woldemichael, 2012). Today, lean is evolving into a management approach that improves all the processes at each level of an organization (Mwale, 2014).

It is the process of removing all of the wasted time and resources in the production process. Lean can be considered a philosophy, a work culture, a technique, a management concept, a value, a methodology or an ethos. Today, lean is evolving into a management approach that improves all the processes at each level of an organization. Lean practices help to eliminate waste in all procurement

cycles, prevent shortages, reduce inventory investment, reduce procurement lead time and cost, increase inventory turnover and ensure customers satisfaction (wijetunge,2016).

2.1.4.4 Level of information sharing

Information sharing has two aspects: quantity and quality and both of aspects are important for SCM practice (Li et al., 2006). Level of information sharing refers to the extent to which critical and proprietary information is communicated to one's supply chain partner (Li et al., 2006). Shared information can vary from strategic to tactical in nature and from information about logistic activities to general market and customer information (Mentzer et al., 2000). The impact of information sharing on SCM depends on what information is shared, quality on shared information, and company's capability in using and translating the information in to a supply chain strategy and operational activities (Moberg et al, 2002). Basically, Information sharing can vary from strategic to tactical & from information about logistics activities to general market & customer information (Mentzer et al. 2004).

2.1.5.5 Quality of information sharing

Includes such aspects as the accuracy, timeliness, adequacy and credibility of information exchanged (Li et al., 2006; Moberg, 2002). While information sharing is important, the significance of its impact on SCM depends on what information is shared, when and how it is shared and with whom (Holmberg, 2000). Companies need to view their information as a strategic asset and ensure that it flows with minimum delay and distortion (Li et al., 2006). Having, different interests & opportunities by supply chain participants affect the quality of information. Given these predispositions ensures that, the quality of the shared information becomes a critical aspect of effective supply chain practice (Feldmann and Muller 2003). Therefore, organizations need to view their information as a strategic asset & ensure that it flows with minimum delay & distortion (Feldmann et al. 2003).

According to Mollel (2015), the most essential characteristic features for information quality includes the following:

- Reliability - It should be verifiable and dependable.
- Timely - It must be current and it must reach the users well in time, so that important decisions can be made in time.
- Relevant - It should be current and valid information and it should reduce uncertainties.

- Accurate - It should be free of errors and mistakes, true, and not deceptive.
- Sufficient - It should be adequate in quantity, so that decisions can be made on its basis.
- Unambiguous - It should be expressed in clear terms. In other words, in should be comprehensive.
- Complete - It should meet all the needs in the current context.
- Unbiased - It should be impartial, free from any bias. In other words, it should have integrity.
- Explicit - It should not need any further explanation.
- Comparable - It should be of uniform collection, analysis, content, and format.
- Reproducible - It could be used by documented methods on the same data set to achieve a consistent result.

2.1.5 Organizational Performance

Organizational performance is defined as how a company achieving their market goals, and also its overall goals (Yamin, Gunasekruan, &Mavondo, 1999). Increase productivity by using lower cost on inventory management are the short term goals of supply chain management long term goals of supply chain are enhancing profit (Tan, Kannan, &Hand field, supply chain management: Supplier performance and firm performance, 1998). Competitive advantage is also value a company provides to their customer which is other company enable to provide same value. Capabilities of company may give competitive advantage over the competitors (McGinnis &Vallopra, 1999).

According to Li et.al (2006), effective supply chain management has become a potentially valuable way of securing competitive advantage and improving organizational performance since competition is no longer between organizations, but among supply chains. Thus, it is not enough to improve efficiencies within an organization, but their whole supply chain has to be made competitive and the understanding and practicing of SCM becoming an essential prerequisite for staying competitive in the global race and for enhancing profitability (Moberg et al., 2002 and Tan et al., 2002).

Tracey et al., (2005) measure performance through four separate dimensions including perceived value, customer loyalty, market performance and financial performance. Similarly, Tan et al., (2002) used six items for performance including product quality, customer service, competitive position, market share, average selling price and return on assets. Chen and Paulraj (2004a, b) used supplier performance and buyer performance to assess the financial performance of the buying firm. Vickery et al., (2003) used customer service performance followed by financial performance as the

performance constructs. Jin (2006) also assessed operational supply chain role performance via three levels of performance criteria: strategic, operational and financial.

Financial metrics have served as a tool for comparing organizations and evaluating an organization's behavior over time (Holmberg, 2000). Any organizational initiative, including supply chain management, should ultimately lead to enhanced organizational performance. A number of prior studies have measured organizational performance using both financial and market criteria, including ROI, market share, profit margin on sales, the growth of ROI, the growth of sales, the growth of market share, and overall competitive position (Vickery et al.,1999; Stock et al., 2000; and Li et al., 2006). Market share, return on investment, the growth of market share, the growth of sales, growth in return on investment, profit margin on sales and overall competitive position are adapted as organizational performance measures in this study. Organizational performance can be measured by Financial and market performance metrics as follows.

2.1.5.1 Financial performance metrics

2.1.5.1.1 Profit margin

Profit margin is the ratio of net operating profit to sales (Richard et al., 2009). It refers as a measure of profitability since it measures how much out of every dollar of sales a company actually keeps in earnings. Implementation of SCM practices such as customer relationship, information sharing improve organizational profit margin because it allows organizations to access valuable information which will enable them to differentiate its products from the competitors, and hence sustain customer loyalty.

2.1.5.1.2 Return on investment (ROI)

ROI is usually defined as the ratio of net operating profit to the net book value of assets. The net book value of assets is equal to the firm's assets less the value of intangibles and total liabilities (Richard et al., 2009). Return on investment (ROI) is one of the most popular performance measurement and evaluation metrics used in business analysis (Andru and Botchkarev, 2011).

2.1.5.1.3 Return on assets (ROA)

This is a very popular measure of performance. It is defined as the ratio of net operating profit to the firm's assets recorded on its balance sheet (Richard et al., 2009). ROA is fundamental gauge of

efficiency, measuring how well your business is using its assets to generate profit. Supply chain management, meanwhile, is all about improving efficiency, gaining a competitive advantage by streamlining the way you get products into your company and then out to your customers. Improving supply chain management boosts ROA through its effect on both profit and assets. Lean practices like just-in-time boost profits (reduces operating costs) by eliminating excess inventory.

2.1.5.2 Market performance metrics

2.1.5.2 .1 Market share

Market share represents the percentage of an industry, markets total sales, that is earned by a particular company over a specified time period. Market share is a measure of consumer's preference for a product over other similar product. A higher market share usually indicates, greater sales, lessor effort to sales more and a strong barrier to entry for other compotators. Market share is calculated by taking the company sales over the period and dividing it by the total sales of the industry over the same period. A competitive supply chain in the market characterized by efficient use of chain resources which would lead to lower product cost, better product quality, faster response for customer demand and therefore eventually higher market share (Koh et. al, 2007 citied by Eyob). Changes in market share have a larger impact on the performance of companies in mature or cyclical industries where there is low growth. In contrast, changes in market share have less impact on companies in growth industries. In these industries, the total pie is growing, so companies can still be growing sales even if they are losing market share. For companies in this situation, the stock performance is more affected by sales growth and margins than other factors. Companies with the highest market share in their industries almost invariably have the most skilled and dedicated employees. Bringing best employees on board reduces expenses related to turnover and training, and enables companies to devote more resources to focus on their core competencies. The factory market share indicates there no stability of growth for the past few years.

2.1.5.2.2 Market share growth

A competitive supply chain in the market might be characterized by efficient use of chain resources which would lead to lower product cost, better product quality, faster response and therefore eventually higher market share (Koh et al., 2007).

2.1.5.2 .3 Sales Growth

Sales growth is the percentage increase in sales the current year compared to the previous year. Sales growth is considered positive for the company survival and profitability. It may result in increased dividends for shareholders and/ or high stock prices. If industry leader position is still far reaching bench marking supply chain performance against the best practice in the industry would provide incentives for further improvement that will eventually lead to increase sales (Koh et. al, 2007 citied by Eyob). Various comparisons of Sales Growth can determine various approaches that a company can take to increase its sales. The type of Sales Growth analysis followed by a company determines their position in the market. A further detailed analysis like analyzing customer sales growth will further determine the reason for the increase or decrease in sales growth.

A good sales growth can always be used for the benefits of the employees and company in terms of providing salary raise, acquiring new assets, an expansion of the company or the product line. A negative growth is an undesirable outcome, hinting a wrong strategy or decisions. The factory experience of sales growth indicates there is unstable sales performance in the market. A competitive supply chain in the market might be characterized by efficient use of chain resources which would lead to lower product cost, better product quality, faster response and therefore eventually higher market share (Koh et al., 2007).

2.1.6 SCM practices in Ethiopia

Ethiopia's economy is based on agriculture which in 2015, contributed about 41.4 percent of the gross domestic product (GDP), 90 percent of foreign currency earning, and 85 percent of employment. The industrial sector, which mainly comprises small and medium enterprises, accounted for about 15.6 percent of the GDP. Generally, the overall economic growth of the country has been highly associated with the performance of the agricultural sector (Ethiopian Investment Guide, 2016).

The country adopted a free market economic policy in 1992, and in line with this has promoted private investment. With the introduction of a free market economy, Ethiopia has implemented a number of reforms including the privatization of state owned enterprises, liberalization of foreign trade, deregulation of domestic prices, and devaluation of the exchange rate. With its enormous resources, the country has untapped investment opportunities, huge market access and low cost of doing business. The country has an excellent climate, fertile soil and huge domestic raw material base. Its

location is strategically close to the lucrative markets of the Middle East, Asia and Europe (Embassy of FDRE in London, 2011).

However, Ethiopia has not benefiting from these resources and opportunities available due to several reasons including poor infrastructure in transport and communication as well as shortage of electric power supply which created a challenge for most companies in doing business in the country.

Limitations in physical infrastructure increase the cost of transportation and also hinder the fast movement of products, information and money in business transactions. Poor infrastructure also limits the size of the market available in nearby countries such as Sudan and Kenya which could provide a potential source of customers for Ethiopian business people. Air transport is also very limited access and at the same time the carrier cost to use this route is too high (Dereje, 2012).

Since SCM is concerned with cost effective ways of managing materials, information and financial flows from the point of origin to the point of utilization to satisfy customer requirements (Narasimha,2007), it is difficult to consider that SCM is properly practiced in Ethiopian business environment.

Manufacturing industries are indispensable to build up any country's physical economic base. In Ethiopia, however, since these industries are not developed enough to meet emerging demand from user industries both quantitatively and qualitatively, it is necessary to rely heavily on imports. Manufacturing and delivery of product involve many parties that encompass foreign and local suppliers of different kinds of inputs like raw materials, chemicals and others; manufacturers of products, and distributors up to the end users.

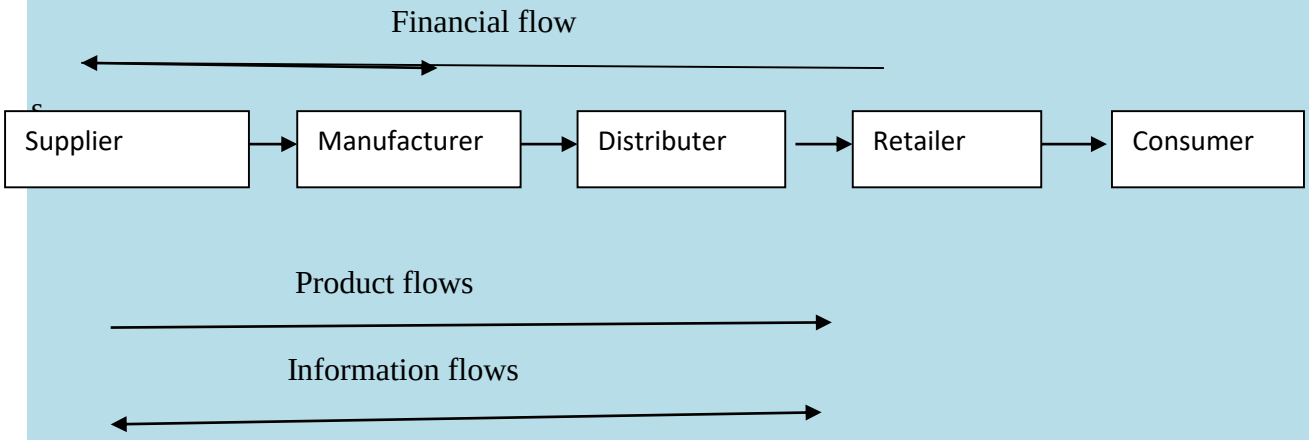
Supply of production equipment for the case company heavily depend on imports. Like other businesses activities in the country, the flow of money along the supply chain of the case company is conducted in cash and cheque transactions or transfers to the beneficiary account, while information about business transactions are communicated through FAX, telephone, and internet.

2.1.7 How a Supply Chain Works in companies?

Chopra and Meindl (2007) put it explicitly that the supply chain starts with a customer order for a product and goes until raw material for making this product is sourced and the final product reached the consumer. The process encompasses four separated but interlinked cycles filled with many

activities. The cycles are customer order cycle, replenishment cycle, manufacturing cycle and procurement cycle. These activity cycles in a supply chain begins either in an anticipation of customer orders (push process) or initiated by a customer order (pull process). In the process of working to fulfill a customer need, three basic flows occur in every supply chain. They are financial flows, product flows & information flows.

***Figure** 2: 1 Supply chain network, processes and flows*



Source: adapted from Chopra and Meindl, (2007).

2.1.8 Competitive Advantage

Competitive advantage is the extent to which an organization is able to create a defensible position over its competitors (McGinnis MA, 1999). It comprises capabilities that allow an organization to differentiate itself from its competitors and is an outcome of critical management decisions (Tracey M, 1999). It comprises capabilities that allow an organization to differentiate itself from its competitors and is an outcome of critical management decisions. The empirical literature has been quite consistent in identifying price/cost, quality, delivery, and flexibility as important competitive capabilities. In addition, recent studies have included time-based competition as an important competitive priority.

There are three sources of competitive advantage: (1) Cost efficiencies that make more efficient use of the firm's assets and supplier inputs or that lower supplier cost; (2) Product differentiation to raise customer benefits; and (3) Transaction innovations that lower the costs of transactions or that create new combinations of customers and suppliers. The three types of competitive advantage are called cost advantage, differentiation advantage, and transaction advantage. Alternative purchasing strategies for creating value are associated with each of these alternatives. (Porter, 1985) has defined

the above three strategies to lead to a distinguished market position. As such, further citing on purchasing strategies based on the porter's definition leads to the next literature review where at first reviewed the concept of strategy implementation to follow describing specifically purchasing strategies are defined and explained.

2.1.9 Challenges of Supply Chain Management

Most supply chain management related-problems mainly occur from uncertainties and an inability to co-ordinate several activities and partners (Turban et al, 2004).Fawcett, (2001) identified top ten barriers to supply chain management these are: Inadequate information sharing, Poor/conflicting measurements, Inconsistent operating goals, Organizational culture or structure, Resistance to change- lack of trust, Poor alliance management practices, Lack of supply chain vision (understanding), Lack of managerial commitment, Constrained resources, No employee dedication/ empowerment. Many researchers have mentioned a classification of supply chain integration challenges. SC integration challenges can be classified through the challenge of system relationships; the SCM system has two kinds of relationships, which are the relation between sub-systems, and the relationship between SCM system and the business strategies. This classification emphasizes the technical challenges that came from the relation between SCM system and internal business strategy, unfortunately this classification by pass the challenges that the companies may face from external environment (Kiran, April, 2014).

Information sharing in a supply chain faces several hurdles. The first and foremost challenge is that of aligning incentives of different partners. It would be naive of a partner to think that information sharing and cooperation will automatically increase his or her profit. In fact, each partner is wary of the possibility of other partners abusing information and reaping all the benefits from information sharing.

Shah (2005) classified the supply chain problems in the process industry into three categories: supply chain network design, supply chain simulation and policy analysis and supply chain planning, and reviewed the state of the art of research in these areas. Regarding to the second element of the theories i.e. type of supply chain: efficient, quick, market responsive, lean and hybrid is the theory as the framework for providing valuable guidance to prioritize performance measures for evaluating cement factories. It is an appropriate theory for this sector because cement factories are well known for

producing homogeneous type of the product by focusing on efficient, market responsive and agile supply chains.

2.2 Empirical Literatures Review

The evolutionary nature and the complexity of SCM are also reflected in the SCM research. Much of the current theoretical/ empirical research in SCM focuses on only the upstream or downstream side of the supply chain, or certain aspects/perspectives of SCM (Shah et al. 2002). Topics such as supplier selection, supplier involvement, and manufacturing performance, the influence of supplier alliances on the organization, success factors in strategic supplier alliances, supplier management orientation and supplier/buyer performance, the role of relationships with suppliers in improving supplier responsiveness, and the antecedence and consequences of buyer– supplier relationship have been researched on the supplier side (Li et al, 2006). Studies such as those by Clark and Lee (2000), and Alvarado and Kotzab (2001), focus on the downstream linkages between manufacturers and retailers. A few recent studies have considered both the upstream and downstream sides of the supply chain simultaneously. Tan et al. (1998) explore the relationships between supplier management practices, customer relations practices and organizational performance; Frohlich and Westbrook (2001) investigate the effects of supplier–customer integration on organizational performance, Tan et al. (2002) study SCM and supplier evaluation practices and relate the constructs to firm performance, Min and Mentzer (2004) develop an instrument to measure the supply chain orientation and SCM at conceptual levels. Cigolini et al. (2004) develop a set of supply chain techniques and tools for examining SCM strategies. Taken together, these studies are representative of efforts to address various diverse but interesting aspects of SCM practices. However, the absence of an integrated framework, incorporating all the activities both upstream and downstream sides of the supply chain and linking such activities to both competitive advantage and organizational performance, detracts from usefulness of the implementation of previous results on SCM. Certain previous researchers have devoted deal of attention to the relationship of supply chain management practices and certain aspects of organizational performance from different perspective/dimensions of overall supply chain. Some of these researches findings are discussed as follow.

Lenny et al. (2007) conducted study on the impact of supply chain management practices on performance of Small and Micro Enterprises in Turkey. Based on exploratory factor analysis, researchers were grouped SCM practices in two factors: outsourcing and multi-suppliers, and

strategic collaboration and lean practices. The results indicate that both factors of strategic collaboration and lean practices and outsourcing and multi-suppliers have direct positive and significant impact on operational performance.

In contrast, both significant impact on operational performance and outsourcing and multi suppliers do not have a significant and direct impact on SCM-related organizational performance. Also, as the direct relationship between the two performance-constructs was found significant, both factors of SCM practices have an indirect and significant positive effect on organizational performance through operational. (Li et al, 2006) conducted study on the impact of supply chain management practice on competitive advantage and organizational performance by collecting data from 190 organizations by developing five dimensions of SCM practice (strategic supplier partnership, customer relationship level of information sharing, quality of information sharing and postpone mental and the research test the relationships between SCM practice competitive advantage and organizational performance and the result indicate that higher levels of SCM practices can lead to enhanced competitive. advantage and improved organizational performance and competitive advantage can have a direct and positive impact on organizational performance and from the five dimensions developed postponement have not been a strong indicator or SCM practice compared to the other four dimension.

Jenatabadi et al, (2013) conduct study on the impact of supply chain management on the relationship between enterprise resource planning system and organizational performance the objective of this study was to investigate the enterprise resource planning adoption and its influence on organizational performance through supply chain management. The data required for this research was collected from 174 companies in Malaysia through prepared surveys. And from the data collected the research found out that there exists a positive effect of enterprise resource planning on the supply chain which ultimately result in improved overall performance of the studied organizations.

Mustefa (2014) conduct study on the supply chain management practices and firm performance in case of awash tannery P.L.C. in Ethiopia according to this research data was collected from employees of awash tannery company and the research conceptualizes and develops five dimensions of SCM practice(strategic supplier partnership, customer relationship, level of information sharing quality ,quality of information sharing and internal lean practice) and it test the relationship between SCM practices operational performance and organizational performance and the research found out that there is strong relationship between SCM practices operational performance and organizational

performance and shows that SCM practice have an influence both on operational performance and organizational performance and it finds out that operational performance has also an influence on organizational performance.

Yap and Tan (2012) conduct study on the effect of service supply chain management practices on the public health care organizational performance in Malaysia in this study a total of five dimensions of service supply chain management practice where used to study the effect of supply chain management on organization performance from these information and technology management demand management, customer relationship management, supplier relationship management capacity and resource management where found to have significant and positive direct relationship with organizational performance and alliance network was found to have the mediation effect on the direct relationship.

Mwilu (2013) also conduct a study on supply chain management practices and performance among public research institutions in Kenya. One of the objectives of this study was to determine the impact of SCM practice on the performance of research institutions in Kenya and to evaluate the challenges faced by public research institutions in Kenya. And to evaluate the challenges faced by public research institutions in Kenya while adopting SCM. By developing seven dimensions of SCM practices from these the research founds out that three variables namely logistics lean suppliers and information technology were found to have strong statistically significant relationships with performance. The other three variables namely green supply chain practices, long term supplier relationships and out sourcing were found to have week relationships which were not statistically significant.

Habtamu Aboneh (2017) conducted the study on "the effect of Supply Chain Management Practices on Organizational Performance in Pharmaceutical Companies in Addis Ababa." The study was employed through descriptive research design in which selection of respondents were done using stratified sampling technique which is a mixture of deliberate (purposive) and simple random sampling technique. The analysis was made using descriptive statistics and the significant relationship of the independent variables with the dependent variable was made using inferential statistics (correlation and regression analysis). From the correlation analysis result there were significant positive correlation between the two variables (quality of information sharing and customer relationship management) and organizational performance at ($p<0.01$) and ($p<0.05$)

respectively. The other two variables (SRM and level of information sharing) have no significant correlation with organizational performance.

Amanuel Belay (2018) conducted study on the "Effect of Supply Chain Management on Organization Performance: A Case of East Africa Bottling Share Company" From the result of the analysis it is concluded that there is a strong relationship between supply chain management practices and organizational performance. Supply chain management practices have shown a positive and significant effect on performance of organization, all except internal lean practices which has no significant effect on organizational performance.

In General, as we have seen from the above literatures to assess the impact of supply chain management on organization performers there is no single measurement (dimension). Despite the increase of empirical research in the last few years' important differences in research design undermine comparability lack of consensus about and definition and dimension of the SCM construct use of different units of analysis and different approaches to performance measurement.

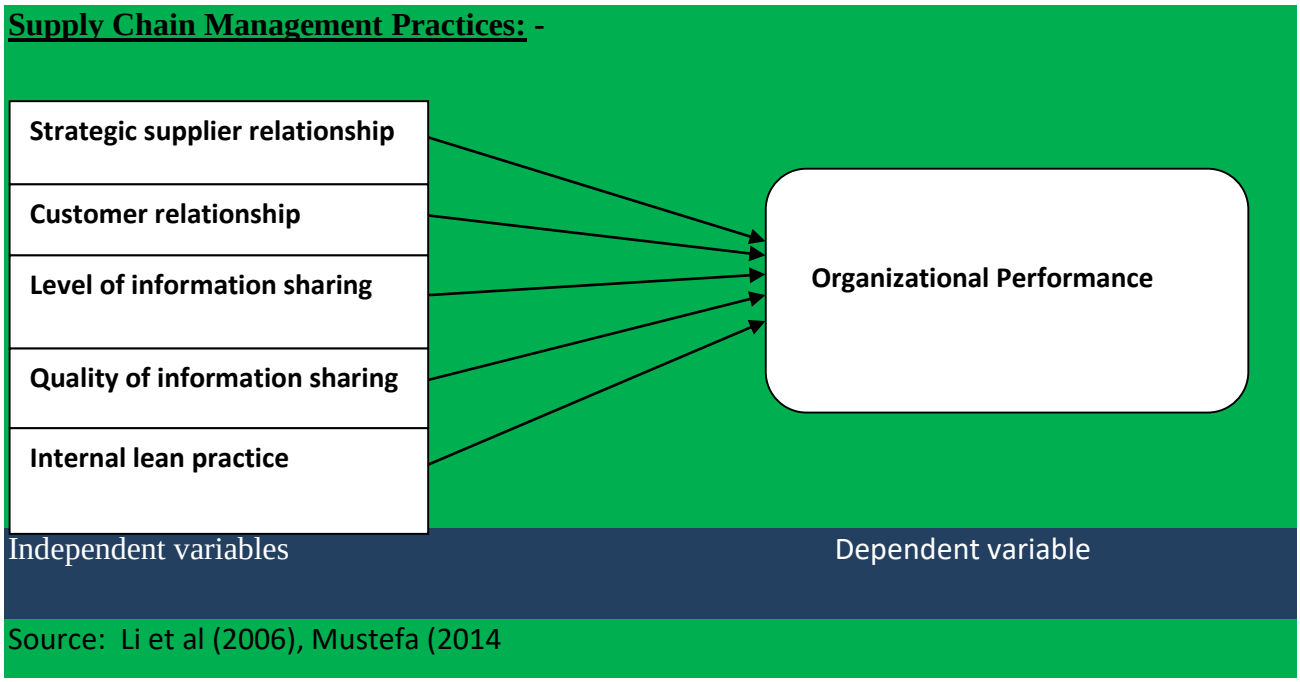
2.3 Identified Literature Gaps

Generally, from above literature reviews it can be easily understandable that the work on supply chain management practices and its influences on different perspectives of the organization and overall supply chain partners are increasing. But there is a lack of previous studies concerning SCM practices implementation and how it impacts the organizational performance in Ethiopian water bottling firms. The researcher had hardly found such studies in the literature. Therefore, this study had bridged the gap left behind by some previous studies; it included quantitative and qualitative data from players of the supply chain. Furthermore, the study included the aspect of how SCM practices impact overall organizational performance in the company.

2.4 Conceptual Framework

This conceptual framework provides a visual representation of the relationship that exists between the independent and the dependent variables. This study was assessing the supply chain management practices and the performance of MDE bottling PLC. The independent variables are supply chain management practices (strategic supplier relationship management, level of information sharing, quality of information sharing, CR and Lean system) while MDE bottling Companies' performance is the dependent variable. Supply chain management practices are therefore modeled to influence the performance of MDE bottling PLC. Below is the model of the literature review:

Figure 2: 2 Conceptual frame work of the research



Source: Li et al (2006), Mustefa (2014

CHAPTER THREE

3. RESEARCH METHODOLOGY

3.1 Research approach

The three methods that are commonly implemented in a research are quantitative, qualitative and mixed, where one of them is not better than the others, all of this depends on how the researcher want to do a research of study (Creswell, 2005). These are qualitative, quantitative and mixed research approaches in the social study. Thus, for this study the researcher used a mixed research approach which is both quantitative and qualitative. Creswell (2014) the researcher used a mixed approach to get more relevant data and to keep the validity of data (for triangulation). The distinction between qualitative research and quantitative research is framed in terms of using words (qualitative) rather than numbers (quantitative), or using closed-ended questions (quantitative) rather than open-ended questions (qualitative interview questions).

3.2 Research Design

The study is assessing the effect of supply chain management practices on the company performances in case of MDE PLC. So, for this study the researcher prefers a descriptive research type. Creswell (2014), a descriptive study deals with the what, how and who of a phenomenon study. And also when the purpose of a study is accurate description of a situation the study is descriptive Kothari (2004).

To address the study, the researcher used primary data. These data are collected throw distributing questionnaires to the employees of the company from selected departments and educational level. And also the researcher.

The researcher used a 5 point Likert scale on close ended questionnaire to collect data from the respondents and to measure variations and the researcher also used a semi-structured open ended questions to crosscheck the reliability of the response. The quantitative data are analyzed by using Stata version 17 software and the qualitative data is described in words.

3.3 Unit of analysis

Unit of analysis describes the level at which the research is performed and which objects are researched (William, 2008). In this respect, people or individuals are common units of analysis. Other units of analysis are: organizations, divisions, departments, etc. The units of analysis have an impact on sample selection, data collection, and type of conclusion that can be drawn from the research. Design consistency is achieved by matching the sample and data collection strategies to the unit of analysis (William, 2008). Thus, this study was conducted on the staff of MDE bottling PLC above grade 10 educational level and their distribution agents as a unit of analysis**.**

3.4 Sampling Techniques

The study used stratified sampling, and simple random sampling technique. This is because stratified sampling technique will be appropriate to select respondents from all components of the department of MDE bottling company and distribution agents. simple random sampling was used to select respondents from distributers in Dire Dawa; hence each individual customer has an equal chance of being included in the sample. The target population for the study will be classified into some strata of organizations involving in supply chain of MDE water bottling company. Then departments of MDE water bottling company are stratified in to departments. Then the samples were selected from each stratum according to their proportion to the total population. Since the information required for the study needs different people who have knowledge about different SCM practices/dimensions, and organizational performance of the firm, stratified sampling technique will have used to have the right proportion of people from every concerned department in MDE water bottling company and distribution agents.

3.5 Population and Sample Size

3.5.1 Population

According to Hair et al (2010), target population is said to be a specified group of people or object for which questions can be asked or observed made to develop required data structures and information. Population is defined as the entire set of individuals or other entities to which study findings are to be generalized (Schutt, 2011). The study population was focused on MDE water bottling PLC employees located within the company and distributer agents in Dire Dawa. The target

population of this study was permanent employees and distributers of the company, particularly those their educational level is grade ten completed and above. Therefore, out of 97 total employees 75 employees are above grade ten. From this number the target population is 64.

3.5.2 Sample Size

Appropriate sample size depends on various factors relating to the subject under investigation like: time, cost, degree of accuracy, the precision of the population, etc. In order to pull out appropriate respondents for the study, this case study was adopted sample size determination method as supported by Carvalho (1984) which is based on Table values as presented below.

Table 3: 1 Carvalho's sample size determination for questionnaire

Population size	**Sample size**		
	Low	Medium	High
51-90	5	13	20
91-150	8	20	32
151-280	13	32	50
281-500	20	50	80
501-1200	32	80	125
1201-3200	50	125	200
3201-10,000	80	200	315
10,001-35,000	125	315	500
35,001-150,000	200	500	800

Source: Carvalho J., (1984) „Archival application of mathematical sampling techniques“, Records management quarterly, 18(63).

3.6 Sources and types of Data

The study used primary data that was collected through questionnaire. The study also used secondary data sources from the company's statement, books, articles, journal, and websites how it impacts organizational performance. These sources provided the study with facts and concepts which later then used to derive the study variables. All the secondary data sources in this study are listed in the reference section.

3.7 Data Collection techniques

The study used primary data. Primary data are first-hand information, data collected directly from an original source. Primary data can be collected through observation, interviews, or the use of questionnaires (Saunders et al., 2009). The study used questionnaires to collect primary data for analysis. The questionnaires were designed to inquire answers in the form of closed and open ended questions. The researcher collect data from Management staffs in the form of interview which is used for triangulate the findings.

3.8 Method of Data Analysis

Data and information that were collected during the study is reduced into summary form that was processed by using Stata software 17. To summarize and analyze data the researcher used descriptive statistics (frequency, mean, and standard deviation). Inferential statistics such as multiple leaner regression ($Y=a+b1x1+b2x2+b3x3+b4x4+b5x5+\varepsilon$) are used to observe the relations between the variables with the help of Stata software 17, where Y is the independent variable, x1, x2, x3, x4 and x5 and are independent variables, b1, b2, b3, b4, b5, are coefficients. The findings of this thesis was organized and presented in the form of words, numbers and percentages, tables and figures. Data that collected from respondents in the form of questionnaires were presented in tables and figures and the central tendency of a distribution were taken as an estimate of the "center" of a distribution of values. In addition, standard deviation correlation coefficient, was used as a measure of dispersion.

3.9 Measurement of Variables

Likert scale is one of the ordinal scale measurements that allow the subject to be placed in accordingly Kothari (2004). The researcher used a Likert scale to measure variations within the items. The scale had a five range responses. For SCM practices the scale responses are Strongly Disagree,

Disagree, Neutral, Agree, and Strongly Agree, with a numeric value representation of 1-5, respectively. And also for company performance also used the five-point Likert scale with response to ranging from: 1 = significantly decrease, 2 = decrease, 3=same as before, 4=increase, 5=significantly increase.

3.10 Validity and Reliability

3.10.1 Validity

According to Mugenda et al (2003) validity of research, the researcher developed the questionnaires based on the specific objectives. And to ensure internal validity of the questionnaire; the researcher gave the draft questionnaire to the advisor for review and recommendations which are made part of the final questionnaire. In addition, face to face interviews with the company managers carried out to crosscheck the information collected through questionnaires, validated the outcome of the analysis. Creswell (2014) Qualitative data collected using semi-structured interview is a valuable way of triangulating quantitative data collected by other means such as a questionnaire.

3.10.2 Reliability

According to Mollel (2015), reliability should be verifiable and dependable. Reliability is a measures of internal consistency that concerned with items' responses consistent across constructs and indicates scores are stable over time when the instrument is administered (Creswell, 2009). According to Gliem, A.J and Gliem, RR (2003), Cronbach's alpha reliability coefficient normally ranges between 0 and 1. However, there is actually no lower limit to the coefficient. The closer Cronbach's alpha coefficient is to 1.0 the greater the internal consistency of the items in the scale. Green B.S. (2003), Cronbach's Coefficient alpha is the most popular reliability coefficient in social-science research for measures with multiple components. George and Mallery (2003) provide the following rules of thumb: ≥.9 – Excellent, _ ≥.8 – Good, ≥.7 – Acceptable, ≥ .6 – Questionable, ≥ .5 – Poor, and ≤ .5 – Unacceptable. Therefore, to test the reliability of the items used to assess the effect of supply chain management practice on the organizational performance a Cronbach's alpha reliability coefficient has calculated.

Table 3: 2 Cronbach's reliability alpha coefficient

Variables	Cronbach's Alpha	N of Items	Result
Strategic supplier partnership	0.9451	6	Excellent
Customer relationship	0 .7043	5	Acceptable
Level of information sharing	0.7660	6	Acceptable
Level of information quality	0.9664	4	Excellent
Internal lean practice	0.7073	5	Acceptable
Organizational performance	0.8033	7	Acceptable

Source: own survey, 2021

3.11 Ethical considerations

During data collection and other parts of the study, the right ethics of research was considered: The research conclusion was drawn from the research data without the involvement of researcher's biasness. To avoid stress and confusion during data collection, individuals participate in a study was contacted voluntarily providing all the required information and interval breaks were provided for an interview if necessary. Contacts were made without harming the respondents' rights. Care was taken to avoid a clear psychological, physical or emotional injury for those who involved and touched by the study. Individuals who contributed directly or indirectly to the study was properly acknowledged, on the issue of confidentiality, proper care was taken to protect the information provided by the respondents were not be transferred to other person or organization or to be used other than the intended study. It is research ethics to gather necessary information with patience till the researcher concluded everything that he/she needs from respondents and all the literatures included for the purpose of this study are appreciated in the reference list.

CHAPTER FOUR

DATA ANALYSIS, RESULT AND DISCUSSION

4. Introduction

This section presents and interprets the results from the data analysis. These results include the demographic profile of the respondents presented in a frequency table and results of the study findings. The data in these sections were generated from questionnaires filled and collected from **64** employees and distributer of MDE bottling PLC in Dire Dawa, Ethiopia October, 2021.

4.1. Response rate

The study targeted 75 employees and distributer of MDE bottling PLC in Dire Dawa Ethiopia. The response rate was as displayed in the table below**.**

Table 4: 1 Response rate

Respondents	Targeted	Achieved	Percentage
	75	64	85.33

Source: Own survey, 2021

From the table above, 64 out of the expected 75 respondents returned the questionnaires representing an 85.33 % response rate. This is a very high response rate and is representative of the targeted sample. This response rate was favorable according to Mugenda, O.M and Mugenda, B.G (2003) in which they assert that a 50% response rate is adequate, 60% good and above 70% rated very well.

4.2. Data Analysis

This study attempted to examine the relationship between supply chain management practices and company performance in case of MDE water bottling PLC. To assess the relationship between supply chain management practices and Company performance, Correlation and regression analysis were conducted for Linkert scale typed questionnaire. The questionnaire was developed in five scales ranging from one to five; where 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 =agree, 5 = strongly agree. A total of 75 questionnaires were distributed and 64 were collected from employees and distributer agents. The collected data were presented and analyzed using Stata (**version 17**) software.

The study used descriptive statistics and inferential statistics. Objective one which is to establish the supply chain practices adopted by the company and objective three which is about the difficulties to improve the company SCM practices were analyzed using descriptive statistics where the mean and standard deviation were used. Inferential statistics were used to analyze objective two which is the impact of SCM practices on Company performance. Correlation analysis is used to examine the relationships of the dependent variable and the independent variables. It indicates the strength of association between variables whereas the regression analysis is used to indicate whether the independent variables (SCM practices) significantly predict the dependent variable (the organization performance). Regression model Y= a+b1x1+b2x2+b3x3+b4x4+b5x5+e where Y = Organization performance; a= the y intercept when x is zero; b1, b2, b3, b4, b5, are regression coefficients of the following variables respectively; x1- lean practices, x2-quality of information sharing; x3-level of information sharing; x4- Customer relationship; x5- strategic supplier management.

4.2.1. Demographic characteristics of respondents**.**

The demographics factors used in this research are Educational qualification, Job Title/Position, Length of service in the organization, age of respondents, Gender and Departmental distribution**.** Observing the demographic trend of the sample population before starting the data analysis is useful to make the analysis more meaningful for the reader. The descriptive analysis is used to look at the data collected and to describe that information Assessing respondents' age, sex and title is that, to determine whether the researcher considered heterogeneity of sample units. This part of the questionnaire requested limited amount of information related to personal and demographic status of respondents. Accordingly, these variables are summarized and described in the tables shown below.

Table 4: 2 Analysis of respondents age distribution

. tab Age

Age	Freq.	Percent	Cum.
20-25 years	13	20.31	20.31
26-35 years	32	50.00	70.31
36-45 years	15	23.44	93.75
Above 46 years	4	6.25	100.00
Total	64	100.00	

Source: own survey result ,2021

Ages of the respondents in four categorical classes were considered to determine the age distribution of the study area. Majority of the respondents (50.00 percent) were fall between the age category of 26-35 years while 23.44 percent and 20.31 percent of the respondents are aged between 36-to-45 years and 20-to-25 years old respectively. Whereas, responds aged above 46 years were only accounted 6.25%.

Table 4: 3 Analysis of respondents sex distribution

sex	Freq.	Percent	Cum.
Female	16	25.00	25.00
male	48	75.00	100.00
Total	64	100.00	

Source: own survey result ,2021

The respondents were asked to mention their sex in the questionnaire. Accordingly, 75% of the respondents were male and 25 % were females as shown in table 4.3 above. This implies that majority of respondents were male and the response of respondents are dominated by male respondents.

Table 4: 4 Analysis of respondents educational level

education level	Freq.	Percent	Cum.
grade 10 compleet	10	15.63	15.63
College deploma	24	37.50	53.13
Frist degree	28	43.75	96.88
Second degree	2	3.13	100.00
Total	64	100.00	

Source: own survey result ,2021

As shown in table 4:4 from the total number 64 respondents 28 respondents (43.75%) have 1st degrees (BA/BSC Degree), 24 respondents (37.50 %) have college diploma,10 respondents (15.63%) have completed grade 10, and the remaining 2 respondents (3.13%) are 2nd Degree (MSC/MA Degree) holders.

Table 4: 5 Analysis of respondents work position in the organization

. tab department

department	Freq.	Percent	Cum.
HR	3	4.69	4.69
Purchase	6	9.38	14.06
Sales and marketing	11	17.19	31.25
Warehouse and facilities management	11	17.19	48.44
Finance	5	7.81	56.25
Production	11	17.19	73.44
Quality controll	3	4.69	78.13
Distributer agents and transport	14	21.88	100.00
Total	64	100.00	

Source: own survey result ,2021

The results of Departmental representation of respondents are shown in Table 4:5. The result indicates that 17.19% of the respondents were from Production department, 4.69% of the respondents were

from human resource department, 7.81 % of the respondents were from Finance, 17.19% from sales and Marketing,21.88 % from distributers agents and transportation, 4.69 % from quality control department, 17.19 % of the respondent's ware from warehouse and facilities department,9.38% respondents were from purchase department. The results indicate that the respondents were from different department/work unit and thus they will give an independent view of supply chain management practices and Organizational performance.

Table 4: 6 Analysis of respondents work experience in the organization

work expriance	Freq.	Percent	Cum.
Less than 1 year	10	15.63	15.63
1-2 years	13	20.31	35.94
3-4 years	33	51.56	87.50
Above 5 years	8	12.50	100.00
Total	64	100.00	

Source**:** own survey result, 2021

As shown in table 4:6 from the total respondents, 10 respondents (15.63%) have less than 1-year work experience, 13 respondents (20.31 %) have 1-2-year work experience, 33 respondents (51.56%) have 3-4-year work experience and the rest 8 respondents (12.50 %) have 5 and above year work experience. This implies half of the respondents have sufficient knowledge and experience about their organization and the subject matter of the study

4.2.2 Descriptive Analysis

4.2.2.1. Extent of SCM practices implementation in the case organization

The mean or average is a measure of central tendency that offers a general picture of the data without unnecessarily covering one with each of the observations in the data set. The mean of respondents in each variable shows the average amount responses of the respondents on each variable. The questionnaires of this study are designed using a 5 point Likert scale to collect appropriate responses by choosing: 5-Strongly Agree, 4-Agree, 3-Neutral, 2-Disagree and 1-Strongly Disagree. Therefore, the researcher illustrated the results Analysis of the data was done using means and standard deviations. The means recorded were interpreted as follows: 1-1.49 = Never practiced; 1.5-2.49 =

Rarely practiced; 2.5-3.49 = Occasionally practiced; 3.5-4.49 = Very often practiced; 4.5-5.0 =Always practiced as (Lady,2016) cited on (Habitye, 2018).

43 .50 means the respondents were neutral, 3.50-4.50 means they agreed and a mean above 4.50 means the respondents strongly agreed.

Table 4: 7 Mean and std.dev. Of responses on SCMP of MDE PLC

Five Supply Chain Management practices	N	Min	Max	Mean	Std.Dev
(A) Strategic supplier partnership:					
1.your company thinks quality is the best criterion in selecting the supplier.	64	1	5	2.828125	.9181536
2.your Suppliers Have participation in preparation on of specifications	64	1	5	2.921875	.8962831
3.Your Suppliers provide goods prior to payment	64	1	5	2.640625	1.059607
4. Your company continuously solves problems by joint effort with the suppliers.	64	1	5	2.890625	.9447799
5. Your company have provided information to the suppliers for improving their products quality	64	1	5	2.96875	.9589801
6. There is a honesty relationships when exceptions exist to normal operations	64	1	5	2.875	.9511897
Overall mean and std.dev				**2.854**	**0.9548**

(B) Customer relationship:	N	Min	Max	Mean	Std.dev
1.Your company frequently interact with customers to achieve reliability and to improve some basic standards for the company	64	1	5	3.51562	1.083677
2. Your company frequently measure and evaluate customer satisfaction	64	1	5	3.25	1.154701
3. Your company frequently determines future customer expectations.	64	1	5	3.34375	1.101496
4. Your company periodically evaluates the level of relationships with customers.	64	1	5	2.90625	1.164539
5. Your company develops metrics that are related to the customers‟ impact on the company's profitability	64	1	5	3.21875	1.015261
Overall mean and std.dev				**3.267**	**1.1039**

(C):- Level of information sharing	N	Min	Max	Mean	Std.dev
1.Your company regularly inform to the trading partners before changing needs and demand.	64	1	5	3.015625	.9676053
2.Your company share continuous (uninterrupted) information with trading partners	64	1	5	3.078125	.9310293
3.Your company's trading partners informed about the issues which affect the operations of your business.	64	1	5	3.203125	.9788183
4.Your company facilitates business knowledge/ experience sharing program with Your Trade partners.	64	1	5	3.25	.9920317
5.Your company exchange information with trading partners to establish a business plan.	64	1	5	2.953125	1.060543
6.Your company shares business knowledge of core business processes with trading partners.	64	1	5	3.015625	1.046418
Overall mean and std.dev				**3.086**	**0.996**

(D):- Quality of information sharing	**N**	**Min**	**Max**	**Mean**	**Std.dev**
1.Information exchange between your Company and trading partners is timely (not delayed).	**64**	**1**	**5**	3	1.023533
2.Information exchange between your Company and trading partners is accurate (targeted to do something).	**64**	**1**	**5**	3.09375	1.034619
3.Information exchange between your Company and trading partners is complete.	**64**	**1**	**5**	2.953125	1.060543
4.Information exchange between your Company and trading partners is adequate (enough in quantity and quality for a particular purpose	**64**	**1**	**5**	3.203125	1.056795
Overall mean and std.dev				**3.0625**	**1.04387**

(E):- Internal lean practice	N	Min	Max	Mean	Std.dev
1. Your Company strives to reduce time wastage in operation	64	1	5	3.28125	1.200095
2. Your Company has continuous quality improvement programs.	64	1	5	3.0625	0.8207382
3. Your Company produces only what has been ordered by customers .	64	1	5	3.03125	0.7708736
4. Your Company pushes suppliers for shorter lead times.	64	1	5	3.109375	0.8473523
5. The company streamlines (simplifies) ways to provide better services for the customer	64	1	5	3.203125	0.9624652
Overall mean and std.dev				**3.138**	**0.944**

Source: own survey ,2021

Based on table 4:7 above, the following illustration has been drawn by the researcher with regard to the five Supply Chain Management practices (independent variable) of the study in the case company.

(A) Strategic supplier partnership: Six items were used in order to see the extent of the Strategic supplier partnership of the case company. As shown from the above table 4:7, the overall mean and standard deviation of 2.854 and 0.9548 was scored indicating that Strategic supplier partnership was practiced moderately in the company. Among six items used in order to see the extent of the Strategic supplier partnership of the case company showed that the respondents gave higher mean score was the question that asks ‘’your company have provided information to the suppliers for improving their

products quality'' which has the mean score of 2.96875 with standard deviation 0.9589801 followed by your Suppliers have participation in preparation on of specifications with mean score of 2.921875 with standard deviation 0.8962831.The rest four questions that is your company thinks quality is the best criterion in selecting the supplier, your Suppliers provide goods prior to payment, your company continuously solves problems by joint effort with the suppliers and there is a honesty relationships when exceptions exist to normal operations has score mean of 2.828125,2.640625,2.890625 and 2.875 with standard deviation of 0.9181536,1.059607,0.9447799 and 0.9511897 79 respectively, which indicates that all items lays in the range of moderate practice. The analysis also showed that a low standard deviation spread from 0.8962831 to 1.059607 which implies that respondents were not that much varied in their opinion to the responses given under Strategic supplier partnership. Based on the overall analysis of the case company's Strategic supplier partnership, the researcher concludes that it is moderate. However, this does not mean sufficient. Therefore, it implies that, the case company has an assignment to improve its Strategic supplier partnership.

(B) Customer relationship: Five items were developed by the researcher in order to see the extent of Customer relationship of the case company. As shown from the above table 4.7, the overall mean and standard deviation of 3.267 and 1.1039 was scored indicating that Customer relationship was practiced occasionally in the case company. Among five items researcher used in order to see the extent of the Customer relationship of the case company showed that the respondents gave higher mean score was for the question that asks '' your company frequently interact with customers to achieve reliability and to improve some basic standards for the company'' which has the mean score of 3.51 (Very often practiced range) with standard deviation 1.083677 followed by your company frequently measure and evaluate customer satisfaction with mean score of 3.34375 with standard deviation 1.101496.The rest three questions that is your company frequently measure and evaluate customer satisfaction, your company periodically evaluates the level of relationships with customers and your company develops metrics that are related to the customers" impact on the company's profitability has score mean of 3.25, 2.90625 and 3.21875 with standard deviation of 1.154701, 1.164539 and 1.015261 respectively, which indicates that all items lays in the range of moderate practice. The analysis also showed that a low standard deviation spread from 1.015261 to 1.164539 which implies that respondents were not that much varied in their opinion to the responses given under Strategic supplier partnership. Based on the overall analysis of the case company's Customer relationship, the researcher concludes that it is moderate. However, this does not mean sufficient.

(**C): - Level of information sharing:** Five items were developed by the researcher in order to see the extent of the Level of information sharing of the case company. As shown from the above table 4.7, the overall mean and standard deviation of 3.138 and 0.944was scored indicating that Level of information sharing was practiced occasionally in the case company. Among six items used in order to see the extent of the level of information sharing of the case company showed that the respondents gave higher mean score was for the question that asks 'your company facilitates business knowledge/ experience sharing program with Your Trade partners' which has the mean score of 3.25 and std.dev 0.9920317. All items used to see the extent of the level of information sharing at the case company lays in the range of occasional practice. The analysis also showed that a low standard deviation spread from 0.9310293 to 1.060543 which implies that respondents were have some variation in their opinion to the responses given under level of information sharing. Based on the overall analysis of the case company's level of information sharing, the researcher concludes that it is moderate but not sufficient.

(D): - Quality of information sharing: Four items were used in order to see the extent of the quality of information sharing at the case company. As shown from the above table 4:7, the overall mean and standard deviation of 3.0625 and 1.04387 was scored indicating that quality of information sharing was practiced moderately in the company. Among four items used in order to see the extent of the quality of information sharing of the case company showed that the respondents gave higher mean score was the question that asks 'Information exchange between your Company and trading partners is adequate (enough in quantity and quality for a particular purpose' which has the mean score of 3.203125 and std.dev 1.056795. All items used to see the extent of the quality of information sharing at the case company lays in the range of occasional practice. The analysis also showed that a low standard deviation spread from 1.023533 to 1.060543 which implies that respondents were not that much varied in their opinion to the responses given under quality of information sharing. Based on the overall analysis of the case company's quality of information sharing, the researcher concludes that it is moderate and not mean sufficient.

(E): - Internal lean practice: Five items were used in order to see the extent of the internal lean practice of the case company. As shown from the above table 4.7, the overall mean and standard deviation of 2.854 and 0.9548 was scored indicating that Internal lean practice was practiced moderately in the company. Among five items used in order to see the extent of the internal lean practice of the case company showed that the respondents gave higher mean score was for the

question that asks ‘your Company strives to reduce time wastage in operation’ which has the mean score of 3.28125 with std.dev 1.200095 followed by the company streamlines (simplifies) ways to provide better services for the customer with mean score of 3.203125 with std. d dev 0. 9624652.. All items used to see the extent of internal lean practice at the case company lays in the range of occasional practice. The analysis also showed that a low standard deviation spread from 0.7708736 to 1.200095 which implies that respondents were have variation in their opinion to the responses given under internal lean practice. Based on the overall analysis of the case company’s internal lean practice, the researcher concludes that it is moderate but not sufficient.

4.2.2.2. Extent of Company Performance in the case organization

Table 4: 8 Mean and std.dev. of responses on case company performance.

Company Performance Measures.	N	M	M	M	Std.Dev
1.The company’s market share	64	1	5	3.328125	.8555085
2.The company’s return on investment	64	1	5	3.203125	.8578246
3.The company’s volume of sales	64	1	5	3.5625	.9236745
4.The company’s Profit margin on sales	64	1	5	3.515625	.8907316
5.The overall competitive position related to company’s Product	64	1	5	3.40625	.9548332
6.Growth in return on investment	64	1	5	3.546875	.9416245
7. The growth of market share.	64	1	5	3.09375	1.204736
Overall mean and std.dev				**3.37946**	**0.94699**

Source: own survey result, 2021

Based on table 4:8 above, the following illustration has been drawn by the researcher with regard to Company Performance (dependent variable) of the study in the case company.

Company Performance: - seven items were developed by the researcher in order to see the extent of the Company Performance of the case company. As shown from the above table 4.8, the overall mean and standard deviation of 3.37946 and 0.94699 was scored indicating that Company Performance measures developed by the researcher was practiced moderately on average in the case company. Among seven items used in order to see the extent of the Company Performance of the case company showed that the respondents gave higher mean score was for the question that asks '' the company's volume of sales "which has the mean score of 3.5625 with std. d dev 0.9236745 followed by growth in return on investment with mean score of 3.546875 with standard deviation 0.94699. All items used to see the extent of company Performance at the case company lays in the range of moderate on average. The analysis also showed that a low standard deviation spread from .8555085 to 1.204736 which implies that respondents were more varied in their opinion to the responses given under Company Performance Measures. Based on the overall analysis of the case company's Company Performance Measures, the researcher concludes that the seven items are practiced moderately on average. However, this does not mean sufficient. Therefore, it implies that, the case company has an assignment to improve its Company Performance Measures.

4.2.2.3. Extent of difficulties to improve the implementation of SCM practices in the case organization

Table 4: 9 Mean and std,dev. result of difficulties to improve company's SCM

Difficulties to improve the Company's SCM practices	N	Min	Max	Mean	Std.Dev
1.There is a management commitment to improve the SCM activities	64	1	5	3.46875	.7961963
2.The right person (skilled man power) is assigned in the area of SCM activities in the Company	64	1	5	3.35937	.8795235
3.The government policies encourages to develop long-range relationship with suppliers and customers	64	1	5	3.28125	.7657085
4.The company facilitates performance improvement training to the employees	64	1	5	3.1875	.8140629
5.The company has clear Organizational Structure	64	1	5	3.29687	.920312
Overall mean and std.dev				**3.3187**	**0.83516**

Source: own survey result ,2021

Based on table 4:9 above, the following illustration has been drawn by the researcher with regard to Company Performance (dependent variable) of the study in the case company.

Difficulties to improve the Company's SCM practices: - five items were developed by the researcher in order to see the extent of difficulties to improve the case Company's SCMP. As shown from the above table 4.9, the overall mean and standard deviation of 3.3187 and 0.83516 was scored indicating that those items have a moderate effect on the improvement of the Company's SCM practices. Based on the result of the table 4.9, among five items researcher used to evaluate

difficulties to improve the Company's SCM practices the mean values of management commitment to improve the SCM activities is highest with the mean score of 3.46875 and std.dev of 0.83516 followed by the right person (skilled man power) is assigned in the area of SCM activities in the Company with mean value of 3.35937 and std.dev of .8795235 which has a moderate effect on company performance. The analysis also showed that a low standard deviation spread from 0.7657085 to 0.920312whic h implies that respondents have some variation in their opinion to the responses given under difficulties to improve the Company's SCM practices.

4.2.2.4 Inferential Statistics for SCM practices and Company Performance

4.2.2.4.1 Correlation Analysis

Correlations are the measure of the linear relationship between two variables. Many studies use correlation analysis to explore the degree of association between study variables**.** Especially in social science research, linear correlation analysis is a tool for representing the closeness of one related variable to another. The purpose of carrying out correlation analysis is almost the same mostly in every study, a correlation analysis becomes useful to discover the extent of relationship between independent and dependent variables. A correlation coefficient has a value ranging from -1 to 1. Values that are closer to the absolute value of 1 indicate that there is a strong relationship between the variables being correlated whereas values closer to 0 indicates that there is little or no linear relationship. As described by (Andy Field 2009) the correlation is a commonly used measure of the size of an effect: values of ± 0.1 represent a small effect, ± 0.3 is a medium effect and ± 0.5 is a large effect. The relationship between supply chain management practices and the Company Performance was investigated using correlation analysis. This provided correlation Coefficients which indicated the strength and direction of the relationship.

4.2.2.4.2 Correlation Analysis between SCM practices and Company Performance

. As some general guidelines provided by (Cohen, 1988) the magnitude of the Pearson correlation coefficient determines the strength of the correlation. If coefficient value $0.1 < |r| < .3$ the strength of association is small correlation, if coefficient value is $0.3 < |r| < 0.5$ there is medium/moderate correlation, if coefficient value is $|r| > .5$ the association is large/strong correlation. Pearson correlation coefficients were determined with the objective to obtain information about the relationships between the dependent and independent variables as presented in next page below table 4.10

Table 4: 10 Correlation between SCMP and company performance.

```
. pwcorr MCp MIlp MQish  Mlish Mcrsh  MSSP, sig star(0.05) obs

             |      MCp     MIlp    MQish    Mlish    Mcrsh     MSSP
-------------+------------------------------------------------------
         MCp |   1.0000
             |
             |       64
             |
        MIlp |   0.7083*  1.0000
             |   0.0000
             |       64       64
             |
       MQish |   0.5056*  0.2653*  1.0000
             |   0.0000   0.0341
             |       64       64       64
             |
       Mlish |   0.6792*  0.5195*  0.2338   1.0000
             |   0.0000   0.0000   0.0629
             |       64       64       64       64
             |
       Mcrsh |   0.3035*  0.2180   0.0749   0.3190*  1.0000
             |   0.0148   0.0836   0.5564   0.0102
             |       64       64       64       64       64
             |
        MSSP |   0.4703*  0.2904*  0.2590*  0.2875* -0.1828   1.0000
             |   0.0001   0.0199   0.0388   0.0213   0.1483
             |       64       64       64       64       64       64
```

Source**:** own survey result, 2021

As the correlation matrix table 4.0 shows, the correlation coefficient values of company performance among SCM practices (internal lean practices, quality of information sharing, level of information sharing, customer relationship and strategic supplier partnership) are 0.7083*,0.5056*,0.6792*,0.3035* and 0.4703* respectively. Therefore, those above five predictor variables have positive and significant correlation with company performance. That means internal lean practices, quality of information sharing and level of information sharing have positive strong effect on company performance whereas customer relationship and strategic supplier partnership have positive and medium effect on company performance. As shown in the above table there is positive correlation between strategic supplier partnership, customer relationship and organizational performance with correlation coefficient of 0.4703 and 0.3035 with the significance level of 0.0001and 0.0148 which is less than 0.05 or ($r=0.4703$ and 0.3035, $p<0.05$). It shows us strategic supplier partnership, customer relationship and organizational performance are positively correlated and is statistically significant at the 5% significance level. The magnitude of the correlation coefficient indicates that the relation of the two independent variables (strategic supplier partnership and customer relationship) with dependent variable (organizational performance) has moderate

effect.As shown in table 4.10 there is positive correlation between level of information sharing, quality of information sharing, internal lean practices and organizational performance with correlation coefficient of 0.6792,0.5056 and 0.783 with the significance level of 0.00, 0.00 and 0.00 which is less than 0.05 or (r= 0.6792,0.5056 and 0.783, $p<0.05$). It shows us level of information sharing, quality of information sharing, internal lean practices and organizational performance are positively correlated and is statistically significant at the 5% significance level. The magnitude of the correlation coefficient indicates that the relation of the three independent variables (level of information sharing, quality of information sharing and internal lean practices) with dependent variable (organizational performance) has strong relationship.

4.2.2.5 Regression Analysis

Before carrying out multiple regression analysis, the researcher has checked the required assumptions that the data must meet to make the analysis reliable and valid. The following assumptions of multiple linear regressions were tested using Stata V17. This regression analysis was conducted to know by how much the independent variable explains the dependent variable. It is also used to understand by how much each independent variable (Strategic supplier partnership, Customer relationship, Level of information sharing, Quality of Information sharing and Internal Lean practices) explains the dependent variable that is Organizational Performance

4.2.2.5.1 Linearity test

Linearity assumption is the relationships between the predictors and the outcome variable should be linear. So, Linear regression needs the relationship between the independent and dependent variables to be linear. It is also important to check for outliers since linear regression is sensitive to outlier effects. One way to test the linearity assumption can be through the examination of scatter plots (Gregory, 2018). The scatter plot on Appendix 3 shows there is a linear relationship between organizational performance and the independent variables (ILP, Qish, Lish, CRsh & SSP).

4.2.2.5.2 Multicollinearity test

Multicollinearity exists when there is a strong correlation between two or more predictors in a regression model. Perfect multicollinearity exists when at least one predictor is perfect linear combination of the others (Field, 2009). He also stated that, perfect collinearity exists when at least one predictor is a perfect linear combination of the others. If the perfect there is perfect collinearity

between predictor it becomes impossible to obtain unique estimates of regression coefficients because there are an infinite number of combinations of coefficient that would work equally well. The regression coefficients become less reliable as the degree of correlation between the independent variables increases. If there is a high degree of correlation between independent variables, there is a problem of multicollinearity.

Field (2009) cited that Variance Inflation Factor (VIF) value above 10 and a tolerance (1/VIF) value below 0.10 pose a multicollinearity problem. From table 4.11 VIF Value ranges from 1.13 to 1.56. Tolerance value ranges within the value of 0.64091-0.884531. In this study, these values (both VIF and tolerance level) indicate that for this analysis, there is no serious multi collinearity problem

Table 4: 11 Multicollinearity test result

```
. vif

    Variable |      VIF       1/VIF
-------------+----------------------
       Mlish |     1.56    0.640491
        MIlp |     1.46    0.684596
        MSSP |     1.30    0.771386
       Mcrsh |     1.25    0.801522
       MQish |     1.13    0.884531
-------------+----------------------
    Mean VIF |     1.34
```

Source**:** own survey result ,2021

4.2.2.5.3 Normality test

Most of the parametric tests require that the assumption of normality be met. Normality means that the distribution of the test is normally distributed (or bell-shaped) with 0 means, with 1 standard deviation and a symmetric bell-shaped curve (Gregory, 2018). Also, multiple regressions assume that variables have normal distributions. This means that errors are normally distributed and that a plot of the values of the residuals will approximate a normal curve. According to (Kafadar, 2016) Shapiro–Wilk tests is one among other mechanisms to test normality. P-value assumes that the distribution is normal. Thus, if the p value is less than the chosen alpha level, and there is evidence that the data tested are not normally distributed. On the other hand, if the p value is greater than the chosen alpha level, then the null hypothesis that the data came from a normally distributed population. In case of this study an alpha level of .05 was chosen and the test result, p value of greater than .05 which

implies the data come from a normally distributed population. The other methods to check normality assumptions include using a histogram and a Normal P-P Plot. It can be concluded that normality is guaranteed as the histogram generated is normally distributed and the P-P plot follows the diagonal reference line as shown in Appendix 3 (A), (B) (C) Histogram graph and normal p-p plot graph consecutively. Hence, in this research as can be observed below in table 4.12 and figure 4.1 the data test is normal.

Table 4: 12 Shapiro -Wilk normality test result

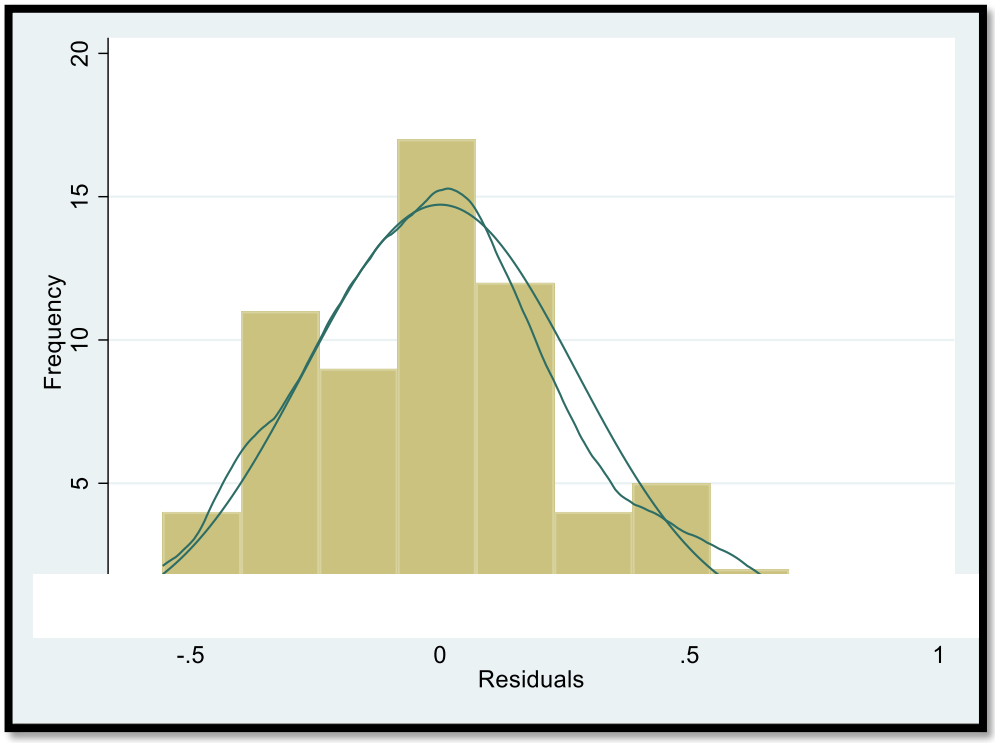
```
. swilk r

                Shapiro-Wilk W test for normal data

    Variable |        Obs        W         V         z       Prob>z
-------------+-------------------------------------------------------
           r |         64    0.98359     0.939    -0.135    0.55374
```

Source**:** own survey result, 2021

Figure 4: 1 Histogram showing normality distribution



Own Stata result,2021

4.2.2.5.4 Homoscedasticity test

The assumption of homoscedasticity means that the disturbance variance should be constant (or homoscedastic) at each observation (Shukur, 2003). When the variance of errors differs at different values of the IV, there is the indication of heteroscedasticity. There are graphical and non-graphical method to detect heteroscedasticity. Breusch-Pagan/ Cook-Weisberg test and Cameron & Trivedi test (white test) are non-graphical test while scatterplot of the residuals is graphical. In Appendix 3 (C) looks like it does not have an obvious pattern, there are points equally distributed above and below zero on the X-axis, and to the left and right of zero on the Y-axis. Hence the figure portrayed that residuals are equally distributed. Cameron& Trivedi Test is listed below.

Table 4: 13 White test result

```
. estat imtest

Cameron & Trivedi's decomposition of IM-test

---------------------------------------------------
              Source |       chi2     df       p
---------------------+-----------------------------
  Heteroskedasticity |      19.12     20    0.5142
            Skewness |       5.74      5    0.3324
            Kurtosis |       0.00      1    0.9618
---------------------+-----------------------------
               Total |      24.86     26    0.5270
---------------------------------------------------
```

Own survey result,2021

Table 4: 14 Breusch pagan test

```
. hettest

Breusch-Pagan/Cook-Weisberg test for heteroskedasticity
Assumption: Normal error terms
Variable: Fitted values of MCp

H0: Constant variance

    chi2(1) =   1.09
Prob > chi2 = 0.2956
```

Own survey result,2021

The above both non-graphic tests are the variance of the residuals is homogenous. Accordingly, as indicated in the above table the p-value (0.2956) is greater than 0.05 which implies that that variance of the residual is homogenous.

4.2.2.6. Model specification

Model specification refers to the determination of which independent variables should be included in or excluded from a regression equation (springer 1997). Model specification error generally refers to errors of omission and errors of inclusion, meaning; omitting crucial variables from the model or entering useless variables into the model. Model specification error, or model misspecification, can also refer to the model form imposed on the data. There are couple of methods to detect specification error namely link test and ovtest.

Table 4: 15 Link test result

```
. linktest

      Source |       SS       df       MS      Number of obs   =        64
-------------+------------------------------   F(2, 61)        =    101.63
       Model |  15.1704957     2  7.58524786   Prob > F        =    0.0000
    Residual |  4.55271806    61  .074634722   R-squared       =    0.7692
-------------+------------------------------   Adj R-squared   =    0.7616
       Total |  19.7232138    63  .313066886   Root MSE        =    .27319

------------------------------------------------------------------------------
          MCp |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
--------------+---------------------------------------------------------------
        _hat |    1.376753   .3099724     4.44   0.000     .7569244    1.996581
      _hatsq |   -.0652264   .0522621    -1.25   0.217    -.1697309     .039278
       _cons |   -.5129425   .4761305    -1.08   0.286    -1.465024    .4391393
------------------------------------------------------------------------------
```

Own survey, 2021

From the above link test, we find that _hatsq is not significant or it is greater than p-value (0.05) which implies that the model is specified correctly.

Table 4: 16 ovtest

```
. ovtest

Ramsey RESET test for omitted variables
Omitted: Powers of fitted values of MCp

H0: Model has no omitted variables

F(3, 55) =   2.60
Prob > F = 0.0615
```

Own survey Stata result,2012

In the above ovtest table 4.16 also shows that prob>F=0.0615 which is greater than p-value (0.05). So, we can say that the model has no omitted variable. Accordingly, there is no model specification error.

4.2.2.6.1 Model Summary

Table 4: 17 Model summary

```
. reg MCp MSSP Mcrsh Mlish MQish MIlp

      Source |       SS           df       MS      Number of obs   =        64
-------------+----------------------------------   F(5, 58)        =     37.40
       Model |  15.0542399         5  3.01084797   Prob > F        =    0.0000
    Residual |  4.66897392        58   .08049955   R-squared       =    0.7633
-------------+----------------------------------   Adj R-squared   =    0.7429
       Total |  19.7232138        63  .313066886   Root MSE        =    .28372

------------------------------------------------------------------------------
         MCp |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        MSSP |   .1518258   .0480528     3.16   0.003     .0556377    .2480139
       Mcrsh |   .1082465   .0533705     2.03   0.047     .0014137    .2150792
       Mlish |   .3317353   .0859847     3.86   0.000     .1596183    .5038524
       MQish |   .1474508   .0381975     3.86   0.000     .0709903    .2239114
       MIlp  |    .372742   .0756438     4.93   0.000     .2213244    .5241596
       _cons |  -.0500953    .266114    -0.19   0.851    -.5827803    .4825897
------------------------------------------------------------------------------
```

Own survey result, 20121

From the above model summary table 4.17, we observe the R-squared and Adjusted R-square to determine how well a regression model fits the data. The R-square is 0.7633 and Adjusted R-square is 0.7429. The R square 0.7633 indicate that the proportion of variance in dependent variable (i.e. organizational performance of MDE bottling PLC) that can be explained by independent variable (internal lean practices, quality of information sharing, level of information sharing, customer relationship and strategic supplier partnership) is 76.33 % while other factors not studied in this research contributed 23.67% of the organizational performance on of MDE bottling PLC. In addition, from table 4.17 we observe F-ratio tests which help to determine whether the overall regression model is a good fit for the data. The output shows that the independent variables statistically significantly predict the dependent variable, $F(5, 58) = 37.40$, $p < .0005$ that is the regression model is a good fit of the data.

4.2.2.7 Statistical Significance of the independent variable

As indicated in table 4.17 from P>|t| column we observe that all values are less than p-value (0.05) which implies that all independent variable coefficients are statistically significantly different from 0. This means all independent variables are statistically significant

4.2.2.8 Regression Coefficients

Table 4: 18 Coefficients

```
. reg MCp MSSP Mcrsh Mlish MQish MIlp

      Source |       SS           df       MS      Number of obs   =        64
-------------+----------------------------------   F(5, 58)        =     37.40
       Model |  15.0542399         5  3.01084797   Prob > F        =    0.0000
    Residual |  4.66897392        58   .08049955   R-squared       =    0.7633
-------------+----------------------------------   Adj R-squared   =    0.7429
       Total |  19.7232138        63  .313066886   Root MSE        =    .28372

------------------------------------------------------------------------------
         MCp | Coefficient  Std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
        MSSP |   .1518258   .0480528     3.16   0.003     .0556377    .2480139
       Mcrsh |   .1082465   .0533705     2.03   0.047     .0014137    .2150792
       Mlish |   .3317353   .0859847     3.86   0.000     .1596183    .5038524
       MQish |   .1474508   .0381975     3.86   0.000     .0709903    .2239114
        MIlp |    .372742   .0756438     4.93   0.000     .2213244    .5241596
       _cons |  -.0500953    .266114    -0.19   0.851    -.5827803    .4825897
------------------------------------------------------------------------------
```

Source**:** own survey result ,2021

In the above Regression Model, the un-standardized coefficients of internal lean practices, quality of information sharing, level of information sharing, customer relationship and strategic supplier partnership shows the relative influence on organizational performance of MDE bottling PLC.in Dire Dawa, Ethiopia. internal lean practices (β1=0.373) has the most positive effect on organizational performance, followed by level of information sharing(β3=0.332), quality of information sharing (β2=0.147), customer relationship (β4=0.108), and strategic supplier partnership (β5= 0.152) respectively. From the above table, regression model of the study can be generated as: -

Y = -0.0500+0.373X1 + 0.147X2 + 0.332X3 +0.108X4+0.152X5++ε Where; Y = organizational performance X1 = internal lean practices, X2 = quality of information sharing, X3 = level of information sharing t, X4 = customer relationship, X5= strategic supplier partnership, and ε is error term which assumed to be zero. The result indicates that held all independent variables at constant, then a unit increase in internal lean practices, leads to 0.373 increases in organizational performance,

a unit increase in quality of information sharing leads to 0.147 increases in organizational performance, a unit increase in level of information sharing leads to a 0.332 increases in organizational performance, a unit increase in customer relationship leads to a 0.108 unit increase in organizational performance, a unit increase in strategic supplier partnership results to 0.152 in organizational performance respectively.

4.3 Research Hypothesis

The study hypothesis that:

H0: Strategic supplier partnership has no significant effect on organizational performance

H1: Strategic supplier partnership has significant effect on organizational performance

H0: Customer relationship has no significant effect on organizational performance

H1: Customer relationship has significant effect on organizational performance

H0: Level of information sharing has no significant effect on organizational performance

H1: Level of information sharing has significant effect on organizational performance

H0: Quality of information sharing has no significant effect on organizational performance

H1: Quality of information sharing has significant effect on organizational performance

H0: Internal lean practice has no significant effect on organizational performance

H1: Internal lean practice has significant effect on organizational performance

Whereas;

H1: The Alternative Hypothesis- the effect observed in the data reflects a “significant” effect on organizational performance.

Ho: The Null Hypothesis- there is no “significant” effect on organizational performance.

4.3.1 Hypothesis testing

4.3.1.1 The influence of Strategic supplier partnership on Organizational performance of MDE bottling Plc

H1: Strategic supplier partnership has significant effect on organizational performance of MDE bottling PLC at $\alpha \leq 0.05$. Table 4.18 shows that there is a positive direct influence of Strategic supplier partnership on organizational performance of MDE bottling PLC, since (Coefficient= 0.152, sig. 0.000, $p<0.05$). Therefore, the null hypothesis that the Strategic supplier partnership have no a direct influence on the organizational performance of MDE bottling Plc at ($\alpha \leq 0.05$) is rejected. Thus, Strategic supplier partnership have a direct influence on organizational performance of MDE bottling Plc. But it is against the finding by (Habtamu Aboneh ,2017) in the study "the effect of Supply Chain Management Practices on Organizational Performance in Pharmaceutical Companies in Addis Ababa" his study concluded that, Strategic supplier partnership has no significant effect or influence on Organizational Performance.

H1. Customer relationship has direct influence on the organizational performance of MDE bottling PLC at $\alpha \leq 0.05$. Table 4.18 shows that there is positive direct influence of Customer relationship on organizational performance of MDE bottling PLC, since Coefficient= 0.108, sig.0.047, $p<0.05$. Therefore, it is against null hypothesis that Customer relationship has no direct influence on the organizational performance of MDE bottling PLC which implies accept alternative hypothesis that Customer relationship has direct impact on organizational performance. This also support the study by (Habtamu Aboneh ,2017) as well.

4.3.1.3 The influence of Level of information sharing on organizational performance of MDE bottling Plc

H1. Level of information sharing has an effect on the organizational performance of MDE bottling PLC at $\alpha \leq 0.05$. Table 4.18 shows that there is positive relation of level of information sharing and organizational performance with coefficient=0.332, sig. 0.000, $p<0.05$. Therefore, it is against null hypothesis that there is no significant relation between Level of information sharing and organizational performance. But, this study reveals that there is positive effect of level of information sharing on organizational performance of MDE bottling PLC. But it is against the finding by (Habtamu Aboneh ,2017) in the study "the effect of Supply Chain Management Practices on Organizational Performance in Pharmaceutical Companies in Addis Ababa" his study concluded that, Level of information sharing has no significant effect or influence on Organizational Performance.

4.3.1.4 The influence of quality of information sharing on organizational performance of MDE bottling PLC.

H1: Quality of information sharing have direct influence on the organizational performance of MDE bottling PLC at $\alpha \leq 0.05$. Table 4.18 shows that there is a positive direct influence of quality of information sharing on organizational performance of MDE bottling PLC, with coefficient= 0.147, sig. 0.000, $p<0.05$. Therefore, the null hypothesis is rejected, which indicates that quality of information sharing have no direct influence on the organizational performance of MDE bottling PLC at $\alpha \leq 0.05$. Thus, in this study quality of information sharing has a direct influence on the organizational performance of MDE bottling PLC which implies that alternative hypothesis is accepted. The result agrees with previous researches conducted by (Habtamu Aboneh, 2017) in the study "the effect of Supply Chain Management Practices on Organizational Performance in Pharmaceutical Companies in Addis Ababa"

4.3.1.5 The influence of Internal lean practice on organizational performance of MDE bottling Plc

H1. Internal lean practice has an effect on the organizational performance of MDE bottling PLC $\alpha \leq 0.05$. Table 4.18 shows that there is positive relation of internal lean practice and organizational performance of MDE bottling PLC with coefficient=0.373, sig. 0.000, $p<0.05$. Therefore, it is against null hypothesis that there is no significant relation between internal lean practice and organizational performance of MDE bottling PLC. But, the table4.18 reveals that there is positively significant effect of internal lean practice on organizational performance of MDE bottling PLC which implies the alternative hypothesis is accepted. But it is against the finding by Amanuel Belay ,2018 in the study "the effect of Supply Chain Management Practices on Organizational Performance: A Case of East Africa Bottling Share Company Companies in Addis Ababa" his study concluded that, Internal lean practice has no significant effect or influence on Organizational Performance.

4.4 Analysis of open ended questions

In this study some open ended questions were asked. Those question was to know whether there is a problem or not in implementation of supply chain management practices in the companies. Some of the respondents said that there is no problem seen, however, most of the respondents replied yes, there is a problem in practicing SCM and stated the following:

- **Foreign currency problem**: - The respondents explain in the past three years' shortage of foreign currency cause problem that leads inconsistent supply of raw materials for the company because the company brings raw materials from abroad.
- **Shortage of electric power**: - The respondents explain Shortage of electric power causes late delivery of orders, not to produce what is demanded at the right time, cause shortage of products.as a result customers and distributer agents are shifting to other company.
- **Problem of skilled workers on machine**: -According to respondents in the case company there is, high down time, variation between the planned sales and target because of lack skilled workers **on machine**. Most of the time machines are out of function due to lack of knowhow on machine. Some machines bought from china and stored for a long period of time in warehouse because there is no skilled worker to operate those machine.
- **Un equal government taxation: -**According to some respondents AQUA UNO water MDE bottling plc is federal tax payer including AQUA dire bottling plc, VITA bottling plc AYAN bottling plc and the rest are Dire Dawa city administration tax payers.MDE bottling plc huge tax as compared to those who pay their taxes at Dire Dawa city administration.
- **The rise of local raw material price**: -when some raw material is bought from local there will be huge price which cause disturbance of financial system of MDE bottling company.
- **Respondents were asked** to give suggestion with regards to future company's good SCM system. Most of the respondents stated that companies can increase their work efficiency by installing better way of managing the supply chain management.

CHAPTER FIVE
SUMMARY OF MAJOR FINDINGS, CONCLUSIONSAND RECOMMENDATIONS

5.1 Introduction

This chapter presents summary of findings which are organized as the research objective, conclusions that are drawn from the findings and recommendations based on the findings. Furthermore, suggestions for future research were made. The main purpose of the study was to examine the effect of Supply chain management Practices on organizational performance in MDE bottling plc, Dire Dawa Ethiopia. MDE bottling plc, orientation of Supply Chain was evaluated through five SCMP dimensions including Strategic Supplier Partnership, Customer Relationship, Level of Information Sharing, Quality of information sharing and Internal lean practices. Based on the results of the study the summary of major findings are as follows.

5.2. Summary of Findings

The study was tried to cover the effect supply chain management practice on organizational performance of MDE bottling Plc, in terms of Strategic supplier partnership, Customer relationship, Level of information sharing, Quality of information sharing, and Internal lean practice. The study also tried to explore detail important concepts in relation to the research objective in consideration. It included review of related literatures regarding history and advancement supply chain management practice on organizational performance in context of world, regional and country level. It also included theoretical and empirical literature reviews in relation to the study. For the purpose of this study data was gathered through distribution of questionnaires to those employees of MDE bottling Plc and distributer agents taken as the sample. A total of 75 questionnaires were distributed to respondents and 64 were returned with a response rate of 85.33%. Cronbach's alpha reliability coefficient which ranges between 0.7043 and 0.9664 was obtained for independent and dependent variables and the internal consistency test of research instruments was found in acceptable reliability and excellent range.

The general information of respondents was, 75% of the them were male and 25% were female. In relation to their educational level and 43.75% of the respondents had first degree, 37.50% had college diploma, about 15.63 are completed grade,3.13% had second degree.

The results of departmental representation of respondents are shown in Table 4.5 indicates that 17.19% of the respondents were from Production department, 4.69% of the respondents were from human resource department, 7.81 % of the respondents were from Finance, 17.19% from sales and Marketing,21.88 % from distributers agents and transportation, 4.69 % from quality control department, 17.19 % of the respondent's ware from warehouse and facilities department,9.38% respondents were from purchase department. The results indicate that the respondents were from different department/work unit and thus they will give an independent view of supply chain management practices and Organizational performance.

The result of work experience distribution of the respondents shows us that 51.56% of respondents had work experience from 3-4 years,20.31% of respondents had work experience from 1-2 years, 15.63% of respondents had work experience less than one year and 12.50 % of respondents had work experience above 5 years.

The descriptive statistical analysis was conducted to compute an overall mean score for each independent variable to measure supply chain management practice. Accordingly, the analysis revealed that customer relationship, quality of information sharing, level of information sharing, strategic supplier partnership and internal in practice are moderately practiced, because their mean is less than 3.5 on average.

Company Performance: - seven items were developed by the researcher in order to see the extent of the Company Performance of the case company. The result shown the overall mean and standard deviation of 3.37946 and 0.94699 was scored indicating that Company Performance measures developed by the researcher was practiced moderately on average in the case company.

Difficulties to improve the Company's SCM practices: - five items were developed by the researcher in order to see the extent of difficulties to improve the case Company's SCMP. The result shows that the overall mean and standard deviation of 3.3187 and 0.83516 was scored indicating that those items have a moderate effect on the improvement of the Company's SCM practices.

Based on the Pearson correlation analysis result, there is a positive and significant correlation between Internal lean practice and organizational performance ($r=0.7083$, $p<0.05$). Quality of information sharing is positively and significantly correlated with organizational performance ($r=0.5056$, $p<0.05$). Level of information sharing is positively and significantly correlated with organizational performance ($r=0.6792$, $p<0.05$). Customer relationship is positively and significantly correlated with organizational performance with ($r=0.3035$, $p<0.05$) and Strategic supplier partnership is also positively and significantly correlated with organizational performance ($r=0.4703$, $p<0.05$). The study also further discovered from Pearson correlation analysis that the relationship between independent variable (Internal lean practice, Quality of information sharing and Level of information sharing) and the dependent variable (organizational performance is strong because the correlation coefficient is above 0.50 and the correlation between independent variable (Customer relationship and Strategic supplier partnership) and dependent variable (organizational performance) is medium/moderate according to (Cohen, 1988).

Multiple regression analysis was used to determine whether SCMP influence the organizational performance of MDE bottling PLC. R -square value from the regression model indicated that 76.33% of the variation in the organizational performance of MDE bottling PLC. was accounted for the effect of supply chain management practices while the remaining 23.67 % accounts for other variables that was not included in the model.

The model test result also revealed that the supply chain management practice statistically and significantly predicts the organizational performance ($F = 37.40$, $p < .001$) which implies that all coefficients were different from zero (0). The regression analysis results further revealed that independent variables (Internal lean practice, Quality of information sharing, Level of information sharing, Customer relationship and Strategic supplier partnership) are statistically significant.

In addition, from table 4.17 we observe F-ratio tests which help to determine whether the overall regression model is a good fit for the data shows that the independent variables statistically significantly predict the dependent variable, $F (5, 58) = 37.40$, $p < .0005$ that is the regression model is a good fit of the data.

Data gathered using open ended questionnaire indicate that foreign currency problem, Shortage of electric power, Problem of skilled workers on machine, Un equal government taxation, the rise of

local raw material price are the current that interrupt SCMP and organizational performance of MDE water bottling PLC.

5.3. Conclusion

Based on the findings presented in previous sections, the study drawn the following conclusions. From the descriptive statistical analysis result regarding the state of SCMP in MDE bottling PLC the study concluded as follows.

The descriptive statistical analysis was conducted to compute an overall mean score for each independent variable to measure supply chain management practice. Accordingly, the analysis revealed that customer relationship overall means 3.2467 and standard deviation 1.1039 was relatively the more practiced in MDE bottling PLC followed by internal lean practice with overall mean 3.138 and standard deviation 0.944, Level of information sharing on third level by overall mean 3.086 and standard deviation 0.996, quality of information sharing and strategic supplier partnership were practiced next to Level of information sharing with overall mean 3.0625 and 2.854 with standard deviation of 1.04387 and 0.955 respectively. strategic supplier partnership was relatively the least practiced logistics activity with overall mean of 2.854 and standard deviation 0.955. As shown from table 4.7, the overall mean for each independent variables (Strategic supplier partnership, Customer relationship, Level of information sharing, Quality of information sharing and internal lean practice) 2.854,3.267,3.086,3.0625, 3.138 was scored indicating that those independent variables are practiced moderately in the company. As shown from the table 4.8, the overall mean 3.37946 was scored indicating that Company Performance measures developed by the researcher was practiced moderately on average in the case company. As shown from the table 4.9, the overall mean 3.3187 was scored indicating that those items have a moderate effect on the improvement of the Company's SCM practices on average. The study showed that, the level of information sharing, quality of information sharing and lean practices have strong relation to company performance with the statistical significant level whereas customer relationship and strategic supplier partnership have medium relation to company performance with the statistical significant level. The regression result show that the proportion of variance in dependent variable that can be explained by independent variable is 76.33 %, while other factors not studied in this research contributed 23.67% of the organizational performance on of MDE bottling PLC and all coefficients are positive. In addition, from table 4.17 we observe F-ratio tests which help to determine whether the overall regression model

is a good fit for the data. The output shows that the independent variables statistically significantly predict the dependent variable, F (5, 58) = 37.40, p < .0005 that is the regression model is a good fit of the data. In relation to the predicting power of the predictors included in the study, the study concluded that all independent variables namely Strategic supplier partnership, Customer relationship, Level of information sharing, Quality of information sharing, and Internal lean practice had significant predicting power on organizational performance of MDE bottling PLC.

5.4. Recommendations

The findings of this research can be important evidence for managers who take charge of supply chain management practices. In light of the findings and conclusions, the following possible recommendations are suggested as being valuable for improving Supply chain management practices to assure Organizational Performance.

- From descriptive analysis, Internal lean practice with over all mean 3.138 and std.dev 0.9548,Quality of information sharing with over all mean 3.0625 and std.dev 1.04387,level of information sharing with over all mean 3.086 and std.dev 0.996 ,Customer relationship with over all mean 3.267 and std.dev 1.1039 ,strategic supplier partnership with overall mean2.854 and std.dev.0.9548 were scored, indicating that the five key SCMP dimensions measures developed by the researcher were practiced moderately on average in the case company for each independent variables. Because the overall mean of independent variables is less than 3.5. Therefore, study recommended that the case company should work on those independent variables measurement items developed by the researcher to improve SCMP of MDE bottling plc company.

- It's known that the human resource is the essential factor that performs all activities to make Supply Chain Management effective and efficient. At the current situation marketing competition, customer preferences, and everything is changing rapidly. Therefore, this change enforces companies to change their strategies, and operations. Out of these changes having skilled, agile, and lean man power is the one. So that, MDE bottling Plc. is highly suggested that to prepare training program for its employees and managers in order to enable them to be competent, committed, responsive, finally which improves internal operation and customers service which then result in customer satisfaction. This can be done through creating relation-

ship with training institutions, strengthen the internal human resource department, internal sourcing and by using appropriately the opportunities given by the government through sending the right person to the training program on machines.

- The case company should have to work on challenges affecting supply chain management practice internally and externally which hinder the performance of its operation.
- The company has to further strengthen on providing accurate, reliable, and timely information to trading partners and get feedback on regular basis including distribution agents. The company should extend the practice of using modern communication technologies used for transfer of information to and from customers to all areas.

5.4. Limitation and Suggestions for future research

This study directly focuses on Supply chain management practices and its effect on organizational Performance in MDE bottling company with some issues of supply chain management practices. This research can be further explored by adding more Supply chain management practice dimensions like BPR, JIT, Distribution Planning, and others which could influence Organizational Performance.

The findings also formed a basis in carrying out a study on the effects of supply chain management practices on employee satisfaction in MDE bottling company.

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APENDIX 1- Research Questionnaires

Dire Dana University

College of Business and Economics

Department of Logistics and Supply Chain Management

Questionnaires

Dear Respondents: -

I am a student at Dire Dawa University College of Business and Economics Department Logistics and Supply Chain Management a Master's degree in Logistic and supply chain management. As part of requirement for MA degree, I am carrying out a thesis research work in titled. "**The Effect of Supply Chain Management Practice on Organizational Performance: In case of MDE bottling PLC"** You or Your Company is being selected for this study. This questionnaire is, therefore issued purely for academic purpose. Hence, you are kindly requested to cooperate by filling all the questionnaires attached. All information you provided will remain strictly confidential and will be used for intended purpose only. Your cooperation in ensuring that the questionnaires 2012); Bottled water Global market review.

Instructions

- Do not write your name on this questionnaire.
- Where answer options are available please tick (√) in the appropriate box for PART I,
- Where answer options are available please circle in the appropriate number for PART II, PART III, IV and write down brief answer for Part V
- Please answer all questions in the context of your company.
- Base your answers on your own thoughts & experiences
- If you have any query, please contact me by 0922737211 or gech.ayu1@gmail.com

Part I: Demographic information of the respondents

1.What is your gender?

Male ☐ Female ☐

2.How old are you?

20-25 ☐ 26-35 ☐ 36-45 ☐ Above 46 ☐

3.Educational Level

Grade 10 complete ☐

college Diploma ☐

Degree ☐

Masters and above

4.For how long you have worked in MDE water bottling Plc company?

Less than 1 year ☐ 2 years ☐ 4 years ☐ ears ☐

Above 6 years ☐

5. Write Your work position in the organization

Part II: Questions relates to Supply Chain Management Practice of MDE water bottling Plc. please circle the appropriate number to indicate the extent to which you agree or disagree with each statement. Where, 1=strongly disagree 2=disagree, 3=Neutral ,4=Agree, 5=Strongly agree

(A): Strategic supplier partnership	**Strongly disagree**	**disagree**	**Neutral**	**Agree**	**Strongly agree**
1.your company thinks quality is the best criterion in selecting the supplier.	1	2	3	4	5
2.your Suppliers Have participation in preparation on of specifications	1	2	3	4	5
3.Your Suppliers provide goods prior to payment	1	2	3	4	5
4. Your company continuously solves problems by joint effort with the suppliers	1	2	3	4	5
5. Your company have provided information to the suppliers for improving their products quality	1	2	3	4	5
6. There is a honesty relationships when exceptions exist to normal operations	1	2	3	4	5

(B): Customer relationship	**Strongly disagree**	**disagree**	**Neutral**	**Agree**	**Strongly agree**
1.Your company frequently interact with customers to achieve reliability and to improve some basic standards for the company	1	2	3	4	5

2. Your company frequently measure and evaluate customer satisfaction	1	2	3	4	5
3. Your company frequently determines future customer expectations.	1	2	3	4	5
4. Your company periodically evaluates the level of relationships with customers.	1	2	3	4	5
5.Your company develops metrics that are related to the customers‟ impact on the company's profitability	1	2	3	4	5

(C):- Level of information sharing	**Strongly disagree**	**disagree**	**Neutral**	**Agree**	**Strongly agree**
1. Your company regularly inform to the trading partners before changing needs and demand.	1	2	3	4	5
2. Your company share continuous (uninterrupted) information with trading partners	1		3	4	5
3. Your company's trading partners informed about the issues which affect the operations of your business.	1	2	3	4	5
4. Your company facilitates business knowledge/ experience sharing program with Your Trade partners.	1	2	3	4	5
5. Your company exchange information with trading partners to establish a business plan.	1	2	3	4	5

6. Your company shares business knowledge of core business processes with trading partners	1	2	3	4	5

(D):- Quality of information sharing	**Strongly disagree**	**disagree**	**Neutral**	**Agree**	**Strongly agree**
1. Information exchange between your Company and trading partners is timely (not delayed).	1	2	3	4	5
2. Information exchange between your Company and trading partners is accurate (targeted to do something).	1	2	3	4	5
3. Information exchange between your Company and trading partners is complete.	1	2	3	4	5
4. Information exchange between your Company and trading partners is adequate (enough in quantity and quality for a particular purpose	1	22	3	4	5

(E):- Internal lean practice	**Strongly disagree**	**disagree**	**Neutral**	**Agree**	**Strongly agree**
1. Your Company strives to reduce time wastage in operation	1	2	3	4	5
2. Your Company has continuous quality improvement programs.	1	2	3	4	5

3. Your Company produces only what has been ordered by customers .	1	2	3	4	5
4. Your Company pushes suppliers for shorter lead times.	1	2	3	4	5
5. The company streamlines (simplifies) ways to provide better services for the customer	1	2	3	4	5

PART III. Questions related to the level of MDE bottling company performance, please circle the appropriate number to indicate the extent to which you agree or disagree with each statement. Where, 1= Significantly decrease, 2=decrease ,3= The same as before,4= Increase, 5= Significantly increase

Company performance: how well the company achieves its performance in the past five years.	**Significantly decrease**	**decrease**	**The same as before**	**Increase**	**Significantly increase**
1.The company's market share	1	2	3	4	5
2.The company's ROI investment	1			4	5
3.The company's volume of sales		2	3		
4.The company's Profit margin on sales	1	2	3	4	5
5.The overall competitive position related to company's Product	1	2	3	4	5
6.Growth in return on investment	1	2	3	4	5

PART IV: Questions related to difficulties of improving SCM practices of MDE water bottling plc, please circle the appropriate number to indicate the extent to which you agree or disagree with each statement. Where, 1= Significantly decrease, 2=decrease ,3= The same as before,4= Increase, 5= Significantly increase

Difficulties of improving SCM practices in MDE bottling Company	**Strongly disagree**	**disagree**	**Neutral**	**Increase**	**Significantly increase**
1.There is a management commitment to improve the Supply Chain Management activities	1	2	3	4	5
2.The right person (skilled manpower) is assign on the area of Supply chain management activities in the Company	1	2	3	4	5
3.The government policies encourages to develop long-range relationship with suppliers and customers	1	2	3	4	5
4.The company facilitates performance improvement training to the employees	1	2	3	4	5
5. The company has clear Organizational Structure	1	2	3	4	5

PART V. Open-ended Questions

1 Is there any problem in the process of practicing supply chain management in your company? Yes, or no?

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2. If the answer for the above question is yes, what are those problems?

3.What are the main difficulties of improving Supply chain management practices in MDE water bottling Plc

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4.Is there any problem in increasing MDE company's performance? Yes, or No

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5.If the answer for the above question is yes, what are they?

6.Is there enough product to give for distributers

7.List problems related with internal lean practice

8.What are the problems during exchanging information between MDE company and its trade partners, supplier, distributer and customers?

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9. What are the customers' compliance in the service delivery quality of MDE water bottling company?

---

10. What is your suggestion for your company's future regarding good supply chain management practice?

THANK YOU!!

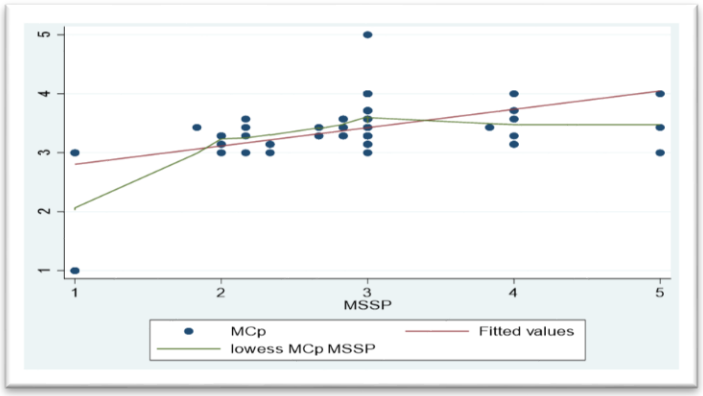
Appendix 2: Mean, std.dev, Min and Max of study Variables from Stata

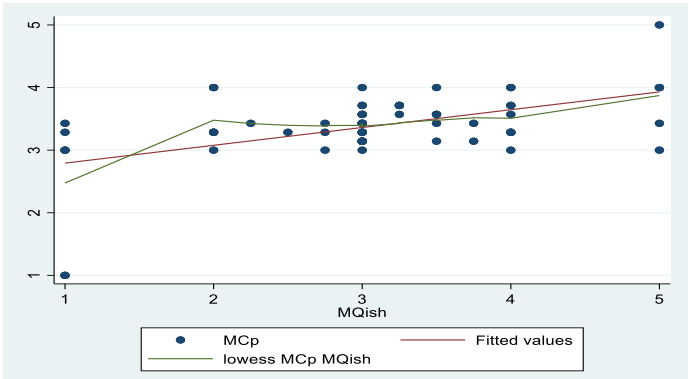
```
. summarize SSP1 SSP2 SSP3 SSP4 SSP5 SSP6 CRsh1 CRsh2 CRsh3 CRsh4 CRsh5 LISh1 LISh2 LISh3 LISh4 LISh5 LISh6 QIsh1 QIsh2 QIs
> h3 QIsh4 ILP1 ILP2 ILP3 ILP4 ILP5 CP1 CP2 CP3 CP4 CP5 CP6 CP7 DISCM1 DISCM2 DISCM3 DISCM4 DISCM5
```

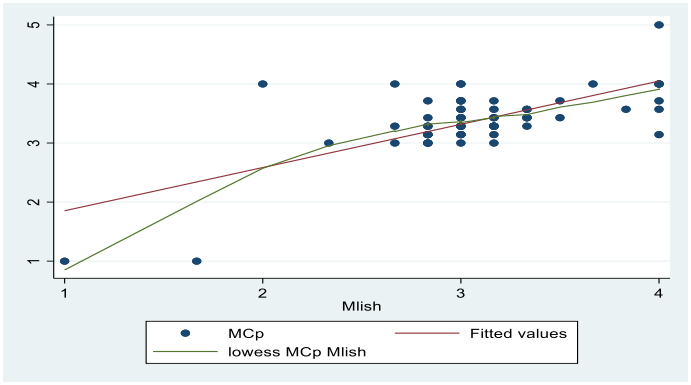
Variable	Obs	Mean	Std. dev.	Min	Max
SSP1	64	2.828125	.9181536	1	5
SSP2	64	2.921875	.8962831	1	5
SSP3	64	2.640625	1.059607	1	5
SSP4	64	2.890625	.9447799	1	5
SSP5	64	2.96875	.9589801	1	5
SSP6	64	2.875	.9511897	1	5
CRsh1	64	3.515625	1.083677	1	5
CRsh2	64	3.25	1.154701	1	5
CRsh3	64	3.34375	1.101496	1	5
CRsh4	64	2.90625	1.164539	1	5
CRsh5	64	3.21875	1.015261	1	5
LISh1	64	3.015625	.9676053	1	5
LISh2	64	3.078125	.9310293	1	5
LISh3	64	3.203125	.9788183	1	5
LISh4	64	3.25	.9920317	1	5
LISh5	64	2.953125	1.060543	1	5
LISh6	64	3.015625	1.046418	1	5
QIsh1	64	3	1.023533	1	5
QIsh2	64	3.09375	1.034619	1	5
QIsh3	64	2.953125	1.060543	1	5
QIsh4	64	3.203125	1.056795	1	5
ILP1	64	3.28125	1.015261	1	5
ILP2	64	3.0625	.9407022	1	5
ILP3	64	3.03125	.9079674	1	5
ILP4	64	3.109375	.9105587	1	5
ILP5	64	3.203125	.9458294	1	5
CP1	64	3.328125	.8555085	1	5
CP2	64	3.203125	.8578246	1	5
CP3	64	3.5625	.9236745	1	5
CP4	64	3.515625	.8907316	1	5
CP5	64	3.40625	.9548332	1	5
CP6	64	3.546875	.9416245	1	5
CP7	64	3.09375	1.204736	1	5
DISCM1	64	3.359375	1.200095	1	5
DISCM2	64	3.65625	.8207382	1	5
DISCM3	64	3.59375	.7708736	1	5
DISCM4	64	3.390625	.8473523	1	5
DISCM5	64	3.203125	.9624652	1	5

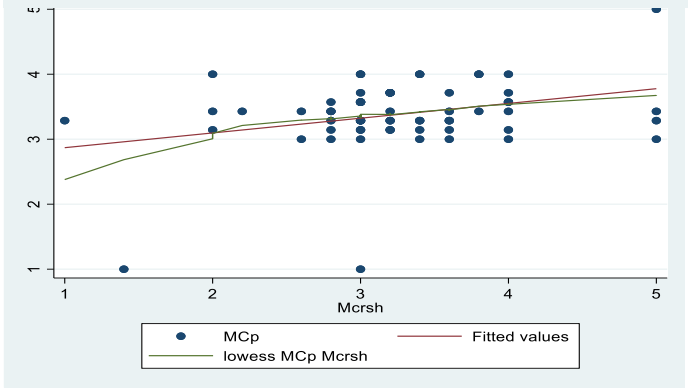
Appendix 3. Linear Regression Assumptions

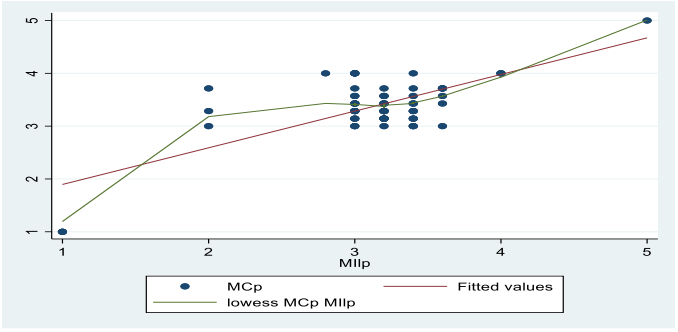
(A) Linearity



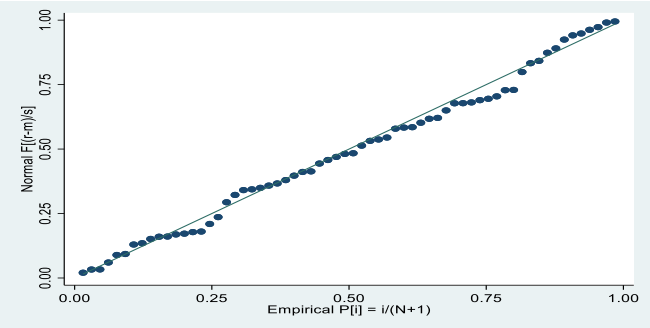


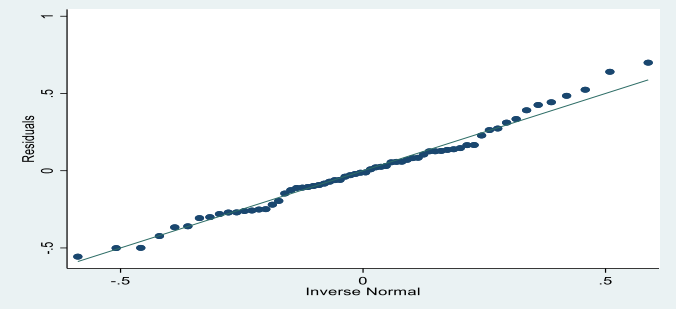




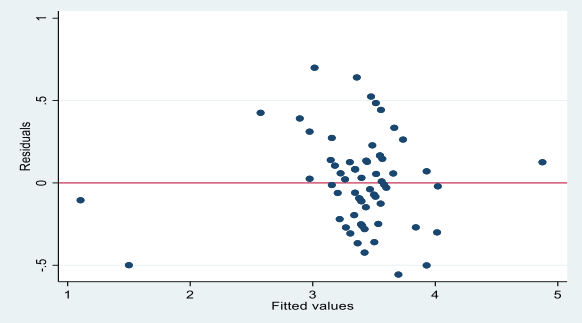


(B) Normality





(C)Homoscedasticity



Appendix 4-temporary time table for research paper

Activity	June	July	August	September	October	November
Talks with the company CEO						
Talks with distribution agents						
Pilot study						
Selecting title and submit						
Writing research proposal						
Writing research proposal						
Developing research tools						
Giving draft of research tool to advisor						
Data collection						
Data entry and analysis						
Thesis report writing and submitting to advisor						