



**St. Mary's University**

**School of Graduate Studies, MBA Program**

**The Effects of Supply Chain Management practice on Firm Performance  
(The Case of Meta Abo brewery S.C. Addis Ababa)**

**A thesis for the fulfillment of MBA**

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**Jan 2021**

**Addis Ababa**

**St. Mary's University**  
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**Declaration**

I, Biruk Bereje declares that this thesis is the result of my independent research work on the topic of "The Effects of Supply Chain Management Strategy on Firm Performance the Case of Meta Abo S.C." in fulfillment of the requirements for the Master of Art in business Management at St. Mary's University School of Graduate Studies, MBA Program This work is unique in that it has never been submitted for a degree at another university. All the citations are suitably appreciated as well.

Biruk Dereje

Signature\_\_\_\_\_

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## List of Acronyms

SCM	Supply Chain Management
SCP	Supply Chain performance
SRM	Supplier Relationship Management
SCM	Customer Relationship Management
LIS	Level of Information Sharing
OP	Organizational Performance
ROI	Return on Investment
S.D	Standard Deviation



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## **Abstract**

*The supply chain refers to the network of companies, people, technology, activities, information, and resources involved in getting a product or service from a supplier to a customer. Natural resources, raw materials, and components are transformed into a finished product that is provided to the end customer through supply chain activities. The goal of this study is to see how supply chain management methods (reliability, responsiveness, level of information exchange, and cost) affect Meta Abo's organizational performance. The study used a descriptive research methodology in which respondents were selected using a stratified sample methodology that combines purposeful (purposive) and simple random sampling techniques. The study was done with descriptive statistics, and inferential statistics were used to determine the significant association between the independent factors and the dependent variable (correlation and regression analysis). Reliability has a mean of 4.06, responsiveness has a mean of 3.77, LIS has a mean of 3.89, cost of 4.14, and OP has a mean of 3.94, according to the descriptive analysis results. 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 remaining two variables (SRM and level of information sharing) have no bearing on organizational effectiveness. Finally, based on the regression analysis results, only two hypotheses (Ha2 & Ha4), namely customer responsiveness and cost, are acknowledged as having a positive and significant impact on organizational performance. This means that business organizations must pay close attention to the quality of SC responsiveness and SC Cost in order to play a proactive role in the management of their supply chain in order to gain a competitive advantage and achieve their objectives.*

*Key words: Supply Chain Management, SC responsiveness, SC reliability, Level of Information Sharing, SC*



# 1 Chapter one

## 1.1 Background of the study

A strong new source of competitive advantage is being discovered by the best businesses around the world. It is referred to as supply chain management and involves all those integrated activities that market the product and produce happy customers. Control of Supply Chains The software combines production, sourcing, transport, and physical delivery issues into a single program. Effective management of the supply chain then coordinates and incorporates all these operations into a smooth method. This welcomes and binds all of the chain members. These partners, in addition to the divisions within the company, include suppliers, airlines, third-party firms and providers of information systems.

In General A The supply chain (SC) can be defined as a network connecting different entities, through manufacturing and services, from the customer to the supplier, so that the flow of goods, money and knowledge can be effectively controlled to satisfy the business The supply chain within the company relates to a wide variety of functional areas.

They include tasks associated with Supply Chain Management, such as inbound and outbound transport, warehousing, and inventory control. Sourcing, sourcing and supply management also come under the umbrella of the supply chain. Forecasting, scheduling and preparation of output, order processing, and customer support are all part of the process. Importantly, it also integrates the information systems that are so important to track all these operations.(Zigiariis, 2000 p.1) "Management of the supply chain includes planning and management of all activities involved "In sourcing and procurement, transfer, and all activities of logistics management. Importantly, it also involves cooperation and communication with channel partners, which may be suppliers, intermediaries, third party service providers, and consumers. Supply chain management

fundamentally combines supply and demand management within and through industries.

## 1.2 Statement of the Problem

Supply chain management (SCM) has been one of the most common concepts in management in general and in logistics in particular since its introduction in the early 1980s (Baharanchi, 2009). Within the scientific community, there is an overall consensus that SCM is a very complicated management (Persson 1997 and Heusler 2004).

Despite twenty years of ongoing study, standard terminology has still not been settled upon by academia. This has culminated in specific research projects to minimize complexity by providing specific structures (e.g. Kotzab 2001, Bechtel & Jayaram 1997, Cooper et al. 1997). It refers to SCM as the management of business process

focused on customer-driven inter-organizational relationships that maintain sustainable success and competitiveness for all actors in a network (in accordance with SkjoettLarsen et al. 2005, 37 and Weber 2002, 28). SCM leads to the development of productivity and increase customer satisfaction According to (Kluyver and Pearce, 2006, p. 4), "long-term, sustainable superior performance" is the ultimate objective of the strategy. Such superior performance now relies on the willingness of the manufacturing company to become a fully integrated supply chain partner (Cooper et al., 1997), thereby requiring all manufacturing organizations to implement a supply chain.

These supply chain techniques concentrate on the integration and alignment of both internal and external business processes in the supply chain to better support ultimate suppliers and customers while improving the efficiency of individual supply chain members (Cohen and Roussel, 2005 as quoted by (Green Jr, Whitten and Inman, 2008))

Lack of competition on an international basis. The sector currently employs about

100,000 people and plays a crucial role in the replacement of imports by saving a large amount of foreign currency by replacing imported goods with domestically manufactured products. Therefore, when the industry generates job opportunities, it saves foreign currency and is one way of transforming. The agriculture economy of the country contributes to the leading economy of the industry, the sector at large should be given due consideration.

However, in the field of SCM policy and company efficiency in Ethiopian manufacturing firms, limited research has been carried out (i.e. from perspectives of Manufacturing strategy, Outsourcing strategy, Channel Strategy, Customer service strategy, Asset network on Supply chain and organizational performances). Scientific analysis on such a difference of information is required and this shortcoming that the research aims to fill. In addition, this study was inspired by current gaps, namely the lack of sufficient expertise of supply chain management administrators, the conventional pattern of handling supply chains from suppliers to consumers that is not more than just a (transactional) partnership between purchasing and selling.

In addition, to recognize the efficacy and effectiveness of the existing structure of the supply chain and to understand the potential challenges and barriers in the development and delivery process of the commodity.

It is important to decide whether SCM Strategy affects the efficiency of the organization and to analyze the relationship between the supply chain management strategy and the performance company, as the most productive and reliable supply chain in which to position a product is chosen and used. For such market-leading producers as meta abo brewery drinks sector, consumer hands are very significant

It is also very relevant to pursue an examination and review of the impact of the SCM Approach on the operational efficiency of producers, in the case of producers such as Meta abo brewery Industry S.C. Therefore, as the attempt to analyze the consequences and relationship between SCM activities and results calls for analytical evidence of their influence on the enterprise, this paper aimed to add to the discussion by testing the impact and relationship between SCM policy and supply chain and organizational

performance in the case of company

### **1.3 Research question**

Centered on the research history and inspiration, this research aims to resolve the  
Following study questions:

- What is the impact of supply chain reliability on the performance of Meta Abo brewery industry SC?
- What is the impact of supply chain responsiveness on the performance of Meta abo brewery industry SC?
- What is the impact of supply chain flexibility on the performance of Meta Abo brewery industry SC?
- What is the impact of supply chain cost on the performance of Meta Abo brewery industry SC?
- What is the impact of supply chain Asset management on the performance of Meta Abo brewery industry SC?

### **1.4 Objectives**

#### **1.4.1 General objectives**

The key purpose of this analysis is to test the influence of the Supply Chain Management practice on the Performance of Meta Abo brewery industry S.C by defining the relationships between the activities of the SCM performance and the performance of the company.

#### **1.4.2 Specific objectives**

- Assessing the effect of SC reliability on firm performance;
- To determine how the supply chain responsiveness of industrial companies are actually influence Organization performance
- Show the impacts on supply chain cost on organizational performance;
- Present the impacts on firm sc information sharing practice on organization performance to provide suggestions based on study results.

### **1.5 Significance of the study**

This is mainly a research carried out in an environment where supply chain management activity has yet to develop .In Ethiopia, where existing information bodies in the field are small, As well as the increasing importance of the sector in the region. This study would also lead to the advancement of the discipline in this area. More precisely, within the Meta Abo brewery industry S.C., research efforts are limited. This, Research on the effects of the supply chain management strategy on the results of Meta Abo brewery industry S.C will lead to the growth and effective execution of Meta Abo brewery company's supply chain management strategies, emphasizing the value of appropriate and applicable knowledge for preparing and making good marketing decision-making In addition, this analysis would serve as a starting point for more research by scholars since the notion of this study is new to the region.

### **1.6 Scope of the Research**

SCM includes vast fields of executive activities. However, in all fields that summarize SCM in terms of time, finance, and analysis manageability, the thesis is difficult and unmanageable to perform. The focus of this analysis is therefore limited to the impact of the SCM approach on the organizational output of Meta Abo S.C. Just Meta for the



management of the analysis flow

The subjects of the research were the soft drinks sector S.C branches in Addis Ababa. The target scope of this study is also limited to the reference point of the organization for production policy, client partnership, channel strategy, outsourcing strategy, and network of assets for enterprises.

The research was limited to operating success (measured by market share, return on investment, market share growth, revenue growth, return on investment growth, profit margin on sales and overall competitive position) and supply chain performance in terms of organizational performance.

The area of the research is also constrained by analyzing how the enterprise communicates with their downstream supply to the case company, i.e., Meta Abo beverages industry S.C divisions based in Addis Abeba.

## **1.7 Organization of the Research Report**

This thesis is organized into five chapters, Chapter one includes study context, problem statement, fundamental research issues, study purpose, meaning of words, study importance, study delimitation/scope and study restriction. The second chapter deals with the study-related literatures and conceptual structure work adapted from previous studies. The second chapter deals with the study-related literatures. The type and design of the research are defined in the third chapter, as well as the subjects/participants of the study, data sources, data collection instruments, data collection procedures and data analysis methods used. Chapter four outlines the study's results/findings and interprets the findings and/or discusses them.

Finally, four parts of chapter five contain a review of the results, observations, guidelines and proposals for future research.

## **1.8 Limitation of the study**

Although the company's supply chain management approach is unique to itself, it is difficult to generalize the study results to other companies in Ethiopia's brewery industry. In addition to the study assessing the results of supply chain management activities from the focal point of the business (meta abo industry s.c), it did not include the other supply chain participants (customers and suppliers) reactions or responses to the report, although the analysis is confined to meta abo brewery industry s.c offices in the Addis Abeba region due to time and budget constraint.

Finally, only a percentage of the potentially important factors that may have been used in these measurements are the supply chain success measures presented in the report, which only act as indicators and specific consideration is given to structuring the vast majority of measures. It is also important to remember that the outcomes of this Analysis can only be used comparative purposes not to generalize.

## **2 Chapter two**

### **2.1 review of related literature**

These days, whether they are local or foreign on their own, the dynamic world economy has a large impact on company practices. Supply chains, apparently, ought to be taken into account as the core component of global industry in particular.

It is important in supply chain management for Industries to establish and coordinate networks of operations internationally engaged in the acquisition, manufacturing, production delivery, and delivery of goods. Supply chain management (SCM) has been one of the most common concepts in management in general and in logistics, particularly since its introduction in the early 1980s (Baharanchi, 2009).

Most of the concepts of SCM are linked to integration: "The whole concept of SCM is really based on integration" (Carter, 2009). This study's literature review consists of fundamental theories that include evolution, description and clarification of supply chain management, supply chain planning, efficiency and related works presented.

### **2.2 Evolution of Supply Chain Management**

Most producers stressed mass manufacturing in the 1950s and 1960s to reduce unit

production costs as the main technique for operations, with little versatility in the product or process. New product production was slow and depended entirely on in-house technology and capacity. In order to sustain a balanced line flow, bottleneck operations were cushioned with inventory, resulting in immense inventory of work in process (WIP) investment. It was deemed too costly and inappropriate to exchange technologies and skills with consumers or vendors and little focus seems to have been put on mutual and strategic supplier alliances for buyers. The Purchase The role was usually assumed to be a manufacturing service, and managers paid little attention to buying problems. Manufacturing Resource Planning was initiated in the 1970s and managers recognized the effect of tremendous WIP on production costs, productivity, Lead-time and emerging product development and distribution.

In the 1980s, intense global competition forced world-class organizations to offer low-cost, high-quality and reliable goods with greater flexibility in design. Just in time (JIT) and other management initiatives is used by producers to increase output quality and cycle time.

Manufacturers have started to understand the possible value and significance of the strategic and cooperative buyer-supplier relationship in the fast-paced JIT manufacturing world with little inventory to cushion production or scheduling issues.

When suppliers experimented with strategic alliances with their immediate vendors, the notion of supply chain management emerged. In addition to the procurement specialists, the idea of materials management was taken a step forward by shipping and logistics experts to combine the physical manufacturing and transportation roles, resulting in the advanced logistics concept, also known as the integrated logistics concept.

As control of the supply chain management In the 1990s, the advancement of supply chain management, followed by growing logistics and inventory costs and even the movement towards business globalization, have increased the difficulties associated with improving quality, production productivity, customer support, and innovative product design and development. Manufacturers started sourcing from a limited range of accredited, high-quality suppliers with outstanding reputations for service and to cope with these difficulties.

These vendors have been active in their new product creation and production operations, as well as in efforts to increase prices, efficiency, and operation. This is achieved by reducing the supply base as well as a single provider and entering into a long-term arrangement to do their business as a strategic partnership. When businesses continued to introduce supply chain management strategies, they began to realize the need to coordinate all core business processes among supply chain members to enable the supply chain to act and react as one entity. (Ensermu,2013).

Several researchers in the supply chain management profession have sought to describe and provide a detailed reflection on the supply chain. A supply chain includes, directly or indirectly, of all those participating in the fulfillment of a customer order. The supply chain involves not only vendors and distributors, but also airlines, stores, dealers as well as consumers (Chopra &Meindl,2007:4,Mentzer et al. 2001:4, as quoted by Green et. Al 2008:318) Defines the supply chain as a "set of three or more entities (organizations or individuals) directly involved in the upstream and downstream flows of products, services, finances, and/or customer information from source to customer" All these scholars' concepts appear to have raised similar opinions in one way or another in terms of the constituents of an optimal supply chain. The concepts make it necessary for interdependent institutions (organizations) to establish value for the transfer of materials, funds and knowledge in an efficient and successful way from source to end. The prevalence of a chain's interconnected business processes is also important for a well-synchronized supply chain that functions well. All in all, without the convergence of the corporate roles, value generation with clients at all stages and collective business thought and practice, the prevalence of a supply chain is impossible.

### **2.3 Supply Chain Management Practice and Firms Performance**

It has to be handled successfully to meet the business priorities of each Supply Chain Partner. It also contributes to the production of value to the end user.(Charles et.al,

2014) SCM operations are central to company performance; globalized industry today offers both firms a strategic edge by tackling numerous problems both domestically and abroad, and this pays tremendous attention. Efficient SCM delivers the benefits that go Beyond the organizations or the company itself, both on the upstream and downstream sides, and those companies may recognize their capacity for incorporating their external partnership, i.e. the firms' external suppliers, the business itself and the firms' clients, as well as the firms' internal working practices, with a view to improving their level of competition and efficiency, as well as the client (The Haque, 2013)

SCM shall include the coordination and configuration of the various processes required to make the goods available in a timely, reputable and appropriate manner. The distinctiveness of SCM may be accomplished by recognizing and making use of SCM practices in structured fashion. SCM procedures include a series of initiatives performed by the company to facilitate the efficient management of the supply chain. (Faisal, 2011)

## **2.4 Supply chain performance indicators**

Supply chain success is a two-dimensional concept of effectiveness and efficiency (David et al. 2006) Effectiveness is about „doing the right things“ & efficiency is about „doing things right“. Supply chain effectiveness relates to the preference of the end-consumer & the sole indicator is consumer satisfaction. Conversely, the reliability of the supply chain contributes to the quantitative success of the systems. Efficiency metrics compare production levels to input levels (Wang & William 2007).

The Supply Chain Council, a national association of organizations involved in SCM, launched the Supply Chain Operations Reference (SCOR) concept in 1996. The SCOR paradigm supports hundreds of performance metrics used in combination with five performance attributes: efficiency, responsiveness, durability, expense, and asset

metrics.(Theeranuphattana& Tang 2008) (Hausman, 2004) argues that, in modern SCM, consistency is assumed to be the same. A given and that factors in quality management and improvement are somewhat separate from those in the development of SCM hoses.(Hausman 2004) Supply Chain Council (2006) presents five SC performance attributes (Theeranuphatana& Tang 2008) As cited above (Sillanpää, 2010)

## 2.5 SC Reliability

The supply chain includes all the activities related to the processing of materials and the conversion of goods from the stage of raw material to the stage of delivery to the final customer, as well as the informational and financial processes related to them, along with coordinated and integrated management (Shafia et al.[2008](#)).

In a broader sense, a supply chain consists of two or more organizations that could be companies which produce parts, constituents, and final products or they could even include the supply-and-distribute service providers or the final customer as well (Supply Chain Council[2008](#)). The most important factor in the successful management of the supply chain is a reliable relationship among the partners in the chain in such a way that they can have mutual trust in each others' capabilities and activities.

Therefore, in the development of any integrated supply chain, increasing the confidence and trust among the partners and devising the reliability for them are the crucial factors to achieve sustainable success (Ghazanfari and Fatholla[2006](#)). In the current industries, choosing business partners and establishing a successful and sustainable communication with them regarding the previous standards and criteria is not feasible.

Hence, determining the quantitative criteria and parameters through which the most suitable partner could be chosen seems to be useful. The reliability factor is also one of the most effective criteria which mean the probability of the intact and flawless performance of the system for a definite and pre-scheduled period of time (Haj

Shirmohammadi[2002](#)).

On these grounds, the present paper aims to study the reliability rate in the supply chain model and to determine whether the relationships within the supply chain have a high reliability rate or not. In order to study this, the 'supply chain operational reference' (SCOR), which is a valuable tool to analyze supply chains, has been used. The SCOR model supports the operational evaluation metrics at three levels. The metrics of level one provide an approach to supply chain in order to assess management, and the metrics of levels two and three include more specific and detailed criteria regarding the categories and elements of the processes. The metrics of level one are systematically divided into five operational criteria, three of which, reliability, flexibility, and responsiveness, are customer-facing attributes, and the other two, costs and assets, are internal-facing ones. Each of these metrics is further divided into minor metrics at the lower levels (Supply Chain Council[2006](#)).

The rate of reliability, which is the operational criterion discussed in this article, is also assessed and measured at level one of the supply chain based on SCOR model through the metrics of perfect order fulfillment; at level two through the metrics of perfect order fulfillment, delivery performance to customer commit date, accurate documentation, and perfect condition of order (Stephan and Badr[2007](#)).

Level three of the supply chain under study also has minor and more detailed metrics for the assessment of the above-mentioned metrics. It is possible to calculate the reliability rate of each loop of the broad chain under study during different pre-scheduled time periods. In order to measure the reliability rate of the whole supply chain under study at a certain period of time, first, it is necessary to identify the type of the supply chain formed in one of the five positions-series, parallel, series/parallel, parallel/series, or composite, and then, based on the reliability formula of the related system, it is possible to calculate the reliability of the whole system at that period (Haj Shirmohammadi[2002](#)).

In comparison with previous studies, by calculating reliability measurement metrics in different levels of the supply chain and identifying the impact value of each of these metrics on variances of reliability criterion in different periods, this research has been able to offer a new method for prioritizing decreasing reliability factors in a supply chain in order to reduce their effects. In addition, this research is a case study in Iran which is suitable for computing reliability of supply chain for Iranian organizations.

The existence of fault in meeting the needs and expectations in every part of a chain causes the progressive increase in problems, and defect in one part of the system creates problems in other parts. This chain-like state prevails and creates even more problems. One of the key indices in increasing the competitive and qualitative power of the products and production services of organizations and institutes is creating and establishing reliable relationship with the chain of providers and suppliers of raw material and primary parts, and the careful assessment of the reliability rate of these relationships.

The success or failure of each supply chain in the market is eventually determined by the final customer or the consumer. Thus, in order to establish a successful new relationship in the supply chain, assessing the reliability of the relationship is among the crucial factors in this field (Xujie2009).

The SCOR model, which is a means of analyzing and configuring the supply chain, was devised by the Supply Chain Council. It was established by the Institute of Advanced Manufacturing Research, PRTM Counseling Company, and more than 65 major companies. It currently has over 850 members around the world.

The SCOR metrics are applied in relation with operation attributes. Operation attributes are the supply chain attributes through which it is possible to analyze and assess the company's supply chain strategy at each level separately and to compare it with other strategies. The metrics of level one are systematically divided into five classes, i.e., reliability, flexibility, and responsiveness, which are customer-facing attributes, and



costs and assets, which are internal-facing attributes (Table1; Supply Chain Council2006).

As mentioned before, a system usually consists of a number of constituent elements, or a number of smaller systems, or subsystems; the juxtaposition of which as well as their dependence on each other will influence the reliability of the system (Han et al.2007). The constituents of a system are linked to each other in one of the five positions: series, parallel, parallel/series, series/parallel, and composite.

At present, the subject of supply chain is of great interest among the world researches and articles in this regard. These researches include introducing various types of mathematical models, different managerial techniques, methods of control, and other topics concerning industrial engineering and management, especially supply chain management.

Some of the researches are as follows: Jabbour et al.(2011) have been studying to perform an empirical investigation about the constructs and indicators of the supply chain management practices framework. Banomyong and Supatn(2011) presented a supply chain performance assessment tool that measures the performance of key supply chain activities of a firm under different performance dimensions.

Christopher et al.(2011) studied to understand how managers assess global sourcing risks across the entire supply chain and what actions they take to mitigate those risks. Seifbarghy et al.(2010) analyzed the supply chain using the SCOR model in a steel producing company. Tian(2009) researched on equilibrium of coordination reliability of supply chain and deepening in division of labor in the perspective of dilemma. Lin(2009) studied system reliability evaluation for a multistate supply chain network with failure nodes using minimal paths.

Xujie(2009) has done modeling and analyzing supply chain reliability by different effects of failure nodes. (Jahandideh2008) studied and assessed the process of managing car parts suppliers' chain in SAPCO Company.( Klimov and Merkurjev 2008) presented a

simulation model for supply chain reliability evaluation.( Qing-kui[2008](#)) studied the reliability analysis and evaluation on member enterprise of manufacturing supply chain based on BP neural network.

(LirongCui[2008](#)) studied on reliability of supply chain based on higher order Markov chain. (Hwang et al.[2008](#)) evaluated the sourcing process in the SCOR model in the manufacturing industries of Taiwan. (Stephan and Badr[2007](#)) presented quantitative and qualitative approaches to manage risks in the supply chain operations reference. (Han et al.[2007](#)) reviewed and analyzed supply chain operations reference. Similarly, various studies have been done on supply chain and SCOR model in Iran, some of which can be cited here.

(Satitsatian and Kapur [2005](#)) devised an algorithm for reliability bound computation to assess supply chain networks. (Shepherd and Gunter[2006](#)) developed methods of determining supply chain reliability for a probable computation system based on the theory of reliability. ( Manavizadeh [2005](#)) presented a system of measuring the performance in the supply chain in order to establish genuine production.

(Lockamy and McCormack [2004](#)) examined the link between planning methods in the SCOR model for supply chain performance.( ZareiYaraki [2004](#)) studied sharing information in the supply chain of the country's automobile industry. (Riazy[1997](#)) devised a decision-making method for evaluation, selection, and development of suppliers in supply chain management. (Azimi [2001](#)) focused on measuring supply chain performance. (Teimouri [1999](#)) expanded the model for suppliers' selection and distribution from the standpoint of supply chain management.

## 2.6 SC Responsiveness

The responsiveness of supply chains to changing market requirements and their overall efficiency are important issues in supply chain design and management and therefore currently receive wide attention in the scientific community as well as in practice. Responsiveness can be defined as the “ability to react purposefully and within an appropriate time-scale to customer demand or changes in the marketplace, to bring about or maintain competitive advantage” (Holweg, 2005, p. 605). In contrast, a supply chain would be considered efficient if the focus is on cost reduction and no resources are wasted on non-value added activities (Naylor, Naim and Berry, 1999, p. 108).

Companies have three principal means to buffer against changes in quantity demanded for specific products, namely inventory, capacity and time. Safety stocks, excess capacity and safety lead times all provide a time buffer to be able to react to demand variability (Hopp and Spearman, 2004, p. 145). One could argue that one sensible approach to increase responsiveness could be to raise the inventory levels of finished goods or components, which would allow more flexibility for reactions to changes in customer demand. Increased inventory levels do, however, reduce the efficiency of the supply chain since they are costly, both in terms of storage cost and cost of capital.

This suggests that such an increase in inventory may not be the optimal approach to increase responsiveness – or, as Hopp and Spearman phrased it: “inventory is the flower of all evil, and variability is its root” (2004, p. 146), i.e. high inventory levels are a sign that something is suboptimal in the supply chain, and other strategies such as variability reductions may be more beneficial than inventory increases. In an efficient supply chain, suppliers, manufacturers and retailers manage – implicitly through independent ordering processes between tiers or through explicit coordination of ordering decisions of the different supply chain elements – their activities in order to meet predictable demand at the lowest cost. A responsive supply chain, in contrast, requires an information flow and policies from the market place to supply chain members in order to hedge inventory and available production capacity against uncertain demand (Fisher, 1997, p. 108).

Improving responsiveness in a supply chain, however, incurs costs for two primary

reasons: (1) excess buffer capacity and inventories need to be maintained, (2) investments to reduce lead times need to be made. Boeing, for example, at the end of the 1990s failed to achieve sufficient buffer capacity or inventory levels by pursuing a lean manufacturing strategy without considering the variability of demand in the aerospace industry (Naylor, Naim and Berry, 1999, p. 108 and p. 112). Airplanes fulfil most of the criteria for functional products as identified by Fisher, except long-term demand predictability (1997, p. 106). If, as in this example, end-user demand is subject to sudden, unpredictable variations, it is not sensible to implement lean manufacturing at the interface with the end-user (Naylor, Naim and Berry, 1999, p. 112). In general, the cost resulting from investments in responsiveness needs to be compared to the opportunity cost of lost sales resulting from stockouts (Thonemann, Behrenbeck, Küpper and Magnus, 2005, p. 18).

These stock outs are most likely to occur with products that are subject to demand fluctuations. Responsive supply chains aim to avoid such stock outs and therefore prioritise the ability to react to changing customer requirements (Alicke, 2003, p. 145). Providing the right degree of responsiveness and having an efficient supply chain at the same time is a goal that is hard to achieve and that typically involves trade-off decisions by management, since increased responsiveness can be perceived to come at the expense of reduced efficiency, and vice

versa. However, there may be strategies, such as revised planning approaches, that restructure supply chain processes to achieve both goals at the same time and enable a supply chain to be responsive and efficient simultaneously. Identifying strategies that achieve responsiveness and efficiency simultaneously is the goal of the research presented in this paper. Many authors see responsiveness and efficiency as distinct strategies that are strongly linked to different types of products. Fisher, for example, distinguishes innovative products with short product life cycles and functional, more commodity-like products (1997, p. 106). It appears to be sensible to think of products as being positioned on a continuum between functionality and innovativeness. Functional products “satisfy

basic needs, which don't change much over time..., have a stable, predictable demand and long life cycles" (p. 106). They are also characterised by relatively low contribution margins, low product variety and long order lead times (Childerhouse and Towill, 2000, p. 339). Innovative products, in contrast, are characterised by short product life cycles, high contribution margins, high product variety and unpredictable demand. Electronic products and fashion goods are examples for this category (p. 344). Linked to this Fisher then provides recommendations for the strategic alignment of supply chains and suggests that functional products require a focus on efficient processes, while innovative products require a focus on responsive processes (p. 109).

The requirements for supply chain management are different for these distinguished types of products – for products that are innovative and reflect new trends, demand is less predictable than for products that fulfil basic needs, such as sugar<sup>3</sup> (Fisher, 1997, p. 106). The uncertainty of demand for innovative products makes supply chain responsiveness a critical capability, since stockouts should be avoided in particular if the products have high contribution margins. For functional products aspects of efficiency, i.e. focusing on the elimination of waste or non-value added activities across the chain, prevail management's attention (Huang, Uppal and Shi, 2002, p. 193).

Some functional products may, however, also have quick response requirements of the supply chain – for example, milk and other dairy products are perishables with relatively stable demand patterns but limited shelf life. Also, companies often carry out promotions that can drastically change the otherwise stable and predictable demand patterns of products such as generic food. In such cases, pipeline stock is often "drained to no-one's real advantage" (Childerhouse and Towill, 2000, p. 338; Fuller, O'Connor and Rawlinson, 1993, p. 91).

Demand uncertainty is an important aspect that is linked to the classification of innovative or functional products. Innovative products are often characterized by a high degree of unpredictable demand uncertainty, whereas functional, commodity-like products face a high degree of demand stability. This point needs to be seen critically, since many commodities are confronted with the typical bullwhip effects – one of the

major concerns in supply chain management – upstream in the supply chain, with order batching, speculative buying, delays and suboptimal planning being the major reasons. Therefore, upstream supply chain members can be confronted with rather unpredictable demand, even for commodities. Consequently, the required responsiveness in a supply chain depends on the anticipated uncertainty of demand. This means that the required responsiveness depends on both the inherent deviations in demand and on the planning capabilities of the company (Baiker, 2002, p. 64). This relates not only to estimating the quantities demanded of certain products, but more generally to using market knowledge to exploit profitable opportunities in a volatile market place (Naylor, Naim and Berry, 1999, p. 108).

A company's ability to forecast and serve the demand for its products changes during a product's life cycle – during ramp-up and phase-out, demand is less predictable than during maturity (Alicke, 2003, p. 146). This means that the supply chain requirements also change over the product life cycle, which is a factor many companies do not consider. A survey of consumer packaged goods companies in 2005 indicates that of the companies that tailor their supply chain approach to the product, those that consider changes in volatility of demand over time for the segmentation of their product portfolio are

more successful – 50 percent of the best performing companies in supply chain management<sup>4</sup> used volatility as a segmentation criterion, compared to only 27 percent of the other companies, which use simpler criteria such as volume (Alldredge, Allen, Howe and Kelly, 2005, p. 21). This indicates that many companies do not realise the importance of tailoring the supply chain to the requirements a particular product has during the various stages of its life cycle

Management of supply chain responsiveness is particularly important when operating in a competitive market where short lead times might be critical and inventory – which can allow fast response – is risky (e.g., due to product obsolescence), costly and therefore reduces efficiency. These aspects become even more important for innovative products with short product life cycles, where management of supply chain responsiveness is

seen as a crucial capability. At the same time, more commodity-like, functional products generally require more efficient supply chains, combined with minimisation of the bullwhip effect. When supply chains are more able to react to changing market requirements than necessary – i.e., having achieved a higher than necessary degree of responsiveness – customers will have to carry the additional cost, which is also problematic (Fisher, 1997, p. 110). The goal is to design the supply chain such that the “products may flow as required by the customer throughout the life cycle” (Aitken, Childerhouse and Towill, 2003, p. 127). Clearly, there is no “one fits all” approach for successful management of the supply chain, but different strategies are appropriate for different products at different stages of their product life cycles.

For example, as noted earlier, a deliberate increase in safety stock may raise responsiveness through increased product availability when customer needs change unexpectedly. At the same time, however, such an increase in inventory levels raises the cost level both directly, i.e. through increased cost of capital and storage costs, as well as indirectly, since the products on stock might not sell and eventually become obsolete. This increased cost level reduces the degree of efficiency. This is an example for a trade-off between efficiency and responsiveness, which is visualised in Figure 3 below. Specifically, it can be seen that increasing safety stock is a trade-off decision because the responsiveness goal increases the willingness to accept higher safety stock, while the efficiency goal reduces the willingness to accept higher safety stock.

The two goals balance each other, causing the system to finally adjust to a specific level of safety stock. As was outlined previously, there may be investment opportunities that increase both the degree of efficiency and the degree of responsiveness of the supply chain. Hopp and Spearman describe the example of Moog, Inc., a producer of precision servo valves (2004, p. 146). This company used lean methods to eliminate waste, thus increasing efficiency. At the same time, they increased selected inventory buffers using sophisticated models to segregate certain problems in production, which were addressed later. All other inventory buffers were reduced, again increasing efficiency. The result “has been much greater responsiveness to the customer with improved

service.

The improved flow also resulted in an unexpected (for management) benefit – a greater than 5% improvement in productivity” (p. 146). One other possibility for such an improvement of supply chain performance on both of these dimensions is to consider the structural conditions of both demand and supply in the (re-)design of the planning system. Depending on product characteristics, forecast quality etc., certain options may outperform others on dimensions, responsiveness and efficiency.

This could mean, for example, that such a move leads both to improvements in the time it takes for the supply chain to adjust to changes in demand, as well as to reductions in safety inventory because of improvements such as lead time reductions. This is visualized in Figure 4 below. Here, it can be seen that planning improvements are not a trade-off decision because both the responsiveness goal and the efficiency goal increase the willingness to invest in planning improvements. When either efficiency or responsiveness are improved through an improved planning system, willingness to invest shifts to the other goal. This behavior causes a reinforcing feedback loop, since the investment aimed at achieving the respective other goal will again have a positive impact on the former.

There is no boundary for investments in planning systems, while there is one in the case of safety stock. There may also be performance measurement problems caused by time delays in the system, leading to suboptimal future decisions. In supply chains, time delays are prevalent at various points, for example there may be long order lead times, or information about demand takes some time until it passes through the supply chain – and might even be distorted on the way. As an example of a performance measurement problem leading to wrong future decisions, consider an investment in a manufacturing cycle time reduction.

This investment may only show a measurable change in relevant performance measures after a certain time period, leading the company to believe that the investment did not cause the desired effects and actually introducing a typical worse-before-better behaviour. This, in turn, may lead them to discontinue these or similar



investments, which would have a negative effect on responsiveness. In addition to such internal policy issues, supply chains also typically face a number of external challenges that can reduce the responsiveness of the system. Examples include long component lead times, erroneous components, capacity constraints and missing information about true end customer demand. Information flows, in general, are a major concern in complex supply chains. A responsive supply chain, which Fisher suggests for innovative products such as many high tech products, requires an information flow and policies from the market place to supply chain members in order to hedge inventory and available production capacity against uncertain demand (1997, p. 108).

In the high tech industry, for example, the trend to outsource production stretched supply chains across the globe. As a consequence, access to critical data about the supply chain became difficult or impossible, as details about quality, inventory levels or manufacturing capacity are no longer available. "For example, a computer hardware company's supply planner, trying to meet a spike in demand for certain products, needs capacity and inventory information from several components suppliers and several contract manufacturers, but the data may be locked up in the IT systems or spreadsheets of a dozen or more companies" (Pande, Raman and Srivatsan, 2006, p. 16).

In this industry and elsewhere, supply chain planning and control policies are often suboptimal, which results in inefficient systems that cannot satisfy customer demand appropriately, or only at very high cost. Although Fisher's principal ideas of the alignment of the supply chain strategies to the type of product are plausible, the interrelatedness also suggests that actions taken to improve efficiency, such as investments in manufacturing cycle time reductions, or different policies such as modified planning systems, could simultaneously lead to improvements in responsiveness. On the other hand, having achieved a high degree of responsiveness allows management to direct its attention more towards efficiency and cost considerations. In view of this interrelatedness, a focus on responsiveness or efficiency does not necessarily involve trade-off decisions.

## 2.7 SC Information Sharing

Information sharing is defined as “The extent to which critical and proprietary information is communicated to one’s supply chain partner.” The advancements of information technology have greatly contributed to the evolution of sharing information throughout the SC. Regular exchanges of information enables SC parties to perform as a single body. Shared information has different kinds related to inventory, resources, products, demands, delays, and planning information. It may also include information about quality, logistics, customer and general market information, and design information. In order to yield best results, shared information has to be adequate, accurate, credible, and timely. Information sharing affects performance in terms of improved customer responsiveness, decreased costs, enhanced service levels, and reduced levels of complexity (Ayman, 2014).

We are living in the “information age”. The availability of information has been increasing at an exponential rate during the last decade. The explosion of information availability has given decision makers of supply chains a lot of possibilities and opportunities for improvements in their supply chain efficiency. As knowledge is power, information is power in supply chains. “It (information) provides the decision maker the power to get ahead of the competition, the power to run a business smoothly and efficiently, and the power to succeed in an ever more complex environment. Information plays a key role in the management of supply chain.” (Nahmias, 2001) The performance of a supply chain depends critically on how its members coordinate their decisions. Sharing information is the most basic form of coordination in supply chains. There are a number of new emerging technologies available to connect the members of a supply chain to support information sharing. Recent developments in corporate information technology, such as Enterprise Resource Planning (ERP) systems, allow information to be shared seamlessly between members of a supply chain (Hyun-cheol, 2010).

## 2.8 SC Cost Management

Cost control is one of the key factors ensuring the financial efficiency. The financial result, despite the simple formula for its calculation, in fact, is a very difficult value to determine. Further difficulties associated with the proper measurement of financial results occur especially in a dynamically changing business environment (Białas, 2011). Collection of accurate and adequate information on costs is a key element in the management process both considering the separate company as well as inter-organizational dimension of management.

More and more managers are aware of the fact that effectiveness is a source of competitive advantage and are trying to improve and develop the methods of analysis and management of costs and processes. An area where it is possible to achieve significant cost savings is supply chain. Cost reduction is one of the most frequently mentioned goals in supply chain management. In addition, efforts to reduce costs are forcing companies to focus increased attention on the relationships with other participants within the supply chain, so that both suppliers and customers are able to improve the competitiveness and profitability. In response to these realities the literature on the subject lists the specific concepts of cost management within the supply chain, as shown below

- Supply Chain Costing:-Three cost levels need to be analyzed: direct, activity-based, and transactions cost to account for all costs in a supply chain and find the right partner to control them.
- Proactive Cost Management:-Proactive cost management is a market oriented, anticipatory system. Specific techniques are used to coordinate activities, as a case study from the car industry shows.
- Lean Management Accounting:-Linking strategic and operational levels to understand customers and processes, and thus enhance customer value. A case study from car sales offers details
- Interorganizational Cost Management:-Managing supplier and customer costs in

coordinated cost reduction programs are carried out during product design and manufacturing

- Organizational Settings:-Cost Management has a functional and an institutional dimension. Principal-agent relationships are important in the application of cost management in a supply chain.

These concepts show that traditional cost management ignores the needs of the supply chain cost management. An important element of the concept of cost management in the supply chain is the two dominant perspectives. The first uses target costing assumptions, determines the way in which goals are set and can be achieved. The second perspective is based on activity based costing. Reference to target costing and activity based costing as the instruments of cost management plays a major role in the presented concepts (Seuring, Goldbach, 2002).

Cost management of an enterprise (so-called intra-organizational cost management) can be described as a portfolio of activities and procedures that enable organizations to manage their internal costs and to make cost decisions. This portfolio in order to manage costs may include a number of measures, applied within its own internal value chain, such as Activity Based Costing, Target Costing and continuous improvement (Kaizen Costing). On the other hand, in the context of supply chain management, occurs the concept of inter organizational cost management, described as an extension of intra-organizational efforts to manage costs

The domains of inter-organizational cost management are buyer-supplier formalized interactions, the objective of which is to identify opportunities for joint cost reduction (Cooper, Slagmulder, 2004). It can be expected that organizations with high levels of internal cost management will be able to use their knowledge and experience to develop similar activities as part of the inter organizational cost management. The same planning and control skills that are the foundation to manage costs internally may be useful for the wider benefit of all partners in the supply chain. The business practice shows that particular activities of the internal costs management can be translated into inter-organizational environment. Knowledge and experience in the use of internal cost

management tools can be applied to develop inter-organizational cost management tools designed for the supply chain participants to their common benefit. Therefore, the ability of organizations to manage costs internally is an important determinant and the foundation that allows inter organizational cost management,

The application of inter-organizational cost management in a company requires the fulfillment of a number of conditions, including:– determining the specific objectives of reducing costs with regard to suppliers,– collaboration with suppliers and customers in finding ways to reduce their costs,– taking into account the profitability of suppliers when negotiating the purchasing price,– ensure effective collaboration with suppliers and customers. Due to the far reaching consequences of close cooperation between companies, it is important to think not only about how to develop relationships in the supply chain, with whom participants, and under which forms of contract, but also how to coordinate that relationships and which management control mechanisms and processes should be used to support, plan, measure and assess the activities and their results (Ramos, 2004).

One of these inter-organizational processes allowing the establishing and maintaining cooperation in the long term, is the exchange of information generated by the accounting system. With the increasing integration of suppliers, manufacturers, contractors, it is reasonable to adjust the management accounting system in order to generate information that is useful in the formulation, implementation and execution of strategy aimed at achieving competitive advantage. The information generated by management accounting are the primary source of data for decision-making and control. Proper management accounting techniques may have important implications for inter-organizational supply chain primarily due to:

The provision of timely and accurate information to support and facilitate the decision-making throughout the organization and– provide information on the effectiveness of its activities, as well as the performance of individual business units to ensure that activities are consistent with the plans. Developing a long-term inter-organizational

cooperation usually involves a complex process of negotiations. In addition, mechanisms and activities that play a role in supply chain relationships have to be controlled in some way. This also entails the specific information needs. Management accounting is seen as an appropriate set of techniques capable of providing this type of information

**Management Accounting Techniques for Supply Chain Management** In order to meet the requirements of supply chain cost management it is essential to engage a variety of management accounting techniques, especially the newest, currently being developed. These techniques are gaining popularity as means by which companies, including those operating in the supply chain, are able to meet the new challenges, gain competitive advantage and continually improve management systems. These new techniques are used in a wide range of businesses in response to changing economic trends. It should be emphasized that the new management accounting techniques are considered to be new, not because they provide very different ways of calculation, but because they allow to look at the economic performance in the context of the supply chain.

While the traditional management accounting is aimed at providing information on how profit can be maximized by rigid forms of control and accountability mechanisms, new techniques seek to determine how the value that is acceptable to all participants in the value chain can be maximized, and thus what level of performance can be achieved in the supply chain. The new management accounting techniques meet a number of requirements that are specific to supply chains. The most important are:– ensuring effective cooperation between suppliers and customers, – management of communication and negotiation among the participants in the supply chain,– exploit the possibilities of continuous improvement,– eliminating opportunistic behavior– enabling continuous learning and coordination. A common feature of modern techniques of management accounting is their strong focus on operations and processes and a horizontal look at the organization, what enable crossing the traditional boundaries of the company.

Although most popular are primarily two techniques of management accounting: Target

Costing and Open Book Accounting, actually also other techniques can be useful in the process of supply chain cost management, for example the Activity Based Costing, Kaizen Costing, Theory of Constraints, Value Chain Analysis or the Balanced Scorecard. Open Book Accounting is a technique involving the sharing of reliable accounting information among supply chain participants. This approach reflects the ideal collaboration between buyers and suppliers through the disclosure of cost information of individual companies.

Open Book Accounting enables the supply chain participants to obtain information about the structure of the production costs of other participants, assessing the effects of changes made by others, estimate the costs of new products, and identify areas of significant cost savings and better control of production costs of finished products (Sobańska, 2010).

Target Costing provides the ability to control the level of costs and profits in the context of the opportunities arising from the competitive environment. It is a cost management technique that allows a look back at how the products should be designed in order to achieve the target cost. This procedure determines the required cost savings and enables the implementation of improvements in the supply chain. Target Costing technique applied in the supply chain environment can be extended to interorganizational co-ordination of the activities undertaken in the process of cost management (Ramos, 2004).

The use of Activity Based Costing (ABC) for the supply chain is becoming quite common and replaces the traditional method of cost allocation system with a more accurate cost assigning. ABC improves the allocation of overhead costs to activities, processes, products, services and customers. This costing system focuses on the activities and provides valuable information useful to coordinate the activities in the supply chain. It also allows the observation of causal relationships in the cost

structure. ABC allows the identification of additional services provided by suppliers like

designing and development of products that increase the value of the final product and reduce internal costs, including control and service. Kaizen Costing is a similar technique to Target Costing because of the assumption of cost reduction, with the exception that Kaizen Costing focuses on reducing costs in the production phase of the product life cycle. According to Cooper and Slagmulder (1999), Kaizen Costing is the basic technique of inter-organizational cost management in the phase of production process. Kaizen system allows buyer set specific cost-reduction objectives for its suppliers. Suppliers, in turn, use their own system of Kaizen Costing to identify which areas have the opportunity to reduce costs, and translating this information into price negotiations with their suppliers.

Theory of constraints allows companies to focus on managing constraints that slow down the rapid movement of products through the supply chain. This in turn can help the supply chain participants to optimize financial performance through the use of their potential and resources (Simatupang, et al., 2004). Value chain analysis can be carried out by a single company taking into consideration external perspective, or jointly by buyers and suppliers in the supply chain. This approach involves not only the cost of buyer but also the activities and costs of other companies in the value chain (for example suppliers and buyers) and recognizes the interdependence of these activities and costs (Dekker, 2003).

Balanced Scorecard is an approach that complements traditional financial measures of performance of the enterprise. Modifying the Balanced Scorecard as a performance measurement method can be used to develop a comprehensive method of measuring supply chain performance. An essential task is to link the balanced scorecard with the main objectives of supply chain management. The best results for cost management purposes gives the connection of Balanced Scorecard with other methods used to manage, for example, the combined use of the BSC and Activity Based Costing and Activity-Based Management.

The adoption of the perspective of supply chain for the Balanced Scorecard expands the internal perspective of Balanced Scorecard so that it includes both internal



functions and effects resulting from the partnership and co-operation in the supply chain. From this perspective, a balanced scorecard combines integrated and non-integrated measures and allows the perception of the success of enterprise as resulting from the success of the whole supply chain (Brewer, Speh, 2000). The concept of Balanced Scorecard distinguishes four perspectives: internal processes, customer satisfaction, financial performance, as well as ways of improvement, innovation and growth of companies.

Linking these perspectives to the concept of supply chain management requires the selection of appropriate measures, which are not limited to a single organization, but take into account the processes resulting from inter-organizational relationships. The concept of linkages between supply chain and the balanced scorecard allows to evaluate the ability of the supply chain to meet management objectives, which can be evaluated by measures, identified with the perspective of internal business processes. Total Cost of Ownership (TCO) is a technique that analyzes the costs of acquisition and use of goods or services during their life cycle. TCO can be used not only to build and manage effective relationships between the participants in the supply chain, but also to identify potential opportunities for improvement and to promote co-ordination and learning between partners in the supply chain. Most Total Cost of Ownership related literature investigates this tool from a buyer perspective and consequently does not study TCO from an inter-organizational perspective. However within the supply chain management, Total Cost of Ownership in particular is a significant tool, since it can be an effective way of tracking the hidden indirect costs associated with supplier transactions, especially given that purchasing divisions are considered to be strategically relevant. Conclusion The purpose of costing system is to rationalize processes of business management.

Both the costs at the planning stage as well as being recorded provide a valuable information about the degree of improvement of performance in the management system of both business units as well as the entire supply chain. In a changing environment, management accounting must follow the changing economic trends. For

the purpose of supply chain management it is necessary to develop new methods of management accounting, or modification of existing techniques. It is also important to look at the supply chain as a whole. Although it is often considered that only the large corporations introduce innovations, there are many smaller and medium-sized companies that are participants in the supply chain together with large of companies. The condition of their subsistence to a great extent is the ability to function in larger organizations, being a member of the supply chain. Efficient supply chain cost management is possible by the use of appropriate methods and tools, which include new cost accounting systems that generate information on the level and structure of costs in the desired cross-section information.

In recent years, it can be observed a growing interest in the field of supply chain management accounting. The combination of operational and financial dimension can provide a competitive advantage and operational stability. Managerial accounting has therefore an important role to play in improving competitiveness by improving supply chain management processes.

## **2.9 Organizational Performance**

Organizational success refers to how effectively a company meets both its market-oriented targets and its financial objectives (Li et al., 2006). SCM's short-term goals are mainly to improve efficiency and decrease inventory and processing time, while long-term objectives are to increase market share and profitability for all participants of the supply chain (Tan et al., 1998). Financial metrics have acted as a method for comparing organizations and measuring the actions of the enterprise over time (Holmberg, 2000). Any organizational effort, including the management of the supply chain, can eventually contribute to improved organizational efficiency. A number of previous studies have measured corporate success using both financial and business criteria, including return on investment (ROI), market share, gross margin on revenue, ROI growth, sales growth, market share growth and overall competitive position (Vickery et al., 1999; Stock et al.,

2000; and Li et al., 2006).

## **2.10 Empirical review of studies**

The impact of the SCM practice on competitive advantage and organizational performance was conducted in a report. This study conceptualizes and develops three dimensions of SCM practice (management of supplier relationships, management of output flows, and creation and marketing of products) and discusses the relationships between these SCM activities, competitive advantage and organizational performance. (Salazar, 2012)

Data from influential organizations for the analysis was collected and the relationships suggested in the system were evaluated using robust statistical techniques. The findings show that higher levels of SCM practice can contribute to improved competitive advantage and improved performance of the organization.

A research carried out by Sillanpää (2010) on Supply Chain Efficiency Assessment in the Manufacturing Industry. The main objective of this study is to establish a manufacturing industry supply chain measurement framework, determine what data should be calculated and validate the supply chain measurement framework for the case business. The core theoretical concept of supply chain performance assessment is discussed in this report. Time, profitability, order book analysis and management analysis were established as the main elements of the measurement system.

clemencic (2006) performed the case of Denmark Manufacturing Company named Danfoss Heating District Business Area research on supply chain management by presenting the supply chain as a strategic asset, the study attempted to advance theoretical frameworks that improve the efficiency of the supply chain, especially in service level and logistics cost. The study analyzed SCM practice by splitting them into essential elements defined in the (cohen, 2004) model, continuing to evaluate SC strategies, method, organization, partnership model and evaluating SC performance in the context of current performance metrics by dividing time, operation, quality and cost into four critical success areas.

by measuring case supply chain efficiency, the measurement system is checked. A valid framework for supply chain performance assessment in the manufacturing sector is the measurement framework. It is said that monitoring the efficiency of the supply chain is extremely important in the growth of the supply chain. It is mentioned that evaluating the efficiency of the supply chain is extremely important in the growth of the supply chain. In this analysis, the measurement framework provides guidance for measuring the supply chain in the manufacturing sector, but the measurement framework may also be used in other fields of industry.

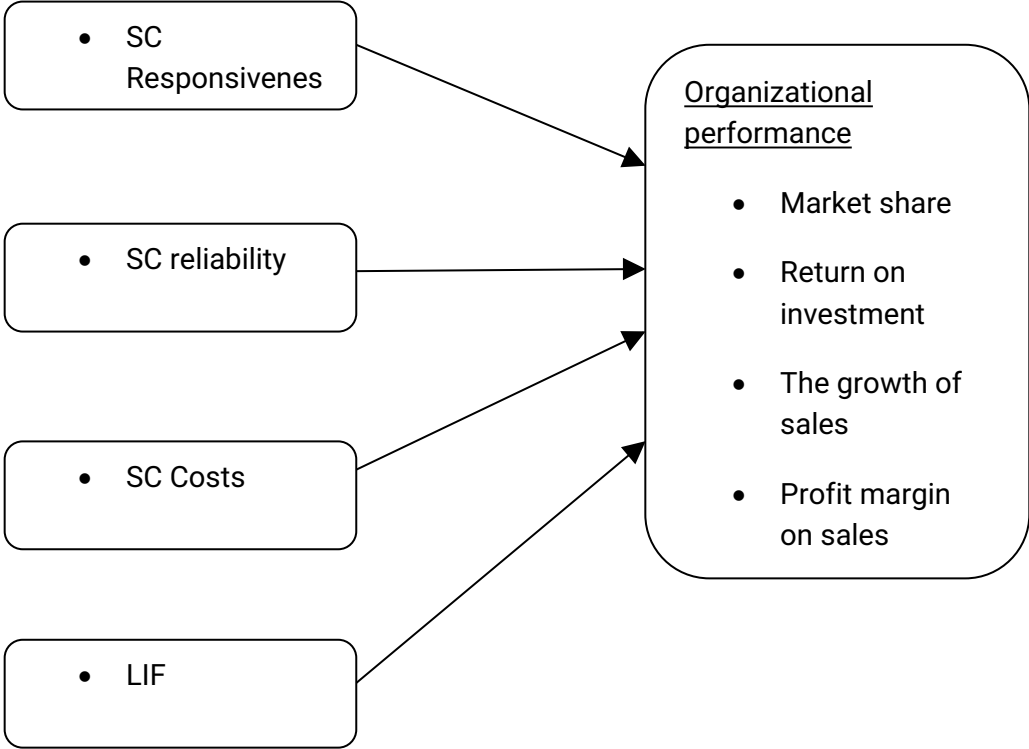
researcher's study of good supply chain strategy concluded that, as described by Cohen (2004, p. 18), all building blocks are present today in the supply chain strategy and actually support Vision as a whole, but they have not been revised and organized in one document. The review of the collaboration model with external partners, the study also concluded that it is also an area for improvement, particularly in terms of identifying key collaboration partners to whom operational activities can be outsourced or sourced (speaking of joint demand planning efforts with key customers) or better use of e-commerce to improve the effectiveness of operational processes (eglocation of order). The researcher concluded, in general, that the ideas and techniques applied contribute significantly to the market outcome

Generally, it can easily be understood from above literature reviews that the work on metrics of supply chain management and its impacts on various viewpoints of the enterprise and overall supply chain partners increase and deliver strong histories. SCM's relationship with results, however, cannot be considered definitive (Cousins, et al., 2006). Significant gaps in study design hinder comparability amid the growth of empirical research in the last few year there is lack of agreement on the concept

## **1.11 Conceptual frame work**

On the basis of a comprehensive analysis of relevant literature and, in particular, of the work of

(Klemencic, 2006), (Salazar, 2012) and (Mohammed, 2014) the following conceptual framework in which this specific study governed was developed:



## **3 UNIT THREE**

### **Research methodology**

#### **3.1 Introduction**

A research methodology encompasses research design, research approach, research techniques, sample design (population, sampling frame, sampling unit, sampling technique, sample size and sampling), primary and secondary sources of data, data analysis and interpretation and finally data presentation.

#### **3.2 Research design**

The research design helps the researcher to organize his/her ideas in a form whereby it will be possible for him/her to look for flaws and inadequacies. Such a design can even be given to others for their comments and critical evaluation. In the absence of such a course of action, it will be difficult for the critic to provide a comprehensive review of the proposed study (Kothari, 2005). Therefore the study is apply explanatory research design which aimed at to collect data from members of the population and describe existing phenomenon with reference to Employees' Perception on the Effects of Supply Chain Management Strategy on Firm Performance of Meta Abo brewery Ethiopia.

#### **3.3 Research Approach**

This study will use mixed type of research approach. The main purpose of using this approach is to gather the data which couldn't be obtain by using a single method, for addressing and more understanding about the objective of the study and to provide a compressive data presentation and analyses of the research problem.

#### **3.4 Research techniques**

In order to get fresh, clear and reliable data on the Employees' Perception on the Effects of Supply Chain Management Strategy on Firm Performance focus group discussion and questioner will be the correct method of data collection (Boyd et al. 2004 as cited by Yebeletal (2012) stated that the questionnaire method has advantages in terms of the resource fullness of the method as well as speed and cost. Open and closed ended questionnaires were distributed to the selected respondents of employee.

### **3.5 Sampling Design**

The research would explore Employees' Perspective on the Impact of Supply Chain Management Policy on Firm Efficiency in the case of Meta Abo Brewery. In order to enhance the significance, feasibility and precision of the research results, the researcher uses packaging, brewing, customer service, sells and marketing, HR, procurement and finance team for sampling techniques to achieve a representative sample size of the total target population.

### **3.6 Population or Universe**

The focus demographics of this research would be workers working in the Meta Abo brewery. Respondents have chosen using the probability sampling system, while focus group discussion the researcher uses the non-probability method primarily for the purpose of sampling the staff functional managers. Therefore, all divisions would be included in the analysis.

### **3.7 Sampling Technique**

The study uses both the probability and non probability sampling methods to select a representative sample size of the target population (Kothari, 2005). In the probability sampling technique, from probability sampling design, stratified and systematic random sampling method was used to select the target department for the study. It is obviously difficult to undertake all the company's employee who are working in both branch due to time and financial constraint. So we have to divide by their department and simple random sampling has been used for non managerial workers in selecting the representatives following the method of proportional allocation under which the sizes of the samples from each stratum .but for the managerial section non random sampling has been conducted since every department heads engaged in focus group discussion to have full and representative sample collection.

### **3.8 Sample Size**

For non probability sampling, sample size determination is unnecessary but for random

sampling, sample size determination for the research is as follows.

Conducting a study on a whole population is not manageable to run the investigation in a desirable manner. What is preferred is taking a representative sample size. According to Kothari (2006), the study uses the sample representative of the largest target population of the organization.

The brewery has two branches, one in Addis Ababa and the other is in Sebeta. The researcher selected sample representatives from 1200 total number of employees with the level of confidence 95%,  $Z = 1.96$ , margin error 5% and using the formula (Survey Methods and Practices, 2003)

$e = \text{Margin of error} = 5\% = 0.05$

The  $p = \text{estimation proportion of employees} = 0.5$

$N = \text{the population size} = 1200$

$n = \text{sample size};$

$$n = \frac{Z_{\alpha/2}^2 [p(1-p)]}{e^2 + \frac{Z_{\alpha/2}^2 [p(1-p)]}{N}}$$

$$n = (1.96^2) [0.5(1-0.5)] / (1.96^2) [0.5(1-0.5)] / 1200 + 0.05^2$$

$$n = 112$$

This also supported another literature Source: (Carvalho, 1984) as quoted by (national Archive report Richmond, 2005) table kind Sample size determination

By using the above formula 122 respondents be selected from the total population of 1200 employees in the selected branches in order to collect relevant information for the study. And the sampling technique of this study uses proportional stratified sampling. The researcher makes the size of each stratum proportional to the size of the population. Since the number of employees in both branches was not the same, the number of samples for both branch of brewery has been calculated by the following way:



No	Population Size	Sample Size	
		No of employees	Proportion of sample size
1	Sebeta branch	710	$[(710/1200)*112] = 67$
2	Jacros branch	490	$[(490/1200)*112] = 45$
	Total	1200	112

### 3.9 Sources of Data Collection

In the process of collecting data, researcher is actively involved in both primary and Secondary data collection, the first is provided by robust investigation and collection of data from questioner and the second could be collected from past research, journals, articles, and studies. These data can be gathered through several sources: plant publications, books, journals, articles, websites, internal records, and other sources (Ajayi, 2017) Primary and secondary data sources used by the researcher in gathering the needed information.

#### 3.10 Primary Data

Primary data refers to type of data in which the researcher collects directly from the field. It is also referred to as first hand data obtained from the field; the data collected from the following groups: open and closed ended questionnaires distributed to the selected respondents who are the main sources of information to the study and interview.

##### 3.10.1 Questionnaires

According to Leedy (1984), questionnaires are appropriate instruments widely utilized by researchers to obtain facts about current conditions, practices and also to make

inquiries concerning attitudes and opinions. Furthermore, they used due to their ability to collect as much information as possible within a short time which helps the researcher to save time. Thus, the researcher used close-ended and open-ended questionnaires that administered to the respondents. The first part consists of Social-demographic characteristics of respondents the rest questionnaires used to address the specific objectives specifically;the rest questionnaires I be designed using Likert scale to address issues of work life conflict and employee of in brewery

### **3.11 Data collection instrument**

Accurate and systematic data collection is critical to conducting scientific research. Data collection allows us to collect information that we want to collect about our study objects. Depending on research type, methods of data collection include: documents review, observation, questioning, measuring, or a combination of different methods the researcher will use questionnaire to collect data this collection instrument consistent of a series of questions and other prompts for the purpose of collecting information from respondents.

### **3.12 Methods of Data Analysis and Interpretation**

The data gathered through primary and secondary methods to analyze by using both qualitative and quantitative data analysis methods. The data to be collected through questionnaire analyzed using SPSS software and used to present using descriptive and inferential (statistical) analysis. Specifically, descriptive statistics (mean, standard deviation and charts) analysis be used to describe relevant aspects of phenomena about the variables and provide detail information about each relevant variable and inferential statistics, correlation is been used to examine the data.

## **4. CHAPTER FOUR**

### **4.1 Data Presentation, Analysis and Interpretations**

This study tried to investigate the relationship between supply chain management strategy and Meta Abo brewery s.c performance, as described in the preceding chapter. As a result, the study's findings are presented and analyzed in this chapter the questions on the questionnaire were five scales were developed, ranging from five to one, with five representing highly agree, four agreeing, three neutral, two disagreeing, and one severely disagreeing. Correlation and regression analysis were conducted for scale typed questionnaires in order to analyze the association between supply chain management strategy and supply chain & firm performance.

A total of 112 questionnaires were issued to employees, with 80 (69%) of them proving to be legitimate and being used for analysis. SPSS (version 16.0) statistical software was used to present and evaluate the obtained data. To determine the degree of link between the variables under examination, the researcher employed correlation analysis, specifically Pearson correlation. Analysis of Regression

## 4.2 Ratio of responses

A total of 112 questionnaires were issued to employees, with 80(69%) of them being completed. Due to a lack of desire to submit information, the remaining 37 surveys were not gathered. And some of the respondents were on leave. The response rate is based on these 67% of the time.

Demographic Characteristics		Frequency	Percent
Gender	Male	55	76.4
	Female	17	23.6
Age	25 to 35 years old	46	63.9
	above 35 to 45 years old	16	22.2
	above 45 years old	10	13.9
Education Attainment	Diploma	16	22.2
	Degree	42	58.3
	master's degree	14	19.4
How long have you been working in this company	Less than 3 years	34	47.2
	3 to 5 years	31	43.1
	Above 5 to 10 years	7	9.7
How many years have you been in your current position	less than 3 years	42	58.33
	3 to 5 years	28	38.89
	above 5 to 10 years	2	2.78

The demographic features are presented as follows, based on the results in table 4.1. Males make up 55 percent of the responders (76.4 percent), while females make up 17 percent (23.6 percent). 46 (63.9 percent) of the participants are between the ages of 25 and 35, 16 (22.2 percent) of the participants are between the ages of 35 and 45, and the remaining 10 (13.9 percent) of the respondents are over 45. When it comes to

educational attainment, 16 (22.2 percent) of the respondents have a diploma, 42 (58.3%) of the respondents have a degree, and 14 (19.4%) of the respondents have a master's degree.

When we look at how long they've been with the company, we see that 34 (47.2%) have worked there for less than three years, 31 (43.1%) have been there for three to five years, and 7 (9.7%) have worked there for more than five to ten years. The respondents' length of stay in their current position is described as follows: 42 (58.3%) of the respondents have been working in their present position, 28 (38.89%) of the respondents have been working in their current position and the remaining 2 (2.778%) have been working in their other position.

		Frequency	Percent
Which of the following functions most accurately describes your responsibilities?	Finance	3	4.2
	logistics/transportation/distribution	2	2.8
	supply/purchasing/procurement	20	27.8
	Regulatory	1	1.4
	supply chain management	13	18.1
	human resource management	2	2.8
	sales/marketing	29	40.3
	Others	2	2.8
	Total	72	100.0

Table 4.2 shows the departments in which the participants are located. 29.3% of the respondents worked in sales/marketing, 20.7% in supply/purchasing/procurement, 13.1% in supply chain management, and 3.2% in finance. 2(2.8%) of the participants worked in logistics/transport/distribution, and 2(2.8%) of the respondents worked in the transportation/distribution industry working in human resource management, 2(2.8%) of the respondents have been working in others departments and the rest

1(1.4%) of respondents have been working in regulatory.

### 4.3 SC reliability

Description	1	2	3	4	5	mean	S.D
When it comes to selecting suppliers, we prioritize quality	0(0)	0(0)	3(4.2)	31(43.1)	38(52.8)	4.49	0.581
We solve problems on a regular basis in collaboration with our suppliers	0(0)	0(0)	9(12.5)	38(52.8)	25(34.7)	4.22	0.655
We have assisted our suppliers in improving the quality of their products	0(0)	0(0)	18(25.0)	33(45.8)	21(29.2)	4.04	0.740
Our main suppliers are involved in our planning and goal-setting processes.	0(0)	1(1.4)	20(27.8)	33(45.8)	18(25.0)	3.94	0.767
For supplier relationship management, our organization has set specific performance goals (SRM)	0(0)	3(4.2)	20(27.8)	33(45.8)	16(22.2)	3.86	0.810
Our organization measures the contribution of our suppliers to our profitability on a regular basis.	0(0)	1(1.4)	10(13.9)	37(51.4)	24(33.3)	4.17	0.712

Our vendors are aware of how we work. Their judgments and actions have an impact on the SRM process.	0(0)	1(1.4)	14(19.4)	41(56.9)	16(22.2)	4.00	0.692
The requirements for the SRM process are developed by a cross-functional team.	0(0)	2(2.8)	21(29.2)	37(51.4)	12(46.7)	3.82	0.732
Everyone in our firm is aware of how their decisions and actions affect SRM.	0(0)	5(6.9)	11(15.3)	35(48.6)	21(29.2)	4.00	0.856
<b>Overall</b>						4.06	0.48

The reliability metric was used to examine the extent to which a company built a business process that lays out the framework for how the company's relationships with its suppliers will be formed and managed. Nine items were used to assess this measure. The level to which an organization built their SRM process was assessed using a 5-point Likert-type response scale (1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree). This measure has a Cronbach's alpha of 0.838, with an overall mean of 4.06 and a standard deviation of 0.48. This shows that the majority of respondents agreed on SRM topics with a common understanding

The following is a list of responses to questions on supplier relationship management, as shown in table 4.3: In response to the first question, "Does the company consider quality to be our number one factor in selecting suppliers?", the majority of respondents agreed, with 38 percent strongly agreeing, 31 percent agreeing, and three percent indifferent. The standard deviation is 0.581 and the mean is 4.9. The majority of respondents agreed on the second question, "if the company often solves problems along with their suppliers," with 38 percent agreeing, 25 percent strongly agreeing, and 9 percent neutral. The standard deviation is 0.655 and the mean is 4.2. Regarding the third

issue, "whether the company has assisted suppliers in improving their product quality," the majority of respondents agree (33.58 percent), while 21.92 percent strongly agree (29.22 percent), and the remaining 18 (25% ) are neutral. The standard deviation is 0.740 and the mean is 4.04.

The majority of respondents 33(45.8) agreed on the fourth item, "if the organization includes its important suppliers in its planning and goal-setting operations." Twenty-seventeen percent (27.8%) of the respondents were impartial, 18 percent (25%) strongly agreed, and one percent (1.4%) disagreed. The standard deviation is 0.767 and the mean is 3.94. The majority of respondents agree with the fifth item, "Our organization has established performance targets for supplier relationship management (SRM)," with 33 (45.8%) agreeing, 20 (27.8%) neutralizing, and 16 (22.2%) strongly agreeing. While 3 (4.2 percent) of those polled disagree. The standard deviation is 0.810, and the mean is 3.86. The majority of respondents agreed with the sixth item, "if the company frequently measures its supplier's contribution to its profitability," with 37 percent agreeing, 24 percent strongly agreeing, and ten percent neutral. While 1 (1.4%) of the respondents said they disagree. The standard deviation is 0.712, while the mean is 4.17. Concerning the seventh point, "if the suppliers understand how their decisions/actions affect the SRM process", majority of the respondents which is 41(56.9%) of them answered agree and 16(22.2%) of the respondents answered strongly agree Whereas 14(19.4%) of them were neutral and the 1(1.4%) of the respondents answer was disagree. The mean is 4 and standard deviation is 0.692

In response to the eighth question, "whether supplier relationship management process requirements are set by a cross-functional team," 37.4% of respondents agreed, 21.2% of respondents were neutral, and 12 (46.7%) of respondents strongly agreed. Whereas 2 (2.8 percent) of them expressed their dissatisfaction. The standard deviation is 0.732 and the mean is 3.82. The majority of the participants agreed on the 9th question, "if People throughout the firm understand how their decisions/actions affect reliability process," with 35 (48.6%) agreeing. Whereas 21(29.2%) of the respondents strongly agree, 11(15.3%) of them are neutral and 5(6.9%) of the participants answer was disagree.



## 4.4 SC Responsiveness

Description	1	2	3	4	5	Mean	S.D
Our company has developed customer Relationship management (CRM) process team	3(4.17)	4(5.56)	13(18.06)	37(51.39)	15(20.83)	3.79	0.978
Our company utilizes cross-functional input within the CRM process	2(2.78)	3(4.17)	29(40.28)	26(36.11)	12(16.67)	3.59	0.914
Our firm insures our CRM process is aligned with our corporate strategy	0(0)	2(2.78)	23(31.95)	27(37.5)	20(27.78)	3.90	0.842
Our company develops metrics that are related to the customer's impact on our firm's profitability	1(1.39)	4(5.56)	14(19.44)	40(55.56)	13(18.06)	3.83	0.839
Our company develops metrics that are related to our firm's impact on the customer's profitability	0(0.0)	3(4.2)	20(27.8)	33(45.8)	16(22.2)	3.86	0.81
Our firm's CRM metrics are tied to our firm's financial performance	1(1.39)	1(1.39)	18(25.00)	34(47.22)	18(25.00)	3.93	0.828
Our firm measures customers' profitability over time	2(2.78)	5(6.94)	25(34.72)	32(44.44)	8(11.11)	3.54	0.887

We frequently interact with customers to set reliability, responsiveness, and other standards for us	1(1.39)	2(2.78)	18(25.00)	33(45.83)	18(25.00)	3.90	0.858
We frequently measure and evaluate customers' satisfaction	2(2.78)	3(4.17)	23(31.95)	34(47.22)	10(13.89)	3.65	0.875
We periodically evaluate the importance of our relationship with our customers	2(2.78)	3(4.17)	25(34.72)	30(41.67)	12(16.67)	3.65	0.906
<b>Overall</b>						<b>3.77</b>	<b>0.62</b>

The responsiveness metric was used to see how far a firm had built a business process that outlined how relationships with customers would be built and managed. A total of ten items were used to assess this measure. The level to which an organization built its CRM process was examined using a 5-point Likert-type response scale (1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree). This measure had a Cronbach's alpha of 0.754, with an overall mean of 3.77 and a standard deviation of 0.62. This shows that the majority of respondents agreed on CRM elements with a common understanding.

Responses to customer relationship management questions are summarized in table 4.4 as follows: Regarding the first question, "whether the organization has built a customer Relationship management (CRM) process team," 37 (51.39 percent) of the respondents, or the majority, agreed, 15 (20.83 percent) of the respondents strongly agreed, and 13 (18.06 percent) of the respondents were neutral. While 4 (5.56%) of the individuals disagree, the remaining 3 (4.17%) strongly disagree. The standard deviation is 0.978 and the mean is 3.79. In response to the second question, "whether the

organization uses cross functional input within the CRM process," the majority of respondents (29.28 percent) said they were indifferent, 26.11 percent said they agree, and 12 (16.67 percent) said they strongly agree. Three percent (4.17 percent) disagree, and two percent (2.78 percent) strongly disagree. The standard deviation is 0.914 and the mean is 3.59.

For the third question, "whether the company ensures our CRM process is aligned with our business strategy," the majority of respondents (27.75%) agreed, followed by 23.95 percent who were neutral, and 20.78 percent who strongly agreed. However, 2 (2.78 percent) of those polled disagree. The standard deviation is 0.842 and the mean is 3.90. The majority of respondents agreed on the fourth question, "if the company creates measurements connected to the customer's impact on the firm's profitability," with 40 (55.56 percent) agreeing, 14 (19.44 percent) neutral, and 13 (18.06 percent) strongly agreeing. Whereas 4(5.56%) of respondents disagree with this question, and 1(1.39%) of respondents disagree with this question.

The standard deviation is 0.839 and the mean is 3.83. For the fifth item, "whether the firm produces measures that are relevant to the firm's impact on the customer's profitability," 33(45.8%) of the respondents agreed, 20(27.8%) of the respondents were neutral, and 16(22.2%) of the respondents strongly agreed. In contrast, 3 (4.17%) of them said they strongly disagree, while the remaining 1 (1.39%) said they definitely agree. The standard deviation is 0.81 and the mean is 3.86.

Whereas 5 (6.94 percent) of respondents disagreed, and 2 (2.78 percent) said they strongly disagreed. The standard deviation is 0.887 and the mean is 3.54. In response to the eighth question, "if the company routinely interacts with consumers to set reliability, responsiveness, and other criteria for itself," 33 (45.83 percent) of the participants agreed, 18 (25 percent) were neutral, and 18 (25 percent) strongly agreed. Two percent (2.78 percent) disagreed, while one percent (1.39 percent) said they strongly disagreed. The standard deviation is 0.858 and the mean is 3.9.

For the ninth statement, "the company often measures and evaluates customer satisfaction," the majority of the participants, 34(47.22), agreed, 23(31.95%) were

neutral, and 10(13.89%) strongly disagreed. While 3 (4.17 percent) of respondents disagreed, and 2 (2.78 percent) said they strongly disagreed. The standard deviation is 0.875 and the mean is 3.65. For the tenth item, "the company evaluates the value of the firm's relationship with its customers on a regular basis," 30 (41.67 percent) of the respondents agreed, 25 (34.72 percent) of the respondents were neutral, and 12 (16.67 percent) of the respondents strongly agreed. While 3 (4.17% ) disagreed and 2 (2.78% ) strongly disagreed,

#### 4.5 SC Information sharing

Description	1	2	3	4	5	Mean	S. D
We inform trading partners in advance of changing needs	0(0)	4(5.56)	8(11.11)	36(50)	24(33.33)	4.11	0.81
Our trading partners keep us fully informed about issues that affect our business	0(0)	7(9.72)	16(22.22)	29(40.28)	20(27.78)	3.86	0.94
Our trading partner share business knowledge of core business processes with us	3(4.2)	6(8.3)	20(27.8)	30(41.7)	13(18.1)	3.61	1.01
We and our trading partners exchange information that helps establishment of	0(0)	3(4.17)	16(22.22)	31(43.06)	22(30.56)	4.00	0.84

business planning			)	)			
We and our trading partners keep each other informed about event or changes that may affect the other partners	1(1.39)	2(2.78)	20(27.78)	32(44.44)	17(23.61)	3.86	0.86
<b>Over all</b>						3.89	0.73

The amount to which critical and private information is transmitted to a supply chain partner is referred to as LIS. Five items were used to assess this measure. To measure the extent to which critical and proprietary information is provided to one's supply chain partners, these 5 statements were answered on a 5-point Likert-type response scale (1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree). This metric has a Cronbach's alpha of 0.736, with an overall mean of 3.89 and a standard deviation of 0.73. This shows that the majority of respondents agreed on LIS items with a common interpretation.

Responses to questions about the level of information exchange are summarized in table 4.5: For the first question, "whether the company informs trading partners in advance of changing needs," the majority of respondents, 36 (50 percent), agreed, 24 (33.33 percent) strongly agreed, and 8 (11.11 percent) said they were neutral.

While 4 (5.56%) of the respondents disagreed with this statement. The standard deviation is 0.81 and the mean is 4.11. "Whether the company's trading partners maintain the company fully operational," is the second question. the majority of those who responded 29 respondents (40.28 percent) agreed with the question, 20 respondents (27.78 percent) strongly agreed with the question, 16 respondents (22.22 percent) were neutral, and 7 respondents (9.72 percent) disagreed with the question. The standard deviation is 0.94 and the mean is 3.86. For the third question, "does the company's trade partner share business knowledge of core business operations with

the company?”, the majority of the respondents agreed, with 30 (41.7%) agreeing, 20 (27.2%) neutral, and 13 (18.1%) strongly agreeing. Whereas 6 (8.3%) of respondents disagreed, and the remaining 3 (4.2%) severely disagreed. The standard deviation is 1.01 and the mean is 3.61.

#### 4.6 SC Cost management

Description	1	2	3	4	5	Mean	S.D
We are able to offer prices as low or lower than our competitor	1(1.39)	1(1.39)	17(23.61)	34(47.22)	19(26.39)	3.96	0.83
Our capacity utilization is very good	0(0)	2(2.78)	7(9.72)	41(56.94)	22(30.56)	4.15	0.71
Our Inventory turnover is high	0(0)	1(1.39)	10(13.89)	37(51.39)	24(33.33)	4.17	0.71
We run operation with less Production cost	0(0)	2(2.78)	12(16.6)	35(48.6)	23(31.9)	4.1	0.7

		)	7)	1)	4)		7
<b>Overall</b>						4.09	0.75

The majority of respondents agreed on the fourth question, "if the company and its trading partners exchange information that aids in the formulation of business planning," with 31(43.06 percent) strongly agreeing, 22(30.56 percent) strongly disagreeing, and 16(22.22 percent) indifferent. While three respondents (4.17 percent) disagreed. The standard deviation is 0.84 and the mean is 4.00. "Whether the company and its trading partners keep each other informed about events or changes that may affect the other partners," is the fifth question. The majority of respondents agreed, with 32 (44.44 percent) agreeing, 20 (27.78 percent) impartial, and 17 (23.61 percent) strongly agreeing. While 2 (2.78%) of respondents disagree, the remaining 1 (1.39%) strongly disagree.

Four items were used to assess this measure. These 4 questions were answered on a 5-point Likert-type response scale (1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree) to determine price offer lower than the competitor, capacity utilization, inventory turn over, and operation with less Production cost the company's total cost is. This measure's Cronbach's alpha is 0.935, with an overall mean of 4.09 and a standard deviation of 0.75. This shows that the majority of respondents agreed on cost items with a common understanding.

According to table 4.6, responses to questions about the level of SCM cost are as follows: For the first item, "price offer lower than the competitor," the majority of the respondents 34 (47.22 percent) agreed, 19 (26.39 percent) strongly agreed, and 17 (23.61 percent) were undecided. While 1(1.39%) of respondents disagreed, the remaining 1(1.39%) strongly disagreed. The mean is 3.96 and standard deviation is 0.83. For the second question, "capacity utilization of the company," the majority of respondents, 41(56.94%), agreed, 22(30.56%) strongly agreed, and 7(9.72%) were neutral. While 2 (2.78

percent) of the respondents said they disagreed. The standard deviation is 0.71, and the mean is 4.15.

For the third question, “inventory turnover of the company,” the majority of respondents, 37 (51.39 percent), agreed, 24 (33.33 percent) strongly agreed, and 10 (13.89 percent) said they were neutral. While one in every four responders (1.39 percent) firmly disagreed. The standard deviation is 0.71 and the mean is 4.17. For the final question, “operation with less Production cost,” 35 (48.61 percent) of the respondents agreed, accounting for the majority of the responses, 23 (31.94 percent) of the respondents strongly agreed, and 12 (16.67 percent) of the respondents were neutral. However, 2 (2.78 percent) of those polled disagreed. The standard deviation is 0.77 and the mean is 4.1.

### 4.7 Organizational Performance

						Mean	S.D
Growth of sales is significantly increasing	0(0)	0(0)	10(13.89)	36(50)	26(36.11)	4.22	0.676
Our profit margin on sales is significantly increasing	0(0)	1(1.39)	18(25)	37(51.39)	16(22.22)	3.94	0.729
Growth of return on investment is	0(0)	0(0)	21(29)	33(45.8)	18(25)	3.96	0.739



significantly increasing			17)	3)			
Our market share is significantly increasing	0(0)	0(0)	10(13.89)	36(50)	26(36.11)	4.22	0.675
Our customers satisfaction is significantly increasing	0(0)	3(4.17)	23(31.94)	30(41.67)	16(22.22)	3.82	0.827
Overall competitive position	3(4.17)	7(9.72)	24(33.33)	25(34.72)	13(18.06)	3.53	1.034
<b>Overall</b>						<b>3.94</b>	<b>0.56</b>

OP is used to assess “how successfully a company fulfills both its market-oriented and financial objectives” (Li et al., 2004). Seven items were used to assess this measure. These 7 elements were rated on a 5-point Likert scale (1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree) to see if the organization's performance (quantitative and qualitative) has improved. This measure has a Cronbach's alpha of 0.833, with an overall mean of 3.94 and a standard deviation of 0.56. This shows that the vast majority of responses agreed with the OP's points.

For the first question, “whether sales growth is significantly increasing,” the majority of respondents, 36 (50 percent), agreed, 26 (36.11 percent) strongly agreed, and the remaining 10 (13.89 percent) said they were neutral. The standard deviation is 0.676 and the mean is 4.22. For the second point, The majority of respondents said yes to the question of whether the company's profit margin on sales is significantly expanding. 37.9% agreed, 18.5% disagreed, and 16.2% strongly agreed. However, 1 (1.39%) of the respondents disagreed. The standard deviation is 0.729 and the mean is 3.94. For the third point,

Whether the rise of return on investment is significantly increasing," the majority of respondents, 33 (45.83 percent), agreed, 21 (29.17 percent) said they were neutral, and 18 (25 percent) said they strongly agreed. The standard deviation is 0.739 and the mean is 3.96. The majority of respondents, 36 (50 percent), agreed, 26 (36.11 percent) strongly agreed, and the remaining 10 (13.89 percent) were neutral to the fourth item, "if the company's market share is significantly expanding." . The mean is 4.22 and standard deviation is 0.675

The majority of respondents said yes to the fifth question, "if the company's customer satisfaction is greatly improving." 30 (41.67%) of those polled agreed, 23 (31.94%) were impartial, and 16 (22.22%) strongly agreed. While 3 (4.17 percent) of those polled said they disagreed with the question. The standard deviation is 0.827 and the mean is 3.82. The majority of participants agreed on the sixth item, "if the company's supplier satisfaction is greatly growing," with 38 (52.78 percent) agreeing, 19 (26.39 percent) neutral, and 14 (19.44 percent) strongly agreeing. While one-third of the respondents (1.39 percent) said they disagree. The standard deviation is 0.82 and the mean is 3.82. The majority of respondents agreed on the seventh item, "if the company's overall performance is good ," with 25 (34.72 percent) agreeing, 24 (33.33 percent) neutral, and 13 (18.06 percent) strongly agreeing. Whereas 7(9.72 percent) of the respondents disagree, and the remaining 3(4.17 percent) strongly disagree.

### 4.8 Correlation Analysis

Table 4.8: Pearson correlation Test

	reliability	responsive ness	Level of Informatio n Sharing	cost
Organizational Performance	.101	.253*	.105	.416**

Sig(2-tailed)	0.397	0.032	0.382	0.000
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\*\* . Correlation is significant at the 0.01 level (2-tailed).

\*. Correlation is significant at the 0.05 level (2-tailed). Source: Owen Survey, 2017

The Pearson correlation coefficient was used to investigate the relationship between the independent variables, reliability, responsiveness, Level of Information Sharing, and cost, and the dependent variable, Organizational Performance, as shown in table 4.8. Two of the independent variables (responsiveness and cost) were favorably and strongly linked with the dependent variable, according to the results of correlation analysis in table 4.9, although the other two variables (reliability and level of information sharing) has no significant correlation with the dependent variable. Which means at 99 percent confidence level ( $p < 0.01$ ), the highest correlation is signified by Quality of Information Sharing ( $r = 0.416$ ) followed by Customer Relationship Management. It is correlated with the dependent variable; organizational performance at 95 percent confidence interval ( $P < 0.05$ ) and ( $r = 0.253$ )

Organizational Performance is favorably and strongly connected with responsiveness and cost Management, according to the Pearson correlation test given in table 4.9. This indicates that as the responsiveness improves, so will organizational performances. Additionally, cost management improves, so will organizational performance.

## 4.9 Discussion of the Results

The purpose of this study was to see if SCM practice (reliability, responsiveness, Level of information sharing and cost) affected organizational performance. The corporations prepared a survey instrument tool (questionnaire) and distributed it to their staff. As a

result of the descriptive study, all of the organizations are applying supply chain management methods (reliability, responsiveness, information sharing level, and cost management).

When calculated using Pearson correlation coefficients, the inferential analysis results of this study show that responsiveness and cost management have significant correlations with organizational performance, while the other two (reliability and level of information sharing) have no significant correlation with organizational performance. This conclusion is confirmed by five hypotheses (Ronald M, 2012). (The first premise is that SC responsiveness will be linked to a company's competitive advantage.) The second hypothesis is that cost management methods will be linked to organizational performance in a beneficial way. The third premise is that industrial flow management strategies will be linked to a company's competitive advantage.

The regression analysis results of this study support the hypotheses that SC responsiveness and SC cost management a positive and significant influence on organizational performance, while rejecting the other two hypotheses (sc reliability and level of information sharing).

## 5 CHAPTER FIVE

### Summary, Conclusions, Recommendations and Suggestion

#### 5.1 Summary of the Major Findings

- The majority of respondents are male, according to the demographic features of the business' responses (76.4 percent). In addition, the majority of the responders are between the ages of 25 and 35. (63.9). All of the responders are highly educated, with the majority holding a bachelor's or master's degree. Furthermore, the study's findings suggest that the majority of the respondents have worked in the firms for less than 5 years, with most of them in marketing departments.
- According to the results of the correlation study, there was a substantial positive link between the two variables (SC Responsiveness and SC cost management) and organizational performance ( $p < 0.01$ ) and ( $p < 0.05$ ), respectively. The other two variables (reliability and level of information sharing) have no significant correlation with organizational performance

#### 5.2 Conclusion

More research is needed to reach a firm conclusion about the impact of supply chain management strategies on organizational performance while reducing the study's shortcomings. The findings of this study might help businesses focus on the quality responsiveness and cost management in order to improve their overall performance. Since the major findings indicates that the cost management and SC responsiveness has positive and significant influence on organizational performance.

This recommends that corporate organizations should pay close attention to the SC responsiveness and SC cost management in order to take a proactive role in supply chain management in order to get a competitive advantage and achieve their objectives. Validity and reliability were verified using Cronbach's alpha values greater than 0.7,

which is considered good. This study's alpha values are well below 0.7. As a result, the surveys exhibited a high level of dependability

In order to achieve advancement in marketing and financial performance in the long run through enhancing organizational performance, it is better for the organization to give due emphasis on SCM practices. In order to foster organizational performance, it is also better for the organization to give due emphasis to Supply chain performance measures. As many studies indicated, the concept of SCM is new for the country. Firms are always facing many obstacles in importing their inputs to their factory, producing them and availing the product to the final market. Hence, all parties from government to firms should commit their responsibility in creating proper infrastructure that improves the country's poor supply chain performance.

### **5.3 Recommendation**

- Businesses should improve the timeliness, correctness, completeness, adequacy, and dependability of the data they share.
- Businesses should improve sc responsiveness by client relationship management capabilities.
- More research should be done with a larger number of brewery companies to obtain more precise results.
- To acquire a stronger result, further research should be done with a larger number of independent variables.
- Because this study had a small sample size, future research should try to sample from a bigger group of companies in order to enhance sample size and variety. Future study will be able to incorporate a greater variety of statistical analytic approaches, increase the instrument's reliability and validity, and create more meaningful findings with a bigger and more diversified sample.
- Future research should collect data on each of the core SCM practices to see if there is a link between them and organizational performance. This will give you valuable information into which practices appear to be the most important for generating and growing organizational value, as well as whether this varies

across company.

### **5.3 Suggestion for Further Study**

The present study used only Meta Abo brewery s.c offices Addis Ababa area future studies should consider expanding their scope to include the whole company in Ethiopia. Furthermore the evaluation of implementation of SCM is limited to internal processes and downstream supply chain distribution network therefore further studies should be conducted on external factors

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## **Employees' Perception on the Effects of Supply Chain Management Strategy on Firm Performance (The Case of Meta Abo brewery S.C. Addis Ababa)**

Gender

Male..... Female.....

Education

Diploma.....First Degree ..... Second Degree and above .....

2. Years stayed at the organization: Under 2 year..... 2–5 years ..... 6–10 years..... over 10 years.....

3, In your current job, what functions best describe your responsibilities?

Check all that apply Finance..... Human Resource.....  
 Management..... Logistics/Transportation/Distribution.....  
 Information system..... Supply/Purchasing/Procurement.....  
 Sales/Marketing..... Regulatory..... Others,  
 please specify.....

With regard to your organization’s SC management process, please choose the appropriate number and put (x) to indicate the extent to which you agree or disagree with each statement.

1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly agree

<b>reliability</b>	1	2	3	4	5
When it comes to selecting suppliers, we prioritize quality					
We solve problems on a regular basis in collaboration with our suppliers					
We have assisted our suppliers in improving the quality of their products					

Our main suppliers are involved in our planning and goal-setting processes.					
For supplier relationship management, our organization has set specific performance goals (SRM)					
Our organization measures the contribution of our suppliers to our profitability on a regular basis.					
Our vendors are aware of how we work. Their judgments and actions have an impact on the SRM process.					
The requirements for the SRM process are developed by a cross-functional team.					
Everyone in our firm is aware of how their decisions and actions affect SRM.					

<b>Responsiveness</b>	1	2	3	4	5
Our company has developed customer Relationship management (CRM) process team					
Our company utilizes cross- functional input within the CRM process					
Our firm insures our CRM process is aligned with our corporate strategy					
Our company develops metrics that are					

related to the customer's impact on our firm's profitability					
Our company develops metrics that are related to our firm's impact on the customer's profitability					
Our firm's CRM metrics are tied to our firm's financial performance					
Our firm measures customers' profitability over time					
We frequently interact with customers to set reliability, responsiveness, and other standards for us					
We frequently measure and evaluate customers' satisfaction					
We periodically evaluate the importance of our relationship with our customers					

<b>Information sharing</b>	1	2	3	4	5
We inform trading partners in advance of changing needs					
Our trading partners keep us fully informed about issues that affect our business					
Our trading partner share business knowledge of core business processes with us					
We and our trading partners exchange information that helps establishment of business planning					

We and our trading partners keep each other informed about event or changes that may affect the other partners					
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<b>Cost</b>	1	2	3	4	5
We are able to offer prices as low or lower than our competitor					
Our capacity utilization is very good					
Our Inventory turnover is high					
We run operation with less Production cost					

<b>Organization performance</b>					
Growth of sales is significantly increasing					
Our profit margin on sales is significantly increasing					
Growth of return on investment is significantly increasing					
Our market share is significantly increasing					
Our customers satisfaction is significantly increasing					

Overall competitive position					
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