

**SUPPLY CHAIN MANAGEMENT AND ORGANIZATIONAL
PERFORMANCE IN THE SUGAR INDUSTRY IN KENYA**

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DECLARATION

I declare that this is my original work and has not been presented for a degree in any other university.

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This project has been submitted for examination with my approval as the University

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The long and challenging journey that has led to the successful completion of this MBA program would not have been without the incredible support and encouragement of many people I interacted with.

I am grateful to God for leading me through the MBA program. All glory and honor is His.

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DEDICATION

I dedicate this project to my loving, caring and supportive husband Kenn Ontiri and my adorable daughter Angel Moraa for their unending love and support, my dad and siblings for their prayers, encouragement and support.

ABSTRACT

Businesses today operate in a market-driven, customer-oriented era and to survive in such a competitive environment, they have to be flexible, adaptable and above all provide superior service. Supply chain management, customer driven corporate policy, and other elements of supply chain management are frequently cited as strategic options to achieve competitive success. This study presents details of a survey carried to determine whether particular supply chain practices and customer relations practices can impact corporate performance. The objective of the study was to establish the effect of supply chain management practices on organizational performance of Sugar firms in Kenya. The research design adopted was descriptive research design. Data was collected using a questionnaire which consisted of both open and closed ended questions. The data collected was analyzed using descriptive statistics and also an inferential analysis involving a regression was performed. The findings of the study were that supply chain management practices had a positive effect on various parameters of performance. It was found that effective implementation of supply chain management practices led to decrease in the operational cost of the firm, reduction on the response time for product design change, increased accuracy of order processing for customers which leads to improved market share and customer satisfaction. The study recommends that the management of the sugar firms consider implementing fully various supply chain practices due to its positive effects and also for the government to provide incentives on adoption of certain supply chain practices such as green supply chain due to its effect on the environmental sustainability.

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CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

1.1.1 Supply Chain Management Practices

Organizations adopt numerous business improvement methodologies to improve their performance. As competition intensifies, so do the challenges associated with getting a product or service to the right place at the right time at the lowest delivered total cost. Manufacturing organizations have begun to realize the potential benefits and importance of strategic and cooperative buyer-supplier relationships. They have started to involve strategic suppliers in resource management decisions (Morgan and Monczka, 2006). Instead of relying on tools such as acceptance sampling to establish the quality of incoming materials and component parts, manufacturers purchase from a more limited number of qualified or certified suppliers and embrace the concept of supply base management, hoping to reduce costs by cutting inventory and improving efficiency throughout the supply chain (Watts and Hahn, 2003). In addition, organizations have come to place more emphasis on customer driven corporate policies that seek to simultaneously pursue objectives of customer satisfaction, quality and productivity improvement, and cost reduction.

SCM practices have received numerous other definitions; Koh et al., (2007) defined SCM practice as the set of activities undertaken by an organization to promote effective management of its supply chain; as the approaches applied in integration, managing and

coordination of supply, demand and relationships in order to satisfy clients in an effective way (Wong et al., 2005); as tangible activities/technologies that have a relevant role in the collaboration of a focal firm with its suppliers and/or clients (Vaart and Donk, 2008); and as the approach to involve suppliers in decision making, encouraging information sharing and looking for new ways to integrate upstream activities. As a consequence, it involves developing customer contacts by customer feedback to integrate the downstream activities and delivering orders directly to customers (Chow et al., 2008). The concepts and practices of SCM have been touted as improving the performance of organizations who participate in them.

The supply chain management in general aims at improving value delivery to customers; relying on just-in-time system; eliminating waste; getting the involvement of all stakeholders in the value creation process as well as working closely with suppliers. According to Ireland and Webb (2007), SCM continues to be adopted by organizations as the medium for creating and sustaining a competitive advantage and points out that such a displacement is understandable considering the potential benefits of successful supply chain management. These benefits attributed to supply chain management include inventory reduction, improved delivery service, and shorter product development cycles. On their part, Slack et al., (1995) observed that the objectives of supply chain management include focusing in satisfying end customers, to formulate and implement strategies based on capturing and retaining end-customer business and also to manage the whole chain effectively and efficiently. SCM is one of the most effective ways for firms to improve their performance (Ou et al., 2010). With the purpose of managing the supply

chain actions for realizing improvement in enterprise performance, it is necessary to improve the planning and management of activities such as materials planning, inventory management, capacity planning, and logistics (Chandra and Kumar, 2000) with suppliers and clients.

The simultaneous integration of customer requirements, internal processes, and upstream supplier performance is commonly referred to as supply chain management (SCM). Supply chain management (SCM) is an integrated approach beginning with planning and control of materials, logistics, services, and information stream from suppliers to manufacturers or service providers to the end client; it represents a most important change in business management practices (Fantazy et al., 2010). SCM is one of the most effective ways for firms to improve their performance (Ou et al., 2010). With the purpose of managing the supply chain actions for realizing improvement in enterprise performance, it is necessary to improve the planning and management of activities such as materials planning, inventory management, capacity planning, and logistics with suppliers and clients.

Supply chain practices cannot on their own improve efficiencies individually, since the efficiency can be achieved through the interaction of various supply chain practices. Dawe (2004) point that, for effective SCM, a comprehensive effort for improvement in all of supply chain functions within a firm should be made, and, first of all, the focus of supply chain practices should shift from functional and independent to general and integrative. This implies that the performance of each supply chain practice should be

evaluated depending on how the practice has a significant effect on the efficient integration of entire supply chain processes, and thus, the successful achievement of SC integration can be possible by the systematic utilization of various supply chain practices. Bowersox (2009) also have the same perspective with the above argument.

1.1.2 Organizational Performance

Organizational performance is the final achievement of an organization and contains; existence of certain targets to be achieved, has a period of time in achieving the targets and the realization of efficiency and effectiveness (Gibson *et al.*, 2010). On the other hand, organizational performance refers to ability of an enterprise to achieve such objectives as high profit, quality product, large market share, good financial results, and survival at pre-determined time using relevant strategy for action (Koontz and Donnell, 2003). Organizational performance can also be used to view how an enterprise is doing in terms of level of profit, market share and product quality in relation to other enterprises in the same industry. Consequently, it is a reflection of productivity of members of an enterprise measured in terms of revenue, profit, growth, development and expansion of the organization.

All types of organizations, whether small or big, public or private, for-profit or non-profit, struggle for survival. In order to survive, they need to be successful (effective and efficient). To be assured of their success, organizations must perform well. Ultimately, performance lies at the heart of any managerial process and organizational construct and is therefore considered as a critical concept in the strategic management field. Organizational performance includes multiple activities that help in establishing the goals

of the organization, and monitor the progress towards the target (Johnson *et al.*, 2006). It is used to make adjustments to accomplish goals more efficiently and effectively. Organizational performance is what business executives and owners are usually frustrated about. This is so, because even though the employees of the company are hard-working and are busy doing their tasks, their companies are unable to achieve the planned results. Results are achieved more due to unexpected events and good fortune rather than the efforts made by the employees. However, for any business to be successful, functions must be defined and accomplished. It is important for an organization to develop strategies that are designed around the skills that would enhance the performance of the organization.

1.1.3 Sugar Industry in Kenya

The sugar industry in Kenya is a major employer and contributor to the national economy. Sugarcane is one of the most important crops in the economy alongside tea, coffee, horticultural products and maize. By far, the largest contribution of the sugarcane industry is its silent contribution to the fabric of communities and rural economies in the sugar belts (Kenyasugar.co.ke). The Kenya Sugar Board (KSB) is the regulatory body of the Sugar Industry, established on 1st April, 2002, under the Sugar Act 2001, succeeding the defunct Kenya Sugar Authority. The mandate of the Kenya Sugar Board as stipulated in Section 4 (1) and 4 (2) of the Sugar Act 2001 is to regulate, develop and promote the Sugar Industry; Co-ordinate the activities of individuals and organizations within the industry and to facilitate equitable access to the benefits and resources of the industry by all interested parties.

There are several sugar processing factories in Kenya and are divided into parastatals and private owned factories. Parastatal run factories include; Nzoia, Sony, Muhoroni and Chemelil sugar companies while the private sugar companies include Kibos and Allied, Butali, SOIN, Mumias, TransMara and West Kenya sugar factories. Currently, the industry directly supports approximately 250,000 small-scale farmers who supply over 92 percent of the cane milled by the sugar companies. An estimated six million Kenyans derive their livelihoods directly or indirectly from the industry. In 2008, the industry employed about 500,000 people directly or indirectly in the sugar cane business chain from production to consumption. The industry is regulated by the Kenya Sugar Board (KSB).

The sugar industry in Kenyan is protected by COMESA safeguard measures. The safeguards were first granted in 2004 and were to expire in February 2008. Despite the remarkable progress made during the safeguard period, the industry was not ready for an open trade regime in sugar. Kenya therefore sought and was granted an additional four years of protection from March, 2008 to February, 2012 with a declining tariff and an increasing quota. This safeguard measures were further granted to the end of 2013 and comes into force at the beginning of 2014. With this in mind, the issue of strategic positioning of the sugar sectors has become paramount and all the sugar factories are preparing for stiff competition from new entrants. The sugar production in the COMESA region is at a relatively lower cost and this will be a major challenge compared to the high cost of production in Kenya. Most affected are the parastatal companies, as their costs of production are extremely high. Many companies are now diversifying into other fields like ethanol production and water bottling (Kenyasugar.co.ke).

1.2 Statement of the Problem

In the face of a competitive global market, organizations have downsized, focused on core competencies, and attempted to achieve competitive advantage by more effectively managing purchasing activities and relationships with suppliers. The supply base management refers to how firms utilize their supply processes, technologies, and capabilities to enhance competitive advantage (Farley, 2007), and how the manufacturing, logistics, materials, distribution and transportation functions are coordinated within organizations (Lee and Billington, 2002). Many firms have reduced their supply base so they can more effectively manage relationships with strategic suppliers. Buying firms are developing cooperative, mutually beneficial relationships with suppliers and viewing suppliers as virtual extensions of their firm.

Recent evidence indicates that leading edge companies are shifting their quality emphasis from inspection to designing quality into products, accompanying this with process control and process improvement efforts (Greene, 1993). These initiatives, particularly when implemented concurrently with managing the supply base, are cited as strategic practices to achieve competitive advantage. Other practices associated with quality improvement mirror those embodied in the evaluation criteria for awards such as the Baldrige and Deming awards (Black and Porter, 2006). These include strategic quality planning and senior management leadership.

There have been a number of studies of SCM implementations among manufacturing firms (Sandberg, 2007) and large retailer organizations (Sandberg and Abrahamsson,

2010) that have established the importance of SCM. Locally, Kyengo (2012) researched and found out that the overall performance of the organization (Nation Media Group Ltd) is greatly influenced by the capacity of the firm to deliver products to the widely dispersed customers on timely basis because even a one hour late delivery will affect the sales level and this can only be remedied by having effective supply chain structures. Mwingi (2011) and Andebe (2011) undertook research and found that sharing promotional information between retailers and manufacturers is useful especially in the international market. These studies have not fully explored the impact of SCM practices on an organization's performance. This research, will therefore, establish the role of the sugar industry's supply chain management on organizational performance, and it will specifically seek to answer the following questions: to what extent have the sugar firms in Kenya employed SCM practices? What is the impact of these practices on the firms' performance?

1.3 Research Objectives

The study objectives were:

- i) To establish the extent of supply chain management practices employed by sugar firms in Kenya.
- ii) To establish the relationship between supply chain management practices and the organizational performance of sugar firms in Kenya.

1.4 Value of the Study

The study will be of value to the management of sugar firms in Kenya as they will be able to know the importance and impact of having an effective supply chain and what role it will have on their performance. The findings of this study will form part of the action plans that will help the sugar firms to gain competitive advantage over their competitors locally and also in the region.

The study will also create a monograph which could be replicated in other sectors which are facing high competition from the international players. Most importantly, this research is further aimed at offering some practical suggestions on a firm's supply chain management impact on the performance of the firm. The policy makers will obtain knowledge of the agricultural sector dynamics and the supply chain practices; they will therefore obtain guidance from this study in designing appropriate policies that will regulate the sector.

Future and present scholars may use the results of this study as a source of reference. The findings of this study can be compared with supply chain management in other sectors to draw conclusions on various ways an organization can respond to competitive forces in the environment. It will also benefit consultants who endeavor to provide assistance to successful running of organizations in developing and sustaining a competitive edge in their industry.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The chapter provides information from publications on topics related to the research problem. It examines what various scholars and authors have documented about the concept of supply chain management practices. The chapter covers concept of supply chain management practices, organizational performance and effect of supply chain management practices on organizational performance.

2.2 Supply Chain Management

The simultaneous integration of customer requirements, internal processes, and upstream supplier performance is commonly referred to as supply chain management (SCM). While SCM has become popular, there are in practice few examples of truly integrated supply chains (Handfield and Nichols, 2008). Although the literature is replete with reports of firms that developed strategic supplier-buyer partnerships, outsourced non-core competencies, and adopted strategic customer relations practices, few companies have succeeded simultaneously on all these fronts. Scott and Westbrook (1991) describe supply chain management as the chain linking each element of the manufacturing and supply process from raw materials through to the end user, encompassing several organizational boundaries. Thus, SCM encompasses the entire value chain and addresses materials and supply management from the extraction of raw materials to the end of its useful life. It aims at improving value delivery to customers; relying on just-in-time

system; eliminating waste; getting the involvement of all stakeholders in the value creation process as well as working closely with suppliers.

According to Ireland and Webb (2007), SCM continues to be adopted by organizations as the medium for creating and sustaining a competitive advantage and points out that such a displacement is understandable considering the potential benefits of successful supply chain management. These benefits attributed to SCM include inventory reduction, improved delivery service, and shorter product development cycles. On their part, Slack et al., (1995) observed that the objectives of SCM include focusing in satisfying end customers, to formulate and implement strategies based on capturing and retaining end-customer business and also to manage the whole chain effectively and efficiently.

The success of a SCM system is dependent on adopters developing specific capabilities (Chandra and Kumar, 2000). These, they observe, include the ability to develop a flexible organization, develop a trusting relationship with its suppliers, seek total supply chain coordination, enhance communication to reduce uncertainty and inventory levels, outsource non-core competencies, implement build-to-order manufacturing, reduce inventory and minimize costs. Attaining these capabilities requires employees who are flexible in their roles, have a broad set of skills, are adaptable to reorganization, able to work in boundary-spanning responsibilities and are innovative. Companies said to be effective in their SCM practice put a lot of emphasis on developing their human resources through training and retraining of their employees (Gowen and Tallon, 2002).

2.3 Supply Chain Management Practices

SCM practices are defined as the set of activities undertaken by an organization to promote effective management of its supply chain (Koh et al., 2007); such as the approaches applied in integration, managing and coordination of supply, demand and relationships in order to satisfy clients in an effective way (Wong et al., 2005); as tangible activities/technologies that have a relevant role in the collaboration of a focal firm with its suppliers and/or clients (Vaart and Donk, 2008); and as the approach to involve suppliers in decision making, encouraging information sharing and looking for new ways to integrate upstream activities. As a consequence, it involves developing customer contacts by customer feedback to integrate the downstream activities and delivering orders directly to customers (Chow et al., 2008).

2.3.1 Strategic Supplier Partnership

The choice of suppliers and how businesses are effectively integrated to obtaining proper complementary skills are important issues. Strategic sourcing consists of strategic outsourcing and supplier capability analysis. In addition, the construct strategic supplier partnership is an integral element to the second order construct of SCM (Li et al., 2006). The defining elements of strategic sourcing have been identified to be the status of supply management within the organizational hierarchy, internal coordination of supply management with other functions in a firm, active information sharing with suppliers, and comprehensive supplier development activities (Kocabasoglu and Suresh, 2006).

In the retail category management context, strategic sourcing has also been found to influence knowledge creation and sharing among suppliers and retailers (Dewsnap and Hart, 2004). Since suppliers and retailers have knowledge in different domains, the combination can create unique knowledge that can be applied to improve business knowledge. Better relationships between retailers and their suppliers also improve prospects of new product acceptance (Kaufman, 2002). Retailers take risks in placing untried products on the shelves. The risks take several forms. The retailer's reputation is at stake if the product does not perform well, and consumers may hold the retailer responsible for selling substandard products.

2.3.2 Adoption of Information Technology

The advent of the internet and electronic communication has enabled companies to be more responsive to their customers than ever before. Sanchez and Peres (2003) assert that rich experience of firms with electronic resource planning (ERP) tend to deliver higher benefits while the electronic data interchange (EDI) adopter perceive more operational benefits, more external pressures and mutual understanding, and fewer technical and organizational difficulties than non-adopters of EDI.

Information sharing practices such as vendor-managed inventory (VMI) give manufacturers more accurate information than before e.g. customer sales data. Smaros et al., (2004) used discrete – event simulation to examine how a manufacturer can combine traditional order data available from VMI customers in its production and inventory control and what impact this has on the manufacturer's operational control. They found

that even for products with stable demand, a partial improvement of demand visibility can improve production and inventory control efficiency. The value of product visibility greatly depends on the target products' replenishment schedule and the planning cycle employed by the manufacturer.

2.3.3 Information Sharing

Information sharing refers to the extent to which non-public information is communicated along the supply chain. A number of studies have examined the value of information sharing along the supply chain. For the most part, these researchers have attempted to quantify the benefits of sharing information by using simulation approaches. Sharing promotional information between retailers and manufacturers can be particularly useful. Promotional activity can create disruptions in the supply chain. A retail-level promotion may artificially increase demand for a temporary period. Without shared information on the promotion, the manufacturer may be unprepared. The retailer may not have sufficient stock to support the demand induced by the promotion.

An interesting aspect of this stream of research is the finding that the value of information sharing is particularly high when demand is auto correlated (Hamister and Suresh, 2008). Auto correlated demand has been linked to the early season signal for a seasonal product, and it has practical relevance (Fisher and Raman, 1996). Sharing information upstream early in a selling season better positions the manufacturer to support the retailer while avoiding costly stocking errors. In practice, point-of-sale (POS) technologies and sharing through technologies such as VMI are incomplete, and must be

supplemented with analysis of actual order patterns (Smaros et al., 2003). The scope of information shared is related to the nature of the business relationship.

2.3.4 Knowledge Management

Global competition and accelerating technological changes especially in information and communication and internet technologies makes competition knowledge-based thereby affecting SCM across firms (Lang, 2001). A stronger emphasis on knowledge management as part of organizational strategy may help supply managers to manage uncertainty better. It is observed that establishment of internal knowledge management systems for organizations create a greater base for tacit learning to be leveraged. On the other hand, external knowledge management brings value chain members closer together and adds value to the product through increased quality and customer perception of brand platforms.

Koh and Tan, (2006) assert that it is only knowledge management that is inadequate in many ways for managing a supply network in uncertain environment hence a new approach is needed. They linked the impact of organizational structure in knowledge transfer and utilization among the different participating functions in the perspective of systems theory. Information sharing practices such as vendor-managed inventory give manufacturers access to more accurate demand information such as customer sales data than before.

2.3.5 Reverse Logistics

Reverse logistics is defined as the effective and efficient management of the series of activities required to retrieve a product from a customer in order to either dispose of it or recover value (Defee et al., 2009). On their part Rogers and Tibben-Lembke (1999, p. 2) defined reverse supply chain as “the process of planning, implementing and controlling the efficient, cost-effective flow of raw materials, in-process inventory, finished goods and related information from the point of consumption to the point of origin for the purpose of recapturing or creating value or for proper disposal”.

Firm control has been recognized as a crucial component of SCM. Sanderlands (1994) noted that the first step (in SCM) is to introduce structure and discipline to the supply process, tightening up procedures, and taking control of all activities in the supply chain. An important way to introduce structure is to formalize logistics operations. The rapid growth in the volume of returns often outpaces the abilities of firms to successfully manage the flow of unwanted product coming back from the market. The complex procedures and steps required for any RSC to be operational make most companies shy away from undertaking the same process. Mollenkopf et al. (2007) outlined several processes involved in the RSC process that discouraged most organizations from pursuing. These processes as they enumerated include: initiate returns; determine routing; receive returns; select disposition; credit the customer; and analyzing the performance.

2.3.6 Green Supply Chain

The Green Supply Chain Management (GSCM) concept (and its many elements) has had many variations over the years and has included sustainable supply network

management; supply and demand sustainability or corporate social responsibility networks; supply chain environmental management; green purchasing and procurement, environmental purchasing, green logistics and environmental logistics (Linton et al., 2007). Using a similar premise, Vachon and Klassen (2006) put forward the concept of green supply chain practices which comprise two sets of related yet independent environmental activities, namely: environmental collaboration and environmental monitoring. On the basis of the same construct as stated by Vachon and Klassen (2006), an organization's green supply chain practices imply internalizing by integrating its environmental management activities with other organizations in the supply chain or externalizing environmental management in the supply chain by employing market-based mechanisms. The former is termed environmental collaboration while the latter is environmental monitoring.

The green supply chain practices require that manufacturers work in concert with suppliers and customers to enhance environmental sustainability. The implementation of GSCM practices is expected to result in improved environmental performance as measured by reductions in air emissions, effluent waste, solid waste, and the consumption of toxic materials. However, there is concern as to whether such environmental sustainability efforts will ultimately translate into improved market share and profitability. Ultimately, manufacturing managers are responsible for the performance of the organizations for which they work (Green et al., 2000)

2.3.7 Customer Orientation

Chong and Ooi, (2008) point out that as supply chain management engages working with external groups namely; customers and suppliers, a strategic partnership between the supply chain partners will be required. For instance, for implementing supply chain standards (such as RosettaNet Standards), strategic partnerships and supply chain members are the most important factors. Sourcing decisions are fundamental with respect to supply chain management. The choice of supplier, how businesses are effectively integrated to obtaining proper complementary skills will form an important practice for any business unit. Narasimhan and Jayaram, (2008) found that strategic sourcing initiatives improve supply chain performance and through examining the type of sourcing decisions, strategic sourcing decisions were found to be strongly related to manufacturing goal achievement in a study of 215 North American manufacturers. In addition, the construct strategic supplier partnership is an integral element to the second order construct of supply chain management (Li et al., 2006).

Since suppliers and retailers have knowledge in different domains, the combination can create unique knowledge that can be applied to improve business knowledge. Better relationships between retailers and their suppliers also improve prospects of new product acceptance (Kaufman, 2002). Retailers take risks in placing untried products on the shelves. The risks take several forms. The retailer's reputation is at stake if the product does not perform well, and consumers may hold the retailer responsible for selling substandard products. In addition, the retailer may not wish to give up limited shelf-space

for untried new products. Therefore, retailers are more likely to stock new, untested products from suppliers with whom close, long-term relationships have been established.

2.4 Organizational Performance

Organizational performance is described as the extent to which the organization is able to meet the needs of its stakeholders and its own needs for survival (Griffin, 2003). According to Swanson (2000), organizational performance is the valued productive output of a system in the form of goods or services. Organizational performance can be subdivided into three categories: financial performance (profit), internal non-financial performance (productivity) and external non-financial performance (customer satisfaction). Private sector organizations strive for good financial results whereas public organizations are aimed at non-financial results like delivering good public services to citizens. To achieve organizational performance through employees, the organization must consider them as assets and they must be treated with great attention so that the employees become productive. There are a number of indicators by which organizational performance may be judged; the balanced scorecard offers both qualitative and quantitative measures that acknowledge the expectations of different stakeholders and related assessment of performance in choice of strategy. In this way, performance is linked both to short term outputs and process management (Johnson *et al.*, 2006).

Due to the realization that people are the most valuable assets in an organization, the importance of performance management has been pushed to the fore (Bartlett and Ghoshal, 2005). The performance measurement system employed in an organization must therefore measure the performance of all assets including the human ones. The balanced

scorecard of Kaplan and Norton (1996) is a mechanism which provides a holistic measure of organizational performance. It is a set of measures that provide managers a fast but comprehensive view of the business. The Balanced Scorecard is not only a measurement system but also a management system, which enables organizations to clarify their vision and strategy and translate them into action.

Traditional methods of measuring a company's performance by financial indices alone have virtually disappeared from large organizations (Basu, 2001). Non-financial measures are at the heart of describing strategy and of developing a unique set of performance measures that clearly communicate strategy and help in its execution (Kaplan & Norton, 1992, 1996). Frigo (2002) reported the existence of a gap between strategy and performance measures, which failed to support the communication of strategy within an organization. Hudson *et al.* (2001) concluded that although there was a widespread acceptance of the value of strategic performance measurement amongst firms that they studied, none had taken steps to redesign or update their current performance measurement systems.

Profitability measures the extent to which a business generates a profit from the factors of production: labor, management and capital. Profitability is the most important measure of success of the business. A business that is not profitable cannot survive, yet a highly profitable one has the ability to reward its owners with a large return on their investment. Profitability analysis focuses on the relationship between revenues and expenses and on the level of profits relative to the size of investment in the business (Mesquita & Lara, (2003). Four useful measures of firm profitability are the rate of

return on firm assets (ROA), the rate of return on firm equity (ROE), operating profit margin and net firm income. The ROA measures the return to all firm assets and is often used as an overall index of profitability, and the higher the value, the more profitable the firm business. The ROE measures the rate of return on the owner's equity employed in the firm business. It is useful to consider the ROE in relation to ROA to determine if the firm is making a profitable return on their borrowed money (Hadlock & James, 2002).

2.5 Supply Chain Management Practices and Organizational Performance

Delaney et al, (2006) point that organizational performance can be evaluated by quality service and products, satisfying customers, market performance, service innovations, and employee relationships. On the other hand, Hoque et al, (2000) in their study of organizational performance based on balanced scorecard, stated that organizational performance can be appraised by return of investment, margin on sales, capacity utilization, customer satisfaction and product quality. In the same way, Greene et al, (2007) identified that return on investment, sales and market growth, and profit are important factors that can be measured by organizational performance. In all these performance measures, SCM practices have a positive relationship or generally affects the level of organizational performance.

A strong customer leads to improved marketing and financial performance (Green et al., 2005). As customers begin to demand that the products and services that they purchase be eco-friendly, it is important that manufacturers generate intelligence related to these

changing customer demands. A manufactured product that remains unsold in inventory, because it does not satisfy customer demand is blatantly environmentally unfriendly. A company's customer relations practices can affect its success in managing the supply base as well as its performance (Turner, 1993). A key element of successful supply base management involves downstream integration of customers as well as the management of upstream suppliers. Each entity in the supply chain is a supplier as well as a customer. When a customer driven corporate vision is implemented simultaneously with effective TQM and supply base management practices, it can produce a competitive edge in a number of different ways. These include increases in productivity, reductions in inventory and cycle time, increased customer satisfaction, market share and profits.

Chong and Ooi, (2008) assert that a good organized and executed SCM will make it possible for companies to decrease their inventories, have better customer service, diminish costs as well as aid fast inventory turns. One of the biggest advantages of SCM in the situation of short term objectives is increasing productivity and decreasing inventory and reducing lead time. Based on long term objectives, this factor has significant role in increasing company's market share and having outside integration of the SCM. (Li et al., 2006).

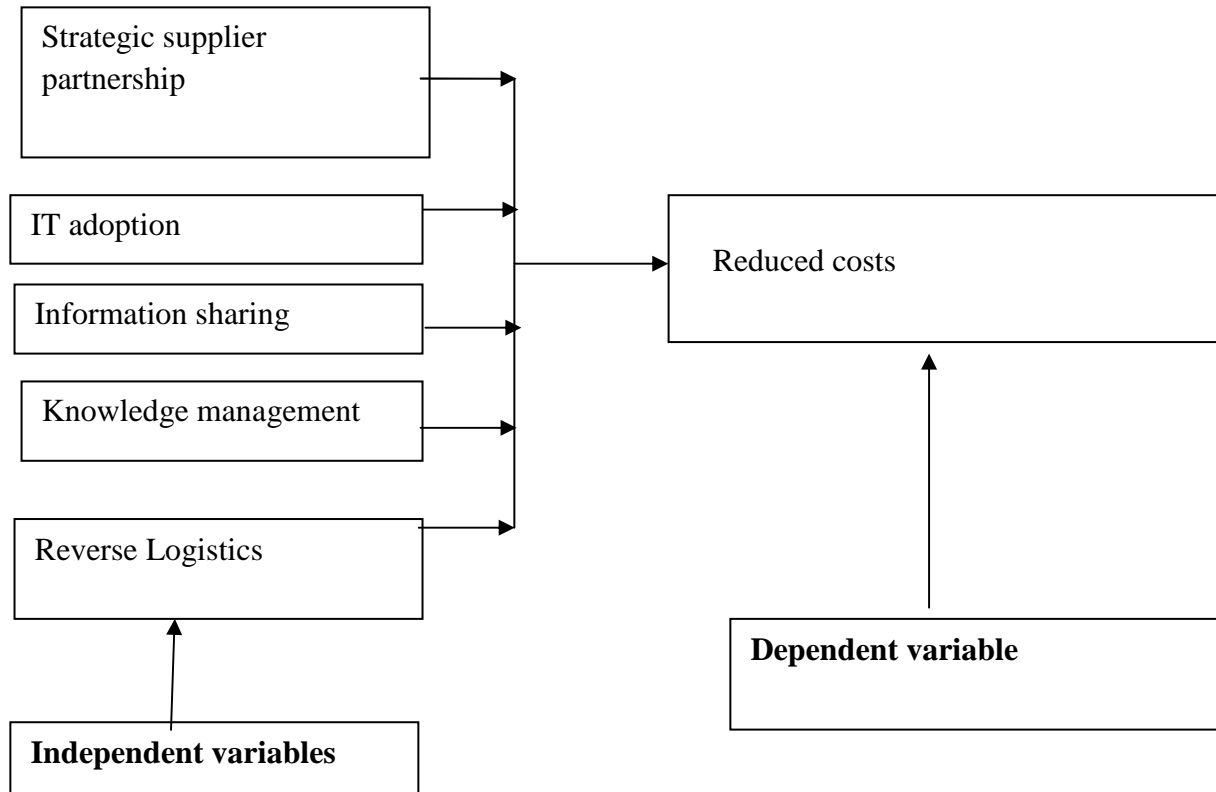
Carr and Smeltzer (1999) have documented how firms with strategic purchasing are able to foster long-term, cooperative relationships and communication, and achieve greater responsiveness to the needs of their suppliers. Although other factors, such as restructuring and governance, and transaction cost economizing are also important for understanding strategic purchasing and its linkage to supply management, they are

beyond the scope of this investigation. Strategic purchasing fosters communication, which is critical to achieving effective integration throughout the supply chain. Effective communication contributes to the development and maintenance of inter-organizational routines that have been documented to enhance a firm's capability for effectively managing strategic alliance (Zollo et al., 2002).

2.6 Conceptual Framework

A conceptual framework can be defined as a set of broad ideas and principles taken from relevant fields of enquiry and used to structure a subsequent presentation (Reichel and Ramey, 1987). The schematic diagrams below will not only guide the study but will also show the interrelationship among the key variables in the study as illustrated in Fig. 2.0.

Fig. 2.0 Schematic diagram showing variable relationships



CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methodology that was used to carry out the survey, what inform the selection of the research design, the target population, sampling method to be used, data collection instrument and how data was analyzed, interpreted and presented.

3.2 Research Design

A descriptive cross sectional research design was used to establish the effect of SCM practices in the performance of sugar firms in Kenya. A similar research design was used by Chege (2012) successfully. A descriptive research designed was adopted because the study was concerned about a univariate question in which the researcher asked questions about the size, form, distribution and existence of SCM practices on performance of sugar firms in Western Kenya. This permitted the researcher to make statistical inference on the broader population and generalize the findings to real life situations and thereby increase the external validity of the study.

3.3 Population of the study

The target population consisted of all the ten sugar manufacturing firms in Kenya (Appendix III). Given the relatively small number of the respondents a census survey was conducted. The respondents were the SCM staff including the head of procurement, production manager and the agricultural service manager.

3.4 Data Collection

Primary data was collected by means of a questionnaire (Appendix II). The questionnaire was administered through the use of email, drop and pick later method to the firms. The questionnaire had three parts; Part A covered the demographic and respondent's profile, Part B covered the extent to which supply chain management practices have been employed and finally Part C examined the impact of supply chain management practices on organizational performance.

The questionnaire allowed greater uniformity in the way questions were asked, ensuring greater compatibility in the responses. The use of close-ended questions on the questionnaire allowed for uniformity of responses to questions; while unstructured (close-ended) questions gave the respondent freedom of response which helped the researcher to gauge the feelings of the respondent; he/she could use his or her own words (Field, 2005).

3.5 Data Analysis

The data collected was analyzed using descriptive statistics (measures of central tendency and measures of variations) to achieve objective number one and regression analysis for objective number two. The dependent variable in the study was organizational performance. The independent variables for the study were strategic supplier partnership, adoption of information technology, information sharing, reverse logistics, customer orientation and knowledge management. The regression equation assumed the following form:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \alpha$$

Where Y = Organizational performance

β_0 = Constant

x_1 = Strategic Supplier Partnership

x_2 = Adoption of Information Technology

x_3 = Information Sharing

x_4 = Knowledge Management

x_5 = Reverse Logistics

x_6 = Green supply chain

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

The research objective was to establish the effect of supply chain management practices on organizational performance of sugar firms based in Western Kenya. This chapter presents the analysis, findings and discussion. The findings are presented in percentages and frequency distributions, mean and standard deviations. A total of 20 questionnaires were issued out in which two questionnaires were issued per firm. Of the 20 questionnaires issued out, only 15 were returned. This represented a response rate of 75% and this was considered satisfactory for the analysis.

4.2 Demographic and Respondents profile

The demographic information considered in this study included name of the respondent, organization and the duration that the organization had been in operation. This information was important since a firm that had been in existence for a long period of time will have had the time to institute elaborate supply chain management practices and also evaluate what effect the same supply chain practice will have had on its performance.

4.2.1 Age of the Organization

This section aimed to establish from the respondents the period in which the organization had been in operation and the results are presented in table 4.1.

Table 4.1: Age of the Organization

	Frequency	percent	Cumulative percent
Under 5 years	5	29.4%	29.4%
6 – 10 years	5	11.8%	41.2%
11 – 15 years	2	11.8%	52.9%
Over 16 years	8	47.1%	100.0%
Total	17	100.0%	

The results in Table 4.1 indicate that 47.1% of the sugar firms had been in operation for over 16 years compared to 29.4% which had operated for less than 5 years. The other firms which represent 23.6% had operated for between 6-15 years. The results indicate that majority of the respondents had been in operation for more than 16 years meaning that they will have implemented adequate supply chain practices as a performance catalyst. Since the survey was limited to those firms in the western region of Kenya and considering that it has majority of the sugar belt, it was expected that majority of the firms will have been in existence for long enough. In addition, new firms have established their presence in the region more recently due to the liberalization of the sector that Kenya has adopted in the last 15 years. Kenya is still a sugar deficiency country and coupled with the increased demand of the product and the aging technology that the older sugar firms employ, new entrants have been attracted to the region. This finding indicates that the results will be more representative because the views of new and old firms will be incorporated.

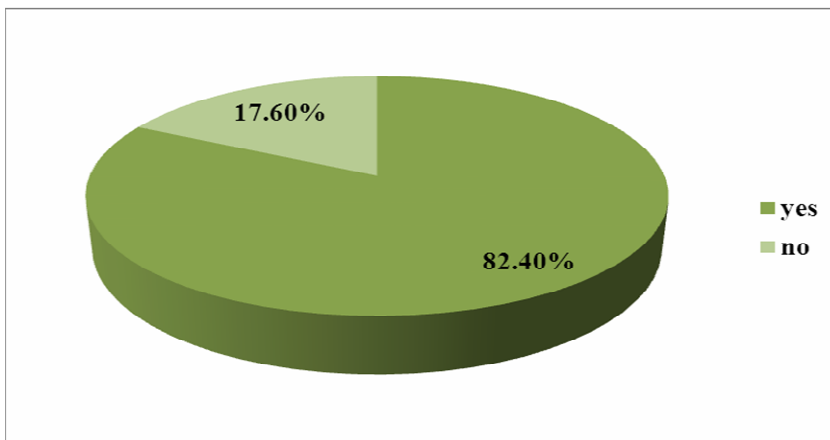
4.3 Extent of the adoption of Supply chain management

Different organizations adopt different supply chain management practices depending on the activities that they are engaged in and also which supply chain practice will yield better competitiveness to the firm. These companies set up their processes based on knowledge of existing supplier partnership, management of knowledge, reverse logistics and green supply chain. This section sought to establish whether the firms under consideration had put in place supply chain practices and also whether they appreciate the effect that the supply chain had on the performance of the firm.

4.3.1 Adoption of the supply chain management practices

On the question of whether the companies surveyed practice any form of supply chain, 82.4% of the firms answered in affirmative while 17.6% seem not to appreciate the effect of supply chain management practices on the organization's performance. The results are presented in figure 4.1 below.

Figure 4.1: Adaption of Supply Chain Management Practices



The results show that majority of the firms have adopted different forms of supply chain practices on the recognition that the same will have a positive impact on their performance.

4.3.2 Effect of Supply Chain Management Practices on Organisational Performance

The questions sought to establish from the respondents the various benefits accruing to the firm as a result of adopting various supply chain management practices in their distribution channel/s. The results are presented in table 4.3.

Table 4.2: Effect of Supply Chain Practices on Organizational Performance

	Mean	Std. Deviation
Increased Return on investment	4.1765	.95101
Market share growth	3.9412	.89935
Cost reduction	4.2941	.77174
Sales growth	4.0000	.79057
Improved liquidity level	3.8235	.80896
Reduction in response time of product design	3.7059	1.04670
Reduction in response time for product volume changes	3.7059	.91956
Increase in customer order process	4.0000	.93541
Overall Mean	3.5163	

The results presented in table 4.2 was that supply chain practices adopted by a firm had effects in all the financial performance and non financial measures adopted with cost reduction (mean, 4.2941) and increased Return on Investment (mean 4.1765) being

greatly influenced by the adoption of the supply chain practices. An increase in customer order process and delivery of the firm's products (mean 4.00) were also influenced highly by the firm's nature of supply chain practices. These results show that an effective adoption of supply chain practices will help in reduction of operating costs associated with the delivery of cane and also the distribution of the final sugar product. The sugar cane and the final product are bulky products and it is expected therefore that the management of the transportation cost component of the firms will affect the performance of the firm. In addition, the results also show that effective supply chain practices will influence the liquidity level (mean, 3.8235), reduction in response time of product design (mean, 3.7059) and reduction in response time for product volume changes (mean, 3.7059). These findings further explain the need for a firm to implement the concept of supply chain management in their operation.

4.4 Impact of Supply Chain Management Practices on Organizational Performance

The respondents were asked to indicate the effect that various supply chain practices have had on the performance of the firms. The supply chain practices considered were strategic supplier partnership, adoption of information, information sharing, knowledge management, reverse logistics and green supply chain in a five point Likert scale. The range was 'strongly disagree (1)' to 'strongly agree' (5). The scores of strongly disagree have been taken to represent a variable which had a mean score of 0 to 2.5 on the continuous likert scale; ($0 \leq S.E < 2.4$). The scores of 'moderate' have been taken to represent a variable with a mean score of 2.5 to 3.4 on the continuous likert scale: ($2.5 \leq M.E. < 3.4$) and the score of both agree and strongly agree have been taken to

represent a variable which had a mean score of 3.5 to 5.0 on a continuous likert scale; (3.5 ≤ L.E. <5.0). The results are presented in table 4.3.

Table 4.3: Effect of Supply Chain Management Practices on Performance

	Mean	Std. Deviation
Strategic Supplier Partnership		
We analyze our suppliers before contracting them and also develop unique cordial relationship with them for effective delivery of cane	4.4118	.79521
We actively involve our suppliers in new sugar cane breed and their development process	3.1765	1.42457
We include our suppliers in production and quality of sugarcane setting and at the same time continuously support them.	3.2353	1.34766
The supplier partnership has created unique knowledge on the farmers' needs and challenges that has been applied to improve business knowledge and performance	3.4706	1.32842
As a result of the supplier partnership, we have continuous improvement programs that include our suppliers processes and this has helped the firm to improve its various performance measures	3.6471	1.41161
Adoption of Information Technology		
The introduction and installation of internet-based infrastructure has enabled the firm to communicate with its suppliers more easily and react where need be faster in solving challenges arising in the transaction	4.0588	1.24853
Adoption of IT has also facilitated internet-based technology, information flow within the organization's departments and therefore improved the quality of information sharing.	4.1176	1.26897
The flexibility of product specifications and testing of raw materials has been enhanced due to the adoption of information technology and as a result reduced the overall cost of the company.	3.7059	1.31171
Reverse Logistics		
Adoption of the pre-return labels in the raw materials has hastened the process of reverse supply chain	3.5882	1.32565
Sustainable production and consumption of products has resulted	3.5294	1.06757
Self satisfaction resulting from preservation of the environment	3.5882	1.12132

The findings on the strategic supplier partnership as a supply chain management practice was that analyzing the firms' suppliers before contracting them and also developing unique cordial relationship with them for effective delivery of cane (mean 4.4118) were the major activities that result in improved organizational performance. This means that organizations should endeavor to have a liaison office where farmers' suggestions and input to the supply chain operations will be considered and if possible implemented. Their knowledge and performance came out as the major activities identified that have a greater effect on the performance of the firm. Otherwise, the process of including the firms' suppliers in production and quality of sugarcane setting (mean, 3.2353) and also involving their suppliers in new sugar cane breed and development process (mean, 3.1765) was found to have had a strong effect on the operational performance of the firms.

The adoption of information technology by a firm came out also as a strong factor that influences the performance of the firms. The introduction and installation of internet-based infrastructure in the supply chain (mean, 4.0588), adoption of IT in a firm to facilitate internet-based technology, as well as introducing flexibility in product specifications and testing of raw materials was identified as having enhanced better operations of the firms.

The reverse supply chain process also came out as a major activity undertaken by sugar firms. Adoption of the pre-return labels in the raw materials has hastened the process of reverse supply chain (mean, 3.5882) and sustainable production and consumption of products has resulted (mean 3.5294) in the firms being more environmental friendly

which has at the same time helped in conserving the environment through reduction of waste disposal and reduction of the level of law suits resulting from environmental degradation.

Table 4.4: Effect of Information Sharing, Knowledge Management and Green Supply Chain on Organizational Performance

Information Sharing	Mean	Std. Deviation
Information sharing among different sugar manufacturing firms has enhanced controllability of supply chain management and as a result reduced transaction costs between firms and their partners	3.4706	1.06757
Our suppliers share proprietary information between themselves and the firms and as a result led to improvement in raw material quality and output	3.5882	1.22774
Our suppliers keep us fully informed about the issues that affect our businesses in comparison with our competitors	3.7059	1.21268
We and our suppliers exchange information that help in establishment of business planning	3.4118	1.41681
Knowledge Management		
Sharing of knowledge between the firm and the suppliers has helped the firm to manage uncertainty since the suppliers have faith and dependence in the firm.	3.6471	1.16946
Knowledge management systems for organizations create a greater base for tacit learning to be leveraged	3.7647	1.09141
Knowledge management in SCM are lower costs, improved customer value and satisfaction in the firm to achieve competitive advantage	3.5294	1.12459
Green Supply Chain		
The attaining of ISO 14001 by the company has increased its customer loyalty	3.4118	1.27764
The organization has included GSCMP in its strategic planning process in order to reduce its operational costs	3.2353	1.34766
By employing in-bound logistics the company has been able to grow its market share through having a larger geographical coverage	3.2353	1.56243

The effect of information sharing on the performance of the sugar firms was also sought. The results of the study were that the firms' practice of keeping employees informed on the issues that affect the businesses (mean, 3.4706), sharing of the proprietary information between customers, employees and the firms (mean, 3.5882) came out as a common practice that is employed by the sugar firms. This means that firms will be advised to share selected strategies among their employees and also some major clients in order to reduce the level of resistance between the groups when the practice is adopted. The management of the firms' knowledge pool contained by their employees is yet another critical factor to consider by the firms. Adoption of knowledge management systems for organizations creates a greater base for tacit learning (mean, 3.7647), sharing of knowledge between the firms and the suppliers help the firms to manage uncertainty (mean, 3.6471) were found to reduce the cost levels of the firms and also increase customer value and satisfaction.

The sharing information between the farmers and sugar manufacturers has been found to be an important parameter in the supply chain process of a firm. Advances in information technology enable information availability which facilitates communication, coordination, collaboration and controllability among supply chain partners through information sharing. As observed by Lang (2001), supply chain management through better information linkages among business partners, will be able to highlight various deficiencies present in the supply chain which might include, long lead times, large batch sizes, high inventory levels, slow new product design and development, and long order fulfillment cycles. Therefore in conformity with the results of this research, by

identifying the deficiencies early enough in the supply chain, the organization can be able to mitigate the same before its effect can have adverse impact on the organizations performance.

A stronger emphasis on knowledge management as part of organizational strategy may help supply managers to manage uncertainty better. This finding will be in line with that of Iyer and Ye, (2000). It is observed that establishment of internal knowledge management systems for organizations create a greater base for tacit learning to be leveraged. On the other hand, external knowledge management brings value chain members closer together and adds value to the product through increased quality and customer perception of brand platforms. As companies adopt green supply chain, there is need for the same firms to set up their processes based on knowledge of existing environmental collaboration, environmental monitoring, purchasing and in-bound logistics, need of greening the production phase and also the need for greening the outbound function and reverse logistics functions. This will be a more holistic consideration in the greening process and avoids a situation where not all the green supply chain practice is undertaken by the firm. What comes out from the finding is that for a firm to realize the benefits of adopting the supply chain practices, there is need to approach the same through a holistic view and not only employing a selectively.

4.5 The Effect of Supply Chain Practices on the Firm's Performance

The effect of supply chain practices on the firm's performance was investigated from the results of the respondents using regression analysis. From Table 4.6 below, the established multiple linear regression equation was as follows:

$$Y = 46.234 + 3.007X_1 + 2.009X_2 + 1.140X_3 + 0.648X_4 + 0.913X_5 + 1.025X_6 + \alpha$$

Table 4.5: Results of General Least Square

Model		Un-standardized Coefficients		Standardized Coefficients	T
		B	Std. Error	Beta	
1	(Constant)	46.234	5.618	.936	-1.436
	X ₁ = Strategic Supplier Partnership	3.007	1.006	-.349	-1.249
	X ₂ = Adoption of Information Technology	2.009	.906	-.585	-1.566
	X ₃ = Information Sharing	1.140	.205	-.017	-.061
	X ₄ = Knowledge Management	.648	.076	.568	1.349
	X ₅ = Reverse Logistics	.913	.173	.243	1.324
	X ₆ = Green supply chain	1.025	.348	.564	1.531

Source: Researcher 2012

The intercept of the vertical axis has a value (46.234) and this means that the point where the independent variable is zero, the performance will be positive. The coefficient of all the independent variables are positive at $\alpha = 5\%$, and implies that the increase in the independent variables results in an increase in the firm's supply chain performance. From the coefficients, it can be deduced that the most critical factor which affects an organizations supply chain performance is the supplier partnership. This could be due to the increased level of competition in the western Kenya sugar belt and the increased number of sugar processors which therefore requires that a firm adopts a positive partnership with its suppliers for effective performance.

Table 4.6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F –statistic
1	.764 ^a	.5834	.439	.2296886	59.4

Source: Researcher's computation

The R^2 , also called the coefficient of determination, is the percentage of the variance in the dependent variable explained uniquely or jointly by the independent variables and is 58.4 %. This means that 58.4 % of the changes in the firms supply chain performance are explained by the changes in the independent variables in the model. The remaining 41.6% of the changes in the Y is explained by other factors not in the model. The F-statistic (59.4) is high and this means that the model is significant at the 5% significance level. The high coefficient of determination supports the position that a firm's supply chain management affects the performance of the entity from both the customers' perspective and the financial position of the firm. There is need to for a company to adopt a holistic approach where a firm identifies all the necessary supply chain practices that will affect its performance and from the same implement them. There should be the top management support to ensure that the implementation phase of the supply chain practices does not face the resource constraints and inter departmental support. The support of the management is consistent with Hamister and Suresh, (2008) position that implementation of supply chain practices requires coordination among different departments and this can run smoothly if the top management is involved in the process.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The study found out that the Sugar firms in western Kenya practice several forms of supply chain management practices in order to gain competitiveness in their operations. The level of competition in the sector has resulted to firms employing supply chain practices as a source of competitive advantage. Different firms adopt different supply chain practices depending on the activities that they are engaged in and also which supply chain practice will yield better competitiveness to the organization. These firms set up their processes based on knowledge of existing customer partnership, level of information technology adoption, information sharing, knowledge management reverse logistics and green supply chain practices. It was found that different firms employ different supply chain practices depending on which forms will give it a better advantage.

In all the firms, it was found out that supply chain management forms part of the firm's long-term strategy to gain competitive advantage over its competitors and thus the activity is seen as a unique capability that adds value to the product. The supply chain practices employed by the firms are integrated and coordinated by the top management and in consideration of the competitive nature of the industry at present it becomes imperative that all the firms devote more resources towards implementing other supply chain practices that have not be adopted. Managing the supply base has a significant impact on growth as well as the overall performance of the firm.

The firm's performance was found to arise from different forms of supply chain practices and these has resulted in reduction in the operating costs borne by the firm, increase in the customer loyalty which in most cases will led to the increase in the firm's customer base and market share. The study also found out that with the firm's adoption of various supply chain practices in its operation, the accuracy of order processing, reduction of response time for product volume changes and improved market share. Further, it was found out that adoption of these supply chain management practices has led to improved corporate image of the organization with all other stakeholders, promote longer term inter-firm relationship, increased sales, improved customer satisfaction, improved management of threats from competitors and sustainable production and consumption of products.

5.2 Conclusion

Improving product and process quality have been well established as ways by which organizations can respond to increased global competition. However, the challenges facing organizations at the present business environment go beyond improving quality. Organizations are increasingly faced with the reality that they cannot exist in isolation but are one piece of a complex chain of business activity. The results of this study support this notion and confirm that all three major components of a supply chain; suppliers, manufacturers, and customers must be effectively integrated in order to achieve financial and growth objectives. Moreover, the results indicate well defined linkages between specific practices and performance. Successful management of the supply chain is the key to the long term success of an organization. This cannot occur however if

organizations implement business practices in an arbitrary-, uncoordinated manner, or if they direct scarce financial resources to initiatives that are unlikely to yield positive outcomes.

From the findings of the study, it can also be concluded that the organizational performance does not result from the products and services an organization is offering alone but instead it is those inimitable characteristics of a firm such as policies and supply chain practices that will differentiate and give an organization the required competitiveness. The benefits accruing to the companies as a result of the adoption of supply chain practices have been found to include competitive advantage, reduction in operational cost and also increasing the customer loyalty and customer base. They should however be wary of the challenges which inhibit them from obtaining economies of scale and significantly reduces the economic value from the adoption of the green supply chain concepts.

5.3 Recommendations

The study found out that not all sugar companies have adopted supply chain management and at the same time those which practice it have not embraced it fully due to the initial cost incurred in setting up the supply chain division of the firm. It is therefore recommended that the companies should consider adopting supply chain practices fully as the potential benefits to be realized are enormous compared to the initial and operational cost of implementing the practice. The government has a role to play in ensuring successful implementation of some supply chain practices such as green supply

chain in organizations by coming up with appropriate measures that will encourage the organization to adopt the practice.

5.4 Limitations of the study

The study was conducted using a predetermined questionnaire. This hindered respondents from expressing their views freely and widely. The study involved managers working in different departments (procurement, production and agricultural service), this may have affected the results as the effect of supply chain management practices may vary in each department.

5.5 Recommendations for further research

Future research is needed to extend the findings of this study. The study has addressed the practices of organizations only downstream. In the future, a truly integrated supply chain may consist of multiple organizations in a chain working together to bring the latest technological innovations and products to customers at the lowest cost in the shortest time. There is a need to understand how future strategies will unfold given different competitive objectives. An additional question is how companies will share financial rewards.

From the regression finding, other factors not in the model that affects the performance of the sugar firms constitute 41.6%. These unexplained variables in the supply chain need to be established, and from this, there is need for a research that will introduce more independent variables especially other supply chain practices to establish how the level of association with the firm performance will be like.

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APPENDICES

Appendix I: Cover Letter

Willkister Nyangweso

P.O. Box 48320
00100,

Nairobi.

August, 2013

Dear Respondent,

RE: RESEARCH QUESTIONNAIRE

This questionnaire (attached) is designed to gather information on the effect of supply chain management practices on organizational performance of sugar firms based in Western Kenya. This study is being carried out for a management project paper as a requirement in partial fulfillment for award the Degree of the Master of Business Administration (MBA), University of Nairobi

Please note that this is strictly an academic exercise towards the attainment of the above purpose. You are hereby assured that the information will be treated with the strict confidence. Your co-operation will be highly appreciated.

Thank you for your anticipated kind response.

Yours Sincerely,

Willkister Nyangweso

Appendix II: Questionnaire

RESEARCH QUESTIONNAIRE

PART A: DEMOGRAPHIC AND RESPONDENT'S PROFILE

1. Name of the Respondent (optional)
2. Name of your organization.....
3. For how long has your organization been in existence?
 - a) Under 5 years [] b) 6-10 years []
 - b) 11-15 years [] d) Over 16 years []

PART B: EXTENT TO WHICH SUPPLY CHAIN MANAGEMENT PRACTICES HAVE BEEN ADOPTED

- 4) Does your organization practice supply chain management in recognition of its effect on organizational performance?

Yes ()

No ()

- 5) The statements below describe the extent of supply chain management practices on organizational performance. Please indicate the extent to which the supply chain management practices adopted by your organization have influenced performance:

Key:

- 5) Very great extent 4) Great extent 3) Moderate extent
2) Low extent 1) Very low extent

		5	4	3	2	1
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1	Return on Investment					
2	Market share growth					
3	Total cost reduction					
4	Sale growth					
5	Financial liquidity					
6	The reduction of response time for product design change					
7	The reduction of response time for product volume changes					
8	The accuracy of order processing for customers					

PART C: IMPACT OF SUPPLY CHAIN MANAGEMENT PRACTICES ON ORGANIZATIONAL PERFORMANCE

- 6) Below are some of the supply chain management practices that can be employed by a firm, Please tick appropriately the extent to which your organization has been practicing the following supply chain management practices and the degree to which it has affected the organizational performance.

Key;

5) Strongly agree; 4) Agree; 3) Moderate extent; 2) Disagree; 1) strongly disagree

	Strategic Supplier Partnership	5	4	3	2	1
1	We analyze our suppliers before contracting them and also develop unique cordial relationship with them for effective delivery of cane					
2	We actively involve our suppliers in new sugar cane breed and their development process					
3	We include our suppliers in production and quality of sugarcane setting and at the same time continuously support them.					
4	The supplier partnership has created unique knowledge on the farmers' needs and challenges that has been applied to improve business					

	knowledge and performance.					
5	As a result of the supplier partnership, we have continuous improvement programs that include our suppliers processes and this has helped the firm to improve its various performance measures					
6	Our strategic sourcing has also influenced knowledge creation and sharing among suppliers and retailers					
	Adoption of Information Technology					
1	The introduction and installation of internet-based infrastructure has enabled the firm to communicate with its suppliers more easily and react where need be faster in solving challenges arising in the transaction.					
2	Adoption of IT has also facilitated internet-based technology, information flow within the organization's departments and therefore improved the quality of information sharing.					
3	The flexibility of product specifications and testing of raw materials has been enhanced due to the adoption of information technology and as a result reduced the overall cost of the company.					
4	The adoption of IT has helped the organization get accurate information of inputs as well outputs from the firm and therefore helped in reducing losses.					
	Information Sharing	5	4	3	2	1
1	Information sharing among different sugar manufacturing firms has advanced the controllability of supply chain management and as a result reduced transaction costs between firms and their partners					
2	Our suppliers share proprietary information between themselves and the firms and as a result led to improvement in raw material quality and output					
3	Our suppliers keep us fully informed about the issues that affect our businesses in comparison with our competitors					
4	We and our suppliers exchange information that help in establishment of business planning					

5	Sharing information in the early stages of product development better positions the firm to support the retailer while avoiding costly stocking errors.					
6	Information exchange between our suppliers and us is timely, accurate and complete.					
	Knowledge Management					
1	The sharing of knowledge between the firm and the suppliers has helped the firm to manage uncertainty since the suppliers have faith and dependence in the firm.					
2	The establishment of internal knowledge management systems for organizations create a greater base for tacit learning to be leveraged					
3	The consequences of knowledge management in SCM are lower costs, improved customer value and satisfaction in the firm to achieve competitive advantage					
4	The establishment of internal knowledge management systems has created opportunities for reduction of knowledge isolation within departments and instead created a greater base for tacit knowledge to be leveraged.					
	Reverse Logistics					
1	Adoption of the pre-return labels in the raw materials has hastened the process of reverse supply chain					
2	Sustainable production and consumption of products has resulted					
3	Self satisfaction resulting from preservation of the environment					
	Green Supply Chain					
1	The attaining of ISO 14001 by the company has increased its customer loyalty.					
2	The organization has included GSCMP in its strategic planning process in order to reduce its operational costs					
3	By employing in-bound logistics the company has been able to grow its					

	market share through having a larger geographical coverage					
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THANK YOU FOR YOUR TIME

Appendix III: Sugar firms in Kenya

1. Mumias Sugar Company Ltd
2. Nzoia Sugar Company
3. Sony Sugar Company
4. Muhoroni Sugar Company
5. Chemelil Sugar company
6. Kibos and Allied
7. Butali Sugar
8. SOIN
9. West Kenya Sugar Company
10. Trans Mara Sugar Factory

