INFLUENCE OF INTERNAL BUSINESS VALUE CHAIN PRACTICES ON THE SUPPLY CHAIN PERFORMANCE OF LARGE MANUFACTURING FIRMS IN KENYA

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Influence of Internal Business Value Chain Practices on the Supply Chain Performance of Large Manufacturing Firms in Kenya

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other university.

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This thesis has been submitted for examination with our approval as university supervisors.

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DEDICATION

This work is dedicated to my children, Chelsea Nyambura, Virginia Nyambura and Victor Ng'ang'a.

ACKNOWLEDGEMENT

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ABBREVIATIONS AND ACRONYMS

BSC   Balance Score Card

CDF   Cumulative Density Function

CEO   Chief Executive Officer

COMESA Common Market for East and Southern Africa

CRM   Customer Relationship Management

EAC   East Africa Community

ERP   Enterprise Resource Planning

eSCM   Electronic Supply Chain Management

GDP   Gross Domestic Product

GOK   Government of Kenya

ICT   Information and Communication Technology

IT   Information Technology

JIT   Just in Time

JKUAT   Jomo Kenyatta University of Agriculture and Technology

KAM   Kenya Association of Manufacturers

LTD   Limited

NACOSTI National Council for Research and Technology

OECD   Organization for Economic Co-operation and Development

PM   Process Management

PMG   Performance Measurement Group

SC   Supply Chain

SCC   Supply Chain Council

SCM   Supply Chain Management

SCOR   Supply Chain Operations Reference

SPSS   Statistic Package for Social Sciences

SRM   Supplier Relationship Management

TQM   Total Quality Management

UK	United Kingdom
US	United States
USAID	United States Agency for International Development
VCM	Value Chain Management
WTO	World Trade Organization

OPERATIONAL DEFINITION OF TERMS

Business Value chain: Is a linear map of the way in which value is added by means of process from raw materials to finished products including service after delivery within an organization (Lysons, 2012). It includes inbound logistics, operations, outbound logistics, sales and marketing and services.

Business Value Chain practices: A set of activities undertaken in an organization to promote effective management of its value chain. They include supplier relationship management (SRM), Process management (PM), Customer relationship management and value chain support practices (Morris, 2012).

Customer relationship management (CRM): Entails all aspects of interaction that a company has with a customer, whether it is sales or service-related. It involves customer interaction, ensuring Customer satisfaction, knowledge of Customer expectations and responding to customer demands (Diana, 2011).

Information Technology (IT) support practices: An integrated set of components for collecting, storing, processing, and communicating information that gives IT the capability to support value chain primary activities in the entire organization. This includes management support, supply chain processes support, procurement support, operations support and CRM support (Kevin, Marcos & Marcelo, Peter, 2010).

Large Manufacturing sector: These are value-adding industries in Kenya that are registered members of Kenya Manufactures' Association (KAM) and are

large in size compared to others in their specific sector. There are 499 large manufacturing firms in Kenya (KAM, 2014).

Process management (PM):

Application of knowledge, skills, tools, techniques and systems to define, visualize, measure, control, report and improve processes with the goal to meet customer requirements profitably within an organization. It involves control of processes, value chain map, identification of core competences, sustainable processes, identification of cost drivers, quality assurance (Ponsignon, Maull & Smart, 2013).

Supplier relationship management (SRM):

The discipline an organization embraces in strategically planning for and managing all interactions with third party organizations that supply goods and/or services to an organization in order to maximize the value of those interactions within an organization. It involves Information sharing, supplier development, collaborative initiatives, Supplier performance and supplier selection (Diana, 2011).

Supply chain performance (SCP):

This is the process of qualifying the efficiency and effectiveness of the supply chain. Supply Chain Council (2010) presents five attributes of SC performance, which are SC reliability, SC responsiveness's flexibility, SC costs and SC asset management.

ABSTRACT

The manufacturing sector in Kenya constitutes 70 per cent of the industrial sector contribution to GDP. However, statistics show that the contribution of the manufacturing sector to GDP has continued to stagnate at about 10%, with contribution to wage employment on a declining trend. In the modern world, competition is no longer among organizations, but among supply chains. Therefore, the stagnant performance can be attributed to the fact that Kenya's manufacturing sector supply chains have continued to lag behind in terms of value addition as was reported in a recent Kenya Economic Report. Previous studies show that adopting best practices in internal business value chain is a powerful tool for implementing value addition strategies in the supply chains hence better supply chain performance. The specific objectives for this study were to; assess the influence of supplier relationship management practices on the supply chain performance of the large manufacturing firms in Kenya; determine if process management practices affect supply chain performance of the large manufacturing firms in Kenya; find out if customer relationship management practices influence supply chain performance of the large manufacturing firms in Kenya and establish if IT support practices affect supply chain performance of the large manufacturing firms in Kenya. Cross sectional–descriptive research designs were used to conduct this study. The target population was 499 firms. Stratified sampling was used to arrive at a representative sample of 200 manufacturing firms, whereby 144 firms responded representing response rate of 72 percent. Primary data was collected using questionnaires which were dropped and picked later. Multiple linear regression model was used to show the hypothesized relationships between variables while content analysis was used to analyze qualitative data. The results indicated that BVCP had a positive and significant effect on supply chain performance of large manufacturing firms in Kenya. Furthermore, they show that 62.6% of change in supply chain performance of the large manufacturing firms in Kenya can be explained by one unit change in BVCP put together. Therefore the study recommends that manufacturing firms in Kenya should engage in SRM practices that encourage value addition within the organizations. Also firms should employ PM practices that identify cost drivers, reduce waste, embrace teamwork in process decision making within the firm. They should also implement IT software that support analytical capabilities in the plan, source, make and deliver areas of supply chain. Regarding CRM practices the study recommends that organizations should implement CRM practices, systems and software that enable value adding information about customers flow throughout the supply chain. The implications of the study findings to the manufacturing industry in Kenya is that adopting best practices in BVCP leads to improved supply chain performance therefore increased competitiveness. This will contribute to enabling the industry account for 20 per cent of GDP as stipulated in Vision 2030.Thestudy recommends further research to establish whether different sub-sectors within the manufacturing sector would yield different results due to the different nature of their operations.

CHAPTER ONE

INTRODUCTION

1.1   Background of the Study

This study looked at the general background of internal business value chain practices. It further explored the concept of the business value chain practices in the global and Kenyan context. Supply chain performance measurement and its relationship with the internal business value chain practices were also discussed. The statement of the problem, study objectives, research hypotheses, scope justification, and limitations are presented in this chapter.

Efficient and effective business value chain management optimizes value for the customer and the customers' customer. It focuses on creating competitive advantages and strengthening all strategically relevant corporate activities (Scott & Carrington, 2011). It is important to note that value chains operate both at the business level and at the industry level. Value can only be achieved at the industry level if and when an organization through connecting and convening key players, develops right strategies, practice seeing the system through one another's eyes, build partnership, evaluate and scale up the value chain and institutionalize successful approaches (Margaret, 2013).

1.1.1   Internal Business Value Chain Management Practices

In this study internal business value chain practices generally incorporates the practices adopted by the individual firms or business in order to achieve effective value chains that contribute to successful supply chains. Business value chain management is a strategic business approach that has helped a growing number of businesses increases their long-term competitiveness. The deliberate decision by members of a supply chain to improve competitiveness though value chain management is proving to be a powerful strategic

approach that enables organizations to adapt to a rapidly changing business environment (Collins, 2011).

In the current global and dynamic markets, small and large companies alike are constantly confronted with the challenges of managing their business value chains (Kongkiti, Pekka, Kris & Rapee, 2011). Many newly industrialized countries such as Singapore, Taiwan, South Korea, Hong Kong, China, Thailand, and Malaysia have improved their industrial sectors by focusing on both export potentials and domestic demands. The success in their industrial development can be attributed to value-chain management. Key industries that have enjoyed the success from the viewpoint of value-chain concept include automotive, electrical and electronics, foods, garments and others (Pekka, Kongkiti & Rapee, 2010).

The overarching theme of value chain development and inclusive business in Africa is to improve the livelihoods of poor and marginalized communities through private-sector initiatives (FMECD, 2013). On the other hand Sub-Saharan African countries generally find themselves at the start of their integration process into Global Value Chains, having also relatively lower income levels than other regions in the world. At 15 percent of exports, the share of foreign value added embedded in the production of exports is low even compared with the 20 percent average observed in developing and emerging market economies. More worrisome is that the depth of integration of the countries sectors value chains.

Compared to other countries Ethiopia, Kenya, Seychelles, South Africa, and Tanzania sectors that have benefited the most from the deepening of integration include agriculture and agro-business (especially in Ethiopia and Seychelles), and manufacturing (particularly in Tanzania), but also textiles, transport, and tourism, although to a lesser extent (IMF, 2016). The state of affairs shows the need for effective business value chain in the manufacturing sector in Kenya that can enable the country's values chain integrate with the global value chain at a suitable level that can help it generate income and improve the GDP to the required level of 20% by 2030.

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Additionally the concept of value chain in the region concentrates more of industry value chains. For instance, in South Africa a key emerging trend in the development of smallholder agriculture in the effort to integrate smallholders into corporate food retail value chains. In many cases, integration of smallholders into corporate value chains can make profitable economic sense. The sugar, poultry, cotton, tobacco and forestry sectors have been doing this for a long time already, without any government compulsion (Stephen, 2013). Also Rebecca, Prosie, Johnny (2012) studied key actors in the Oil and Gas value chain, potential business linkages between the existing large oil prospecting companies and SMEs and factors that influenced SME decisions and willingness to invest in the Oil and Gas value chain.

There exists substantial documentation on previous work in Kenya on the value chain concept across major sectors with greater emphasis on value chain analysis of the Kenya agri food chains (OECD/WTO, 2013; FSD, 2012; Jacob, 2012; Fred, 2012; Lillian, Francis &Megan, 2011). Value chain analysis is undertaken in order to understand the behavior of costs and the sources of differentiation (Otieno, 2010). Coincidentally, previous research on value added analysis in Kenya has mainly focused on proportional contribution, in overall costs, of each value adding activity in various stages of the value chain (Chege, 2012). Margaret (2013) identified universal value chain management practices as operating policies, linkages within supply chain firms, improved performance, information technology systems, strategic alliance, performance measure, goal orientation, customer relationships, guidelines and procedures, supplier selection and supplier evaluation found to compare with best practices globally. Notably, there exist very few empirical studies that relate internal business value chains and supply chain performance.

Literature portrays internal business value chain practices from a variety of different perspectives with a common goal of ultimately improving supply chain performance. In review and consolidating the literature, four distinctive dimensions, including supplier

relationship management practices, Process management practices, customer relationships management practices and value chain support practices have been selected. These factors are consistent with the previous findings discussed by Pekka *et al.,* (2010) & Kongkiti *et al.,* (2011). The most influential value chain activities of seafood firms in Mombasa County are availability of finance, availability of raw materials, storage facilities and availability of human capital (Jacob, 2012). Margaret (2013) indicates that procuring and sourcing, operation excellence and supply chain design network and distribution affect supply chain performance.

It should be pointed out that even though the above dimensions capture the major aspects of internal business value chain practices, they cannot be considered complete. Other factors of great interest could not be included due to the concerns regarding the length of the survey and the parsimony of measurement instruments. More detailed discussion of the selected factors is presented in the literature review.

1.1.2 Supply Chain Performance

Supply chain (SC) is a linked set of resources and processes that begin with the sourcing of raw materials and extends through the delivery of end items to the final customer (SCC, 2010). In the modern world competition is no longer between organizations, but among supply chains. Effective supply chain management has therefore become a potentially valuable way of securing a competitive advantage and improving organizational performance (Kevin, Marcos, Marcelo & Peter, 2010). The degree to which a firm's supply chain has been transformed into a value chain determines the degree of success of the firm in terms of profitability. Firm's whose supply chains are just supply chains are not achieving their potential to add value for their customers and therefore financially underperform other firms who have made the transformation from supply chain to value chain (Rlaph & Thomas, 2014).

Supply chain performance measurement is the process of qualifying the efficiency and effectiveness of the supply chain (iIkka, 2012). Supply Chain Council (2010) presents five attributes of SC performance, which are SC reliability, SC responsiveness, SC flexibility, SC costs and SC asset management. SC reliability is the performance of the SC in delivering the correct product to the correct place, at the correct time, in the correct condition and packaging, in the correct quantity, with the correct documentation, to the correct customer. SC responsiveness is the speed at which a SC provides products to the customer. SC flexibility is the agility of a SC in responding to marketplace changes to gain or maintain competitive advantage. SC costs are the costs associated with operating the SC. SC asset management is the effectiveness of an organization in managing assets to support demand satisfaction. These measures are consistent with studies done by ilkka (2010) and Ugur & Erman (2013) among others.

1.1.3   Business value chain and supply chain performance

Mohammed, Banwet and Ravi (2006) denotes that the objective of value systems is to position organizations in the supply chain to achieve the highest levels of customer satisfaction and value while effectively exploiting the competencies of all organizations in the supply chain thus effective value chain leads to efficient supply chain (Mohammed et al., 2006). Supply chains are both efficient and effective when the exchange value of the activity system fulfills expectations that make up the use value. The use value is accumulated demands from the network that is internalized in sequential relationships and negotiated as efficiency goals (Benedikte, 2005).

End consumers provide 100% of the revenue to create the value chain that sustains the supply chain (Andrew, 2009). The degree to which a firm's supply chain has been transformed into a value chain determines the degree of success of the firm in terms of profitability. Firm's whose supply chains are just supply chains are not achieving their potential to add value for their customers and will financially underperform other firms

who have made the transformation from supply chain to value chain (Rlaph & Thomas, 2004).

1.1.3   The large manufacturing firms in Kenya

The manufacturing sector in Kenya constitutes 70 per cent of the industrial sector contribution to GDP (KER, 2013). Kenya Vision 2030 identifies the manufacturing sector as one of the key drivers for realizing a sustained annual GDP growth (KER, 2013). This sector has the potential to generate foreign exchange earnings through exports and diversify the country's economy (Awino, 2011).The contribution of the manufacturing sector to GDP has continued to stagnate at about 10 per cent; with contribution to wage employment on a declining trend (RoK, 2013). Kenya's share of manufacturing exports to the global market is about 0.02 per cent. While this compares favorably with neighboring Uganda and Tanzania, the performance is unimpressive compared with South Africa, Singapore, China and Malaysia. For example, South Africa's global share of manufacturing exports is about 0.3 per cent, while that of Singapore and Malaysia are about 2.4 per cent and 1.3 per cent, respectively. According to a recent Kenya economic report low value addition and high costs of production impede on the competitiveness of Kenya's manufactured products in the global market (RoK, 2013).

A number of empirical studies have been carried out in the manufacturing sector in Kenya. For instance Okello & Were (2014) found out that product development process, inventory management, lead time, technology and innovation have a significant influence on the performance of the firms. Stephen, Tom and Julius (2012) found out that there exits low level implementations of the supply chain management systems in the manufacturing industries in Kenya. Margaret (2013) indicated that different firms adopt practices that best suit their sector in order to enhance supply chain performance. Notably, there is no study that investigates the role of the selected internal business value chain practices to supply chain performance of the large manufacturing sector in Kenya therefore this study seeks to fill this gap.

1.2　Statement of the Problem

The Vision 2030 stipulates that the manufacturing sector should account for 20 per cent of GDP by 2030. Achieving this ambitious goal largely depends on a competitive manufacturing sector (RoK, 2015). However the sector's contribution to the GDP has stagnated at an average of 10 per cent for more than ten years with a growth of 3.1 percent, significantly lower than the overall economic growth of 5.0 percent (WB, 2014). Compared to the other sectors the manufacturing sector, which is dominated by large manufacturing firm slugged behind in output growth. For instance, in 2014, while manufacturing output increased by 4.8 percent, agriculture output grew by 15.8 percent, building and construction grew by 13.1 percent, information and technology 12.7 percent, transport and storage 13.7 percent among others (KNBS, 2015).

Kenya's manufacturing exports represented about 0.02 percent of global manufacturing exports in 2013 while South Africa, the regional champion in manufacturing exports, produced 0.3 percent of global manufacturing exports 15 times more than Kenya. The share of manufactured goods imported by the East African Community (EAC) from Kenya declined, from 9 percent of total manufacturing imports in 2009 to just 7 percent in 2013 (WB, 2014). Given that manufacturing firms are value adding firms it is imperative that the firms' value chain practices be investigated. Firm's whose supply chains are just supply chains are not achieving their potential to add value for their customers and will financially underperform other firms who have made the transformation from supply chain to value chain (Rlaph & Thomas, 2004). World Bank's Enterprise Survey (2014) indicates that there are negative trends that reflecting efficiencies in the supply chains as suggested by firm-level analysis based on data from the Census of Industrial Production. Additionally (Fred, 2012) concluded that one of the biggest challenges faced by the seafood sector in the Kenyan coast is value addition. On the other hand KAM (2014) reiterates that the stagnant performance is disturbing for business and indicates eroded competitiveness and compromises the government's aspirations of 20% growth that will enable Kenya to

become prosperous. If this problem is not addressed it will cause low economic development leading to lack of achievement of the vision 2030 with regard to the manufacturing sector, lack of competitiveness in the global market, loss of jobs consequently creating social injustice in the society.

1.3 Study Objectives

1.3.1 General objective

The general objective of the study was to find out the influence of internal business value chain practices on the supply chain performance of the large manufacturing firms in Kenya.

1.3.2 Specific objectives

The specific objectives of the study were as follows:

  i.   To investigate the influence of supplier relationship management practices on supply chain performance of the large manufacturing firms in Kenya.

  ii. To determine the influence of process management practices on the supply chain performance of the large manufacturing firms in Kenya.

  iii. To establish the influence of customer relationship management practices on supply chain performance of the large manufacturing firms in Kenya.

  iv. To assess the influence of IT support practices on the supply chain performance of the large manufacturing firms in Kenya.

1.4 Research Hypotheses

The study sought to address the following research hypotheses:

  i. $H_{A}1$: There is no significant relationship between supplier relationships management practices and supply chain performance.

ii. H_A2: There is no significant relationship between process management practices and supply chain performance.

iii. H_A3: There is no significant relationship between customer relationship management practices and supply chain performance.

iv. H_A4: There is no significant relationship between IT support practices and supply chain performance.

1.5   Significance of the Study

Policy makers in Kenya recognize the importance of the manufacturing sector for long term economic development. Indeed, the growth targets for manufacturing stated by the government in its Vision 2030 document are ambitious and require rapidly increasing investment levels and business strategies that will enable the industry reach levels above 30% of GDP (RoK, 2014). Kenya aims to increase her regional market share of manufactured products from current 7 to 15 per cent and develop a robust, diversified and globally competitive manufacturing sector. According to a recent Kenya economic report low value addition and high costs of production impede competitiveness of Kenya's manufactured products in the global market (RoK, 2013). In order to solve this problem, management of manufacturing firms should target to increase the capacity of value addition in the manufacturing sector.

Effective business value chain management has become a potentially valuable way of securing a competitive advantage and improving supply chain performance (Kevin, Marcos & Marcelo, Peter, 2010). Improved value chain performance has been associated with a variety of advantages, including increased customer value, increased profitability, reduced cycle times and average inventory levels and even better product design (William *et al.,* 2011) thus improving supply chain performance.

1.6 Scope of the Study

The study established whether internal business value chain practices influenced supply chain performance of large manufacturing firms in Kenya. The study was conducted with a population of 499 firms and a sample of 200 firms that were selected using stratified random sampling. The practices included supplier relationship practices, process management practices, customer relationship management practices and IT. These variables were chosen because they captured the major aspects of internal business value chain practices in the literature review. The researcher focused on the internal business value chain practices because the success of the industry value chain is determined by the practices individuals firms put in place to manage their value chains. It follows that an effective industry value chain meets certain preconditions such as sufficient levels of capacity, quality, and efficiency required to join Global Value Chains (Baldwin 2011; WTO 2014) at a competitive level. Eventually this creates successful and competitive supply chains.

The theories involved in the study under the specific variables were Agency theory, Transaction Cost Theory, Porters value chain theory, Coordination theory, Theory of constraints (TOC), Relationship Marketing, Marketing-Driven Value Chain theory, Hines Value chain theory, Competitive Advantage Theory, Ensemble Theory, Network (NT) Theory, Dynamic Capabilities Theory and the Game theory. The main theory that anchors this study was the Porters value chain theory from which all the variables of the study are supported. The study involved procurement/supply chain managers as the key informants the specific areas of the study. The researcher used the SCOR model to measure the performance of the supply chain. The study took six months to be completed.

1.7   Limitations of the Study

As with most research of this nature, the findings of this study should be interpreted with consideration of a number of limitations. Despite the fact that the researcher gave

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assurance using the appropriate documents to the management that the findings of the study were strictly to be used for this study, the willingness to give information for secondary data from private owned manufacturing   firms was a key challenge in primary data collection. However the researcher was able to get the information from other sources for example industry magazine and government reports. Secondly, there was also a lack of adequate current studies on internal business value chain practices in the manufacturing sector, especially in the developing countries and specifically in Kenya. However, the researcher mitigated this challenge by comparing similar research in different sectors, both locally and globally to try and infer the research findings.

This research was conducted in the large manufacturing firms dealing in different manufacturing sectors. However, it did not bring out the statistical differences that may exist due to the nature of operations in different subsectors. This may mean that the results obtained are generalized but may probably differ in distinct subsectors for example the conditions in which the food manufacturing operates is not the same as for the chemical manufacturing. This can however be moderated by having an in depth study on specific sectors. This study used a cross-sectional research design in which the respondents were interviewed on only one occasion to appraise their perspective of the issues under study. Therefore long term effects of the internal business value chain practices were not addressed. The use of a case study research design would have addressed this perspective in a better manner at would give a researcher a long period of time to interact and observe respondents in their natural environment.

CHAPTER TWO

LITERATURE REVIEW

2.1   Introduction

This chapter presents literature review of the theories that inform the variables in this study that is supplier relationship management, process management, customer relationship management and IT support practices. Similarly, it reviews both critical and empirical literature of all the key variables mentioned. It also provides a summary and critique of the literature reviewed. It also presents a conceptual research framework which forms the basis for the research hypothesis.

2.2   Theoretical Framework

The theoretical perspective relevant to this study was based on internal business value chain management practices that were presumed to influence the effectiveness of a business value chain consequently affecting supply chain performance. The theories discussed in this section are agency theory, Porter's value chain theory, relationship marketing theory, ensemble theory and network theory. However this study is mainly anchored on the Porter's value chain theory from which the variables of the study were based.

2.2.1 Agency Theory

Agency Theory was published by Jensen and Meckling in 1976. It examines the buyer-supplier relationship using the principal-agent model in which the two parties are interdependent and may pursue different goals (Zsidisin & Ellram, 2003). According to this theory, the variables that influence the buyer-supplier relationship model are information systems, uncertainty of results, conflicting goals, duration of the relationship, adverse selection and moral hazard. These models work on the assumption that principals are aware of the nature of the task and the capabilities required (by the agent) to successfully accomplish that task (Bergen et al., 1992). In situations where an agent's

action is difficult to observe (largely due to the complex nature of the task), the principal is exposed to a heightened risk of opportunism by its agent. In essence, there is an opportunity for the agent to both evade control and misrepresent its capabilities (Bergen et al., 1992). Hidden action models deal with the design of the contract, which can be used to mitigate the moral hazard problem and motivate the agent to take appropriate action (Holmstrom & Milgrom, 1987).

In the management of supplier practices internal competences requires greater reliance on external suppliers to support directly non-core requirement. Second, developing effective supply base management strategies can help counter the competitive pressures brought about by intense worldwide competition. As organizations continue to seek performance improvements, they are reorganizing their supplier base and managing it as an extension of the firm's business system (Vidyaranya, 2004). Therefore the theory instigated first variable which was to investigate whether supplier relationship management practices influence supply chain performance of the large manufacturing firms in Kenya.

2.2.2 Porter's value chain theory

Porter's value chain theory was postulated by Porter in the 1980s. A value chain disaggregates a firm into its strategically relevant activities in order to understand the behavior of costs and the existing and potential sources of differentiation. Porter's value chain consists of a set of activities that are performed to design, produce and market, deliver and support its product. Porter distinguishes between primary activities as inbound logistics, operations, outbound logistics, marketing and sales, service in the core value chain creating direct value. Support activities as procurement, technology development, human resource management, firm infrastructure supporting the value creation in the core value chain (Mathias, 2010).

With the help of the value chain concept companies can analyze and describe their source of competitive advantage. An effective value strategy approach enables an organization

identifies the core competencies necessary to compete and to produce and deliver customer value expectations and to coordinate the value addition process (David, 2011). This theory instigates the second variable which is to determine the effect of process management on the supply chain performance of the large manufacturing firms in Kenya. This study was mainly informed by this theory since all the variables of the study were pegged on the primary and support activities as they are in this theory
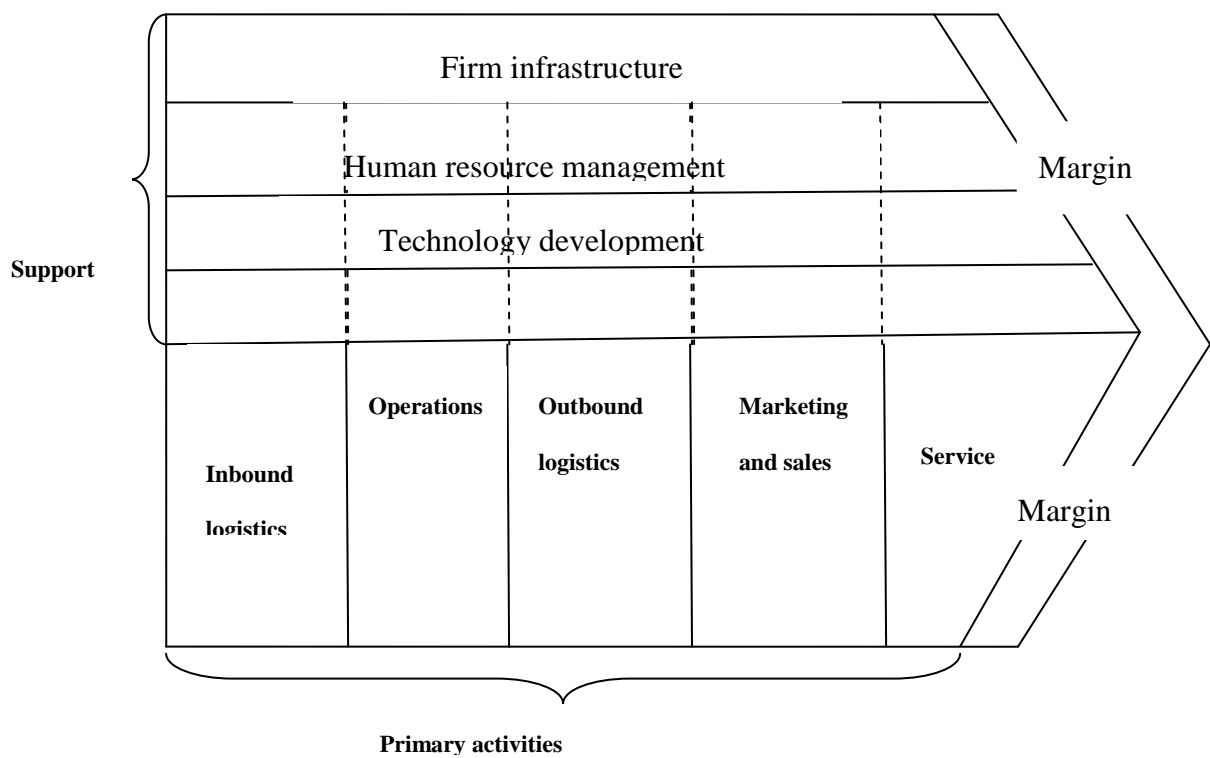
Figure 2.1: Porter's Generic Value Chain

Source: Adapted from Porter (2004)

2.2.3 Relationship Marketing Theory

The concept of relationship marketing was first mentioned by Berry (1983), in a conference paper on enhancing customer relationships. While recognizing that customer acquisition was and would remain part of marketer's responsibilities, this viewpoint emphasized that a relationship view of marketing implied that retention and development of customers were of equal or even greater importance to the organization in the long term, than customer acquisition. After a period of time, the same author (Berry, 1995) described relationship marketing as a "new-old concept" continuing that "the idea of a business earning customers' favor and loyalty by satisfying their wants and needs was not unknown to the earliest of merchant".

At the center of the relationship marketing perspective is the idea that customers have continuing value over the period they stay in business with a specific company. The focus is, therefore, on the relationships rather than transactions. The duration of the exchange is a core element in distinguishing the two terms. A transactional exchange involves a single, short time exchange with a distinct beginning and ending. In contrast a relational exchange involves multiple linked exchanges extending over time and usually involves both economic and social bonds (Siti, 2014).

The implication of this theory is that organizations should identify, establish, maintain and enhance relationships with customers and other stakeholders, at a profit, so that the objectives of all other parties involved are met; and that this is done by a mutual exchange and fulfillment of promises. Therefore the theory instigated the third variable which was to establish whether customer relationships management practices affect supply chain performance of the large manufacturing firms in Kenya.

2.2.4 Ensemble Theory

According to Daft (2004) ICT infrastructure is perceived as enmeshed network of agents and alliances with a major role of installed base applications and design strategies. Further,

the proponent stated that a key characteristic of infrastructures is that they evolve over long time where the existing installed base applications or structure strongly influences how the infrastructure can be improved. The concept of the installed base network is the core of the theory. However, the design strategies have to reflect on both the structured and wireless networks. The applications that can be shaped or improved and be extended in the life time of the infrastructure as an entity that is to exist beyond the control and the influence of designers and users. Further, the larger the installed base applications grow, the more powerful it becomes. It dictates that the design of the infrastructure to be re-engineered to match the technological trends. This theory informed the fourth variable which was on IT support influence on the supply chain performance of the large manufacturing firms in Kenya.

2.2.5 Network (NT) Theory

The rational self-interest school within network research can be traced back to the work of sociologist James Coleman (1988). Coleman showed how, from two-actor interactions, with each actor operating out of self-interest, emerges the basis for a social system (such as a small group). While each actor is trying to maximize his or her individual interests, each is at the same time constrained because he or she is embedded in an interdependent relationship with the other. That relationship imposes limits on both actors' behavior and regulates the extent of self-seeking (Nancy, David, Holly & Noshir, 2013). These limits are counterbalanced by the increased access to resources each actor gets via the other. NT can be used to provide a basis for the conceptual analysis of reciprocity (Oliver, 1990) in cooperative relationships.

The network theory (NT) contributes profoundly to an understanding of the dynamics of inter- organizational relations such as supply chain relationships by emphasizing the importance of "personal chemistry" between the parties, the build-up of trust through positive long-term cooperative relations and the mutual adaptation of routines and systems through exchange processes. Through direct communication, the relationships convey a

sense of uniqueness, ultimately resulting in supply chains as customization to meet individual customer requirements that enhances supply chain performance. The parties gradually build up mutual trust through the social exchange processes (Nancy *et al.*, 2014).

 A network does not seek an optimal equilibrium, but is in a constant state of movement and change. Links between firms in a network develop through two separate, but closely linked, types of interaction: exchange processes (information, goods and services, and social processes) and adaptation processes (personal, technical, legal, logistics, and administrative elements) (Johanson & Mattsson, 1987). NT is descriptive in nature and has primarily been applied in SCM to map activities, actors, and resources in a supply chain. The focus has been on developing long-term, trust-based relationships between the supply chain members (Gadde & Haakansson, 2013).

2.3   Conceptual Framework

Conceptual framework is a network of interlinked concepts that together provide a comprehensive understanding of a phenomenon or phenomena (Melanie & Eriikka, 2013). The concepts that constitute a conceptual framework support one another, articulate their respective phenomena, and establish a framework-specific philosophy. Conceptual frameworks can be used for four purposes: to guide practice; as a basis for research projects; for pedagogic purposes and in administrative situations. The general objective of the study was to establish how the internal business value chain practices influence supply chain performance of the large manufacturing firms in Kenya. This overall objective of the study was conceptually and diagrammatically represented in figure 2.2.The independent variable was internal business value chain practices which are indicated by supplier relationship management practices, process management practices, customer relationships management practices and IT support practices. The dependent variable was supply chain performance. These variables were arrived at after an extensive literature review presented
 in this study.

Independent   variables   **Dependent variable**

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┌─────────────────────────────┐
│ SRM practices               │
│ - Information sharing        │
│ -supplier development        │
│ -collaborative initiatives   │
│ -Supplier performance        │
└─────────────────────────────┘

┌─────────────────────────────┐
│ PM practices                │
│ -control of processes        │
│ -identification    of   core │
│ competences                  │
│ -cost drivers                │       ┌─────────────────────────────┐
│ -quality assurance           │       │ Supply chain                │
└─────────────────────────────┘       │ performance                 │
                                        │                             │
┌─────────────────────────────┐       │ - Reliability               │
│ CRM practices               │       │ - Responsiveness            │
│                              │       │ - Lead time                 │
│ -customer interaction        │       │ - costs reduction           │
│ -Customer satisfaction       │       └─────────────────────────────┘
│ -Customer expectations       │
│ -consumer value              │
└─────────────────────────────┘

┌─────────────────────────────┐
│ IT support practices        │
│ -Supply chain support        │
│ -Order commitment            │
│ -Distribution support        │
│ - Make process support       │
│                              │
│                              │
│                              │
└─────────────────────────────┘
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Figure2.2: Conceptual Framework

2.3.1 Supplier Relationship Management Practices

Supplier Relationship Management is the discipline that an organization embraces while strategically planning and managing all interactions with organizations that supply goods and/or services in order to maximize the value of those interactions. It involves Information sharing, supplier development, collaborative initiatives, Supplier performance and supplier selection (Diana, 2011). Strategic supplier partnership is a long-term relationship between the company and its suppliers and it is designed to leverage the strategic and operational capabilities of individual participating companies to help them achieve significant emphasized benefits (Li, Ragu & Subba, 2012).

A strategic partnership emphasizes direct, long-term association and encourages mutual planning and problem solving efforts and enables companies to work more effectively with a few important suppliers who are willing to share responsibility for the success of the product. Suppliers participating early in the product-design process can offer more cost-effective design choices, help select the best components and technologies and help in design assessment (Diana, 2011).

2.3.2 Process Management Practices

Process Management is defined as all efforts in an organization to analyze and continually improve fundamental activities such as manufacturing, marketing, communications and other major elements of company's operations (Peter, 2011). A business process is a complete, dynamically coordinated set of activities or logically related tasks that must be performed to deliver value to customers or to fulfill other strategic goals (Strnadl, 2012).The changing economic environment has led to an increasing interest in improving organizational business processes to enhance performance (McCormack *et al.*, 2010). An effective value strategy approach makes an organization identifies the core competencies necessary to compete and to produce and deliver customer value expectations and to coordinate the value production process(David, 2011). Peter *et al.*, (2010) indicated that

Value surrounds the movement of resources through the transaction process. According to George (2013) a value stream map takes into account not only the activity of the product, but also the management and information systems that support the basic process as well as alignment of People, Process, and Products that are essential for long-term success.

2.3.3 Customer relationship Management Practices

Customer Relationship Management (CRM) implies an effort to maintain a life time quality relationship with all customers for mutual benefit. It also involves business strategy, people, processes, performances (Shelby, Dennis & Sridhar, 2012). The underlying factors of CRM are the integration of distinctive competences, resources and capabilities (Rovia, 2011). Validity and fame of an organization in producing goods with proper and actual quality and advertisement of whatever exists, the proper contact of employers with customers, and customer assumptions can be effective in their attraction (Mehrdad & Mohammad, 2011).

Successful CRM is based on keeping interaction by listening to the customer, maintenance of efforts to offer goods and services based on customer values and paying attention to the continuous changes of customers' needs as they differ from each other in all aspects of life (Turban, 2012). The important process of CRM includes proactive customer business development and building partnership relationship with most important customers. This leads to superior mutual value creation (Dwarkanath, 2011).

2.3.4 Information Technology Support Practices

Information Technology development refers to know-how, proceedings or technology included in processing installations. Technology development is important for the competitive advantage in all economic fields and in some it represents the competitive advantage key (Otieno, 2012). By leveraging on the internet technologies, organizations should create a value web (Laudon & Laudon, 2012) or a hub structure that improves the efficiency and the effectiveness of value chain and supply chain by digitally connecting

customers, suppliers and partners. This reduces the information gaps/errors along the chain (especially demand and supply) and improves communication, cooperation and collaboration (Xu & Quaddus, 2013).

2.3.5 Supply Chain Performance

Supply chain performance measurement the process of qualifying the efficiency and effectiveness of the supply chain (iIkka, 2012). Effective supply chain management (SCM) has been associated with a variety of advantages including increased customer value, increased profitability, reduced cycle times and average inventory levels and even better product design (William *et al.,* 2010). Supply Chain Management activities are extremely influential in company profitability whereby a 1% reduction in SCM costs could represent a 12% profit improvement. That's a 12 to 1 relationship in cause and effect terms (George, 2013).

Various performance metrics have been developed to measure, evaluate, and monitor the operation of the entire supply chain (Ugur & Erman, 2013).The supply chain operations reference (SCOR) model was introduced in 1996 by the Supply-Chain Council, which is a global organization of firms interested in SCM. According to Theeranuphattana (2011), the SCOR model offers users standard descriptions of management processes that make up the SC, a framework of relationships among the standard processes, standard metrics to measure process performance, management practices that produce best-in-class performance, standard alignment to software features and functionality that enable best practices.

Supply Chain Council (2012) presents five attributes of SC performance which are SC reliability, responsiveness, flexibility, costs and asset management. SC reliability is the performance of the SC in delivering the correct product to the correct place, at the correct time, in the correct condition and packaging, in the correct quantity, with the correct documentation, to the correct customer. SC responsiveness is the speed at which a SC

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provides products to the customer. SC flexibility is the agility of a SC in responding to marketplace changes to gain or maintain competitive advantage. SC costs are the costs associated with operating the supply chain. SC asset management is the effectiveness of an organization in managing assets to support demand satisfaction. This includes the management of the both assets: fixed and working capital. This measures are also consistent with studies done by ilkka, (2010) and Ugur & Erman., (2013). Margaret (2013) used sales maximization to measure supply chain performance of the large manufacturing firms in Kenya.

2.4   Empirical literature

2.4.1   Supplier relationships management practices

Marta, Beatrix, Lorenzo and Francesco (2013) carried out a study on cooperation strategy in buyer-supplier relationships and its effect on buyer performance. The purpose of the study was to explore the relationship between manufacturing firms and their suppliers, and its impact on financial performance of Spanish manufacturing companies. They used exchange of information, supplier development, and mutual dependence as indicators of buyer supplier relationships. The sample consisted of 1,980 firms and its distribution by sector in the Spanish manufacturing industry. They designed a supplier cooperation indicator from the variables suggested in the existing literature, which are exchange of information, supplier development and mutual dependence.

Inayat, (2012) indicates that the essence of strong relationship between buyer and supplier is trust, which in turn affects the supplier performance and consequently the organizational performance. His study used correlation and regression to analyze a set of data collected from the survey of 54 Indian manufacturing organizations. The results demonstrated that face to face communication and fair treatment of supplier by buyer is positively related to development of trust and that development of trust has a positive influence on readiness of supplier to invest in the specific requirements of buyer.

On the other hand strong relationship between buyer and supplier positively affects supplier performance, and supplier performance is positively related to the organizational performance. Raskovic & Makovec, (2012) objective was to analyze which and how much specific relational and/or transactional dimensions of buyer-supplier relationships affect transnational company (TNC) buyer-supplier relationship competitiveness. A sample of 130 international suppliers (approx. 30 % response rate) was obtained and provides the basis for their analysis (n=130). They surveyed suppliers to a large TNC, headquartered in Slovenia, and with manufacturing operations in Slovenia, Russia, Serbia and the United Arab Emirates. Based on an illustrative empirical example, they tested a simple variance-based reflective Structural Equation Model (SEM) with main effects based on a sample of 130 TNC buyer-supplier relationships.

Their results show that buyer-supplier relationship competitiveness is mostly driven by interpersonal trust and joint problem solving (both relational determinants). They recommended that managers should pay equal (if not even larger) attention to relational dimensions in their buyer-supplier relationships vis-à- vis existing transactional dimensions, especially in well-established buyer-supplier relationships. Additionally Raskovic and Makovec (2012) observed that each relationship is prone to conflicts and problems. In this regard, joint problem solving should be seen as the second key managerial tool which drives not only buyer-supplier relationship competitiveness, but also facilitates trust as well.

Hung, Fei, Chien and Yu-Ming (2011) conducted a   studied the relationship among supplier capability, partnership and competitive advantage in Taiwan's semiconductor industry. The research was focused on 262 firms on Taiwanese semiconductor industries to explore the impacts of supplier capability and partnership on organizational competitive advantages, in the hope of providing organizations with the key factors to competitive

advantages for them to manage competitive challenges and to continue organization's vitality. Judgment sampling was used to determine the sampling objects from the firms listed in the 2007 Yearbook of semiconductor industry published by the Industrial Technology Research Institute in Taiwan. Hung *et al.,* (2011) statistical analyses included factor analysis, Pearson's correlation and multiple regression analysis employed to examine the interrelationships among these factors in deciding how supplier's capability and partnership affect competitive advantages. Their results indicated supplier's capabilities and partnerships have a significant positive correlation and they positively influence competitive advantage.

2.4.2 Process management practices

Remco, Sander and Jong (2015) posit that business process management (BPM) maturity is a measure to evaluate how professionally an organization manages its business processes. Their research paper presented an empirical investigation of these claims, based on a sample of 120 German and Dutch organizations. They looked at a selection of organizational properties that revealed that higher BPM maturity contributes to better performance, but only up to a point. They also revealed that higher innovativeness is associated with higher BPM maturity.

Ugur and Erman (2013) conducted a study on the effects of business process reengineering and enterprise resource planning on supply chain management performance. The main purpose of this study was to measure the contribution level of each strategy to the overall performance of supply chain separately. The study was conducted in 132 companies in Turkey to test the effects of BPRs existence on SCM performance; independent samples t-test was used. To test the effects of BPR and ERP together on the SCM performance 2-way variance analysis was used to test the combined effect of more than one independent variable on a dependent variable.

Their findings indicated that using either BPR or ERP strategies has positive effects on SCMs overall performance where it has been found that successful implementation of ERP has more improvement chance on performance. Furthermore, they proved that using both BPR and ERP together improves the SCM performance further to the points where neither BPR application nor ERP implementation may reach individually. This concluded that BPR acts as a success factor for ERP systems, which improves the chances of successful ERP implementation. Since implementation of an ERP system is a risky and costly process this issue is very important for strategic investment decisions. These results give great insights to the managers of the supply chains who already use or plan to invest into any of these strategies.

Wai, Ming and Kim (2013) indicated that as organizations attempt to boost their performance, the question becomes how to configure BPM resources to continuously improve organization performance. In their research, they posit that managerial BPM capabilities based on managers commitment and employee involvement have a positive impact on technical BPM capabilities (i.e. comprised of strategic alignment and IT infrastructure), which in turn drives an organization's ability to enhance its performance. Using data from matched surveys of 182 organizations, they found that technical capabilities mediate the relationship between managerial capabilities and organizations' performance. Furthermore, they reveal that organization culture moderates the relationship between managerial and technical capabilities. This contributed to the theory of BPM by showing that it can be separated into managerial and technical capabilities, and this forms the essential governance model for delivering superior performance.

Ponsignon, Maull and Smart (2013) objective was to explore both the similarities and differences in the process improvement approaches of organizations. More specifically, it sought to identify process redesign principles and the combinations of these principles that are used successfully by practitioners. They used Q-methodology to explore the viewpoints of a range of practitioners about the success of 16 process improvement practiced. The

questionnaire was developed for process experts who represent their respective organizations. They obtained a total of 62 responses, of which they retained 48 for the analysis phase. The findings suggest that removing non-value-adding tasks and re-sequence tasks can be described as foundational principles of process improvement and that they are universally applicable. They recommended that regardless of process characteristics, product or service orientation, and business and organizational contexts, new improvement initiatives should concentrate on identifying and eliminating the NVA tasks from the process. Following the identification and removal of such tasks, managers should approach the optimization of the process based on the most natural sequence of execution of the remaining tasks. This is undertaken through the consideration of logical dependencies between tasks in the process.

2.4.3 Customer relationship management practices

Siti, Norfaridatul, Juhaini and Izaidin (2014) aimed to explain the impact of CRM practices to organizational performance through a proposed conceptual model in Malaysian small and medium enterprises (SMEs) food manufacturing industry. The model was developed and empirically tested through survey data obtained from 369 organizations. The results indicated that CRM practices have a significant positive effect on organizational performance. Additionally, the results revealed that enhanced key customer focus and relationship marketing leads to better organizational performance.

Tim, Timothy, and David (2012) objective was to examine the impact of customer relationship management (CRM) on firm performance using a hierarchical construct model. They tested their hypotheses on a cross-sectional sample of business-to-consumer firms based in Australia. Their results revealed a positive and significant path between a superior CRM capability and firm performance. Additionally they observed that the impact of IT infrastructure on superior CRM capability is indirect and fully mediated by human analytics and business architecture. They also found that CRM initiatives jointly

emphasizing customer intimacy and cost reduction outperform those taking a less balanced approach.

Tim *et al*., (2012) recommended that whereas there is a temptation for managers to be normative about the pursuit of competitive advantage and direct attention and resources toward particular CRM capabilities, technical, human and business capabilities this approach would seem to be flawed, since in isolation these capabilities are insufficient to generate competitive superiority. Each capability is nested within an intricate organizational system of interrelated and interdependent resources. An over-emphasis on customer intimacy to the exclusion of operational efficiency and analytic orientations actually diminish performance.

Mehrdad and Mohammad (2011) objective was to investigate the impact of customer relationship management on competitive advantage in industrialized manufactures of Trucks. The method of conducting the research was descriptive while data was gathered using a questionnaire. The results obtained from the data analysis showed that all the relations are meaningful at the 5% of deviation using spearman correlation test. According to Mehrdad & Mohammad (2011) the ideal position of variables in the given company from the managers' perspectives was as follows: meeting customer's complaints, attracting and protecting customers being faithful, improving and specializing the relations with the customers and understanding and separating of the customers. One of the most important factors in achieving the competitive advantage is the absolute concentration on the customer. This study concluded that customer relation management is effective for achieving the competitive advantage in such companies. Therefore it is recommended to promote cooperative plans in the company, provide the customers with more facilities and make efficient systems for interaction with customers.

2.4.4 Information Technology Support Practices

Hasan, Vural and Mustafa (2012) investigated the effect of a new supply chain design on business performance in the context of information technologies in fast-moving consumer goods industry (FMCG) in Turkey. The company possessed and used a supporting tool named as SAP APO software as an information technology to perform supply chain operations. Under the scope of the study, supply, production and distribution planning processes were modeled and implemented in short, medium and long terms. Implementation results demonstrate that restructuring of the supply chain by using information technologies has positive effects on business performances criterions like supply, production and distribution.

Ramayah, Tan, Roaimah, and Noornina (2012) proposed a model that assessed the usage of information technology (IT) tools, commitment of partner relationships, and supply chain performance in the Malaysian manufacturing industry. A total of 250 questionnaires were distributed to manufacturing companies located in Penang, which is in the northern region of Malaysia. After applying multiple regression analysis, the study found out that a higher level of supply chain partner commitment leads to a higher level of supply chain reliability and flexibility. Trust among supply chain partners also contributes to improving supply chain flexibility. Additionally the results revealed that there was an insignificant relationship between usage of IT tools and supply chain performance. This could have been because IT tools were not highly used. Also due to the fact that IT tools couldn't create flexibility in response to changing environments since structured and standardized routines of IT tools are unable to cater for business cases that require more flexible ways of doing things.

Peter, Kevin, Marcos and Marcelo (2011) study focused on the impact of business analytics on supply chain performance. Using structural equation modeling and a sample size of 310 companies from different industries from the USA, Europe, Canada, Brazil

and China, the research investigated the relationship between analytical capabilities in the plan, source, make and deliver area of the supply chain and its performance using information system support and business process orientation as moderators. Since it aim was to describe and organize information about the influence of analytics, BPO and IS support on SC performance the study assumed both descriptive and exploratory character. The findings suggested the existence of a statistically significant relationship between analytical capabilities and performance. The moderation effect of information systems support was considerably stronger than the effect of business process orientation. The results provide a better understanding of the areas where the impact of business analytics may be the strongest.

2.4.5 Supply chain performance

Margaret (2013) explored on value chain management practices adopted by large manufacturing firms in Nairobi and also determined the relationship between these practices and supply chain performance. The study outlined three categories of value chain management practices that included procuring and sourcing, operation excellence and supply chain design network and distribution. The researcher targeted 46 large manufacturing firms in Nairobi and using a 76% response rate data analyzed using Microsoft Office Excel 2007 application and facts analyzed to give results. The findings of the study were that value chain management practices determined supply chain performance and that different firms adopt practices that best suit their sector in order to enhance supply chain performance. Sales maximization was the main supply chain performance measure.

Asawin (2012) conducted a study on supply chain performance measurement framework whose aim was to develop and apply an integrated supply chain performance measurement framework that provides a more holistic approach to the study of supply chain performance measurement by combining both supply chain macro processes and decision making

levels. The framework was validated through in-depth interviews with three Thai manufacturing companies. The collected data was analyzed, interpreted, and reported using thematic analysis and analysis hierarchy process (AHP) which was influenced by the study's conceptual framework. At strategic decision making level, customer service was the most important factor followed by customer integration. At tactical level, both customer order processing and delivery factor were the most important while at strategic level the extent of cooperation to improve quality and customer integration were among the front-runners for all three companies but in different order.

Milkka (2010) carried out a case study on supply chain performance measurement in the manufacturing industry which was single case study research to develop a supply chain performance measurement framework. The aim of the study was to create a supply chain measurement framework for manufacturing industry, define what data should be measured and verify the measurement framework in the case company's supply chain. The research approach was hermeneutic and the research was a qualitative, constructive single case study research. The key elements for the measurement framework were defined as time, profitability, order book analysis and managerial analysis.

2.5   Critique of the literature

Literature review indicates that practices that enhance the effectiveness of the value chain are related to supplier relationship management, process management, customer relationship management and value chain support practices among other variables not included in this study and for which others have been previously researched. However from the literature reviewed mostly the practices have been studied in relation to other contexts and not in the context of supply chain performance. For example Hung, Fei, Chien and Yu (2009) studied the relationship among supplier capability, partnership and competitive advantage in Taiwan's semiconductor industry where a strong relationship was established. On the other hand Mehrdad & Mohammad (2011) studied the effect of

Customer Relationship Management (CRM) on achieving competitive advantage of Manufacturing Tractor.

Additionally most of the studies have being done in developed economies for instance Taiwan, Spain, and USA. Supply chain performance measurement is a very important tool of measuring organizational performance. There exists a lot of literature on supply chain performance measurement especially in the developed economies but very few in Kenya specifically the one done by Margaret (2013). Her study used sales maximization to measure supply chain performance. The SCOR measurement model seems to have been used partially in a number of studies eliminating important variables (ilkka, 2011). However they have served as very good examples on measurement of supply chain performance that should be emulated.

2.6   Research Gaps

The relevant literature review indicates the existence very few empirical studies in the area of business value chain management practices. Pekka *et al.,* (2010) carried out a research study whose purpose was to identify critical factors for effective business value chains in the electrical and electronic industries in Hong Kong. Kongkiti (2011) carried out another study whose purpose was to describe key factors in sustaining effective business value chains for companies operating in the electronic industry in Hong Kong. These studies can be replicated to the Kenyan context.

Margaret (2013) explored on value chain management practices adopted by large manufacturing firms in Nairobi and also sought to determine the relationship between these practices and supply chain performance. However she studied the factors that affect the linkages in the value chain namely procuring and sourcing, operation excellence and supply chain design network and distribution. These factors according to literature (Hardacre & Collins, 2008; Shweitzer, et al., 2008; Martin, 2005) affect the industry value

chain. Factors affecting internal business value chain were not studied thus creating a research gap that this study sought to fill.

Other studies focusing on Value chain analysis have been documented (Odero, 2006; Musau, 2003; Kirui, 2001; Mulaki, 2000). However, the studies have focused on different contexts. For instance Odero (2006) looked at the Value Chain and competitive advantage in the corporate banking industry in Kenya in which he explored the competitive factors in the banks value chain that brought out an advantage. Musau (2003) explores practices by large manufacturing firms in Kenya. Otieno (2010) studied factors influencing value chain activities in Telkom Kenya. Awino *et al*., (2012) carried out a study on the effectiveness of the value chain strategy in the selected producer owned dairy groups that focused more on the value chain activities in as far as the producer owned dairy groups are concerned.

It's important to note that this studies concentrated on the proportional contribution in overall cost of each value addition activity in the various stages in the supply chain. Additionally the studies done so far have focused on different industries, which have different contexts that presented unique characteristics. Finally there is no known study on internal business value chain practices and their influence on supply chain performance in Kenya's manufacturing sector. It is for this purpose that large manufacturing firms become critical for study in order to bridge this knowledge gap. A table showing the gaps in empirical review is provided (Appendix vii).

2.7 Summary of Literature reviewed

From the literature reviewed and the theories explained it was noted that business value chain practices are of great importance to performance of organizations in different areas. Five theories each regarding each variable were discussed. The theories emphasized on the variables and the fact that they operate under certain principles as advocated in the theories that managers should be put in place. The principle ensures that the practice is yielding results for the organization. In this study agency theory instigated the SRM practices,

Porter's value chain theory instigated the PM practices, relationship marketing theory instigated the CRM practices, and ensemble theory instigated the IT support practices while the network theory instigated the supply chain performance. This study is anchored on the porters value chain theory since all the variables in the study have been derived from it.

Empirical literature discusses the studies that have been conducted regarding variables of the study. Section 2.4 shows that a number of studies have been carried out on specific variables. It is clear that organizations put a lot of importance on the specific areas to manage their organizations. The impacts of these practices have been measured in regard to other areas of performance in organizations but not supply chain performance hence the importance of this study. From the literature reviewed the conceptual framework was developed which was later tested and results presented in chapter four of this study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the methodological approach that was used to provide answers to the research hypotheses. The main focus of the chapter was collection of the data that concerned the variables under study and the analysis of the same to verify whether the hypotheses are true or not. In particular this section discussed the research philosophy, research design, population of the study, sampling and sampling techniques, data collection instruments, data collection procedures, pilot study, data validity and reliability of the instrument and data analysis.

3.2 Research design

This study adopted a cross-sectional and descriptive survey research designs. Cross-sectional studies are designed to collect data once over the same period of time, analyzed then reported while descriptive survey design is designed to collect primary or secondary data from a sample with a view of analyzing it statistically and generalizing the results to a population (Cooper & Schindler, 2011). Using Cross-sectional design, the researcher was able to obtain research data over the same period of time. Descriptive research design is the process of collecting data in order to test hypotheses or to answer questions concerning the current status of the subjects in the study. It determines and reports the way things are. It attempts to describe such things as possible behavior, attitudes, values and characteristics. Stephen, Titus, Tom, Julius and Muathe (2012) used cross-sectional research design and descriptive survey design in their study on environmental factors that influence supply chain management implementation in the manufacturing industries in Kenya.

3.2.1 Research Philosophy

Research philosophy relates to foundation of knowledge upon which important assumptions and predispositions of a study are based. A research philosophy is a belief about the way in which data should be gathered, analyzed and used. The two main philosophical frameworks that guide any scientific research are positivism and intepretivism (Collins & Hussey, 2014). Positivist philosophy premises that knowledge is based on facts and that no abstractions or subjective status of individuals is considered. Positivism thus derives a quantitative perspective which holds that there is an objective reality that can be expressed numerically, with explanatory and predictive power (Neuman, 2011).

Under this paradigm, knowledge is valid only if it is based on values of reason and facts, gathered through direct observations and experience, measured empirically using quantitative methods and statistical analysis. Also theoretical models can be developed that are generalizable to explain cause and effect relationships (Saunders, Lewis & Thornhill, 2015). On the other hand intepretivism is underpinned by the belief that social reality is not objective but highly subjective because it is shaped by the researcher's perceptions, it is any type of research where the findings are not derived from statistical analysis (Collins & Hussey, 2014).

These study variables are based on facts derived from empirical literature review and theoretical premises discussed in chapter two. Its results are quantitative and explain the relationship between the variables in a quantitative manner. The respondents to the questionnaire were supply chain managers whose knowledge on the variables under study was based on facts gathered through direct observations and experience. This was measured empirically using quantitative methods and statistical analysis. The study results supported the Porter's value chain theory from which all the variables of the study were based. While SRM practices, PM practices CRM practices were observed to contribute

more to supply chain performance; IT practices were observed to support the business model of the firms. The study concluded that a firm must have an ERP software that is designed to support supply chain functions for IT to be effective towards achievement of supply chain goals. Thus the philosophical foundation of this study was positivism where scientific processes were followed in hypothesizing the relationship between the variables then deducing the observations from the data collected to determine the truth or falsify the hypotheses of the study.

3.3   Population of the study

Cooper and Schindler, (2011) define population as the total collection of all the elements about which the study wishes to make some inference. Kenya association of manufacturers (KAM) membership constitutes of manufacturing value-add industries in Kenya and comprises of small, medium and large enterprises (KAM, 2014). The size is measured by their total assets. Large-sized company are the companies with total assets above Kshs100 million, medium-sized have Kshs 40 million to Kshs 100 million by total assets; whereas small companies are those companies having assets under Kshs 40 million.

 Over 80 per cent of these are based in Nairobi, while the rest are located in other major towns and regions, including Coast, Nyanza/Western provinces, Nakuru, Eldoret, Athi River, Nyeri and Thika. According to (KAM, 2014), there are a total of 499 large scale manufacturing companies operating in Nairobi where 80% of their members are based. The large scale manufacturing companies were identified for this study because as Awino (2011) indicated, these firms are likely to exhibit elaborate SCM philosophy and make use of supply chain best practices compared to their small or medium sized counterparts. The 499 large scale manufacturing companies represented the total population for this study. A sampling frame containing a list of all the names of the large manufacturing firms in Kenya is presented in appendix 111.

3.4 Sampling technique and Sample size

A sample is the actual number of elements to be physically reached by the researcher to extract data. The manufacturing sector is composes of different subsectors classified according to their end products. Therefore stratified random sampling method was applied to come up with the sample size. This according to Cooper and Schindler (2011) ensures that each manufacturing subsector is represented. According to William, Barry &Mitch (2013) at least 10 percent of the target population is important for the study. The study used 40 percent of the population which is way above the 10 percent. This gave a sample size of 200 large manufacturing firms as shown in table 3.1. Supply chain managers or the procurement manages were considered key informants and respondents to the questionnaire due to their knowledge and skills in the key areas of the study and therefore gave reliable information. Consequently the unit of analysis was 200 large manufacturing firms while the unit of observation was 200 SC managers.

Table 3.1: Sampling Table

Sector	No. of Firms	Unit of analysis Sample size (40%)
Building	20	8
Chemical	70	28
Energy	34	12
food	71	28
paper	63	24
Plastics	68	28
Textile	35	16
Wood Products	17	8
Pharmaceutical	21	8
Metal and Allied	66	28
Leather	7	4
Motor	27	12
Total	499	200

3.5 Data Collection Instruments

Data collection instrument refers to the tools used for collecting data and how those tools are developed. A questionnaire is a research instrument consisting of a series of questions and prompts responses for the purpose of gathering information from respondents (William *et al.*, 2013). Primary data was collected using a self-administered questionnaire (appendix I). The questionnaire explored the selected respondents observations, views and opinions on the variables under study. This method was preferred because of the technical nature of items in the scale and the need to ensure reliability of responses from the respondents.

The questionnaire was divided into three sections: Section A covered demographic characteristics of the organizations. Section B had questions on internal business value chain practices and Section C asked questions on supply chain performance. Measures were mainly adopted from previous studies and were organized according to the research questions and specific objectives. For example supply chain performance measures were adopted from the SCOR metric score card template and the bench mark scores were obtained from Performance Measurement Group (PMG) as recommended by Peter (2010).

3.5.1 Data Collection Procedures

Data collection procedure was started by obtaining a permit from the ministry of education science and technology. Primary data was collected through the administration of the questionnaires to the relevant managers. Field (2013) describes primary data, as that which is collected afresh and for the first time and this happens to the original character. Questionnaires were administered by trained research assistants. Two hundred questionnaires were distributed to manufacturing entities as per the sampling frame. The filled questionnaires were picked at different times depending on the availability of the supply chain manager. Secondary data was collected from the organization's finance managers and some supply chain managers. This included copies of delivery advice notes, costs and revenue, inventory documents and profitability income after cost which involves

gross margin, operating income, net operating income, economic profit, return on assets, return on sales, return on investment, earnings per share, and stock price percent change. Secondary data was used to validate the primary data collected, while at the same time generating additional information for the study. However this data was not readily available in many organizations because most respondent referred to it as confidential information. Data was then cleaned, sorted and collated after which it was entered into the computer for analysis and subsequent presentation.

3.6   Pilot study

The researcher conducted a pilot test with 14 manufacturing entities based in Thika town to determine the validity and reliability of the data collection instrument. These firms were not part of the final sample. According to William *et*.,*al* (2013), 1 to 1.5 % of the population sample is adequate for pilot study. Hair (2011) states that the purpose of a pilot study is not so much to test research hypothesis, but rather to test protocols, data collection instruments, sample recruitment strategies and other aspects of the study in preparation for a larger study.

3.6.1   Validity tests

Validity can be described as the extent to which the instrument measures what it purports to measure (Melanie & Erikka, 2013). It concerns the accuracy and meaningfulness of inferences which are based on the research results (Alan & Emma, 2015). To ensure criterion or face validity the researcher critically examined each question against study objectives and how they were answered by the supply chain managers/procurement managers and necessary adjustments were made. Instruments developed for other similar studies were also used for comparison purposes.

To ensure content validity the researcher relied on opinion of supply chain managers/procurement managers. Using their knowledge in the subject matter, they

interpreted the questions and statements in the questionnaire. The pilot test also revealed that structured questions for the dependent variable were discouraging to the informants. The questionnaire was therefore revised based on the feedback from the pilot test to eliminate ambiguities and inadequate wording in the research instrument.

3.6.2   Reliability tests

Reliability is the extent to which a questionnaire tests observation or any measurement procedure and produces the same results. That is, the stability or consistency of scores over time or across raters (Malhotara, 2014). Two methods of testing reliability were used in this study: test for equivalence and internal consistency test. Test of equivalence was done through questionnaire pretesting with supply chain managers in Thika town and were not participating in the study. Internal consistency of the research instrument was measured using Cronbach's Alpha. Cronbach's Alpha is a reliability coefficient that indicates how well items in a set are positively correlated to one another (Sekaran, 2013). George & Malley (2010) specified the range of Cronbach's Alpha (α) of 0.7 to 0.8 is acceptable. For this study an alpha coefficient of 0.7 and above was considered reliable. Reliability was further considered through drawing literature in already tested researches.

3.7   Diagnostic Tests

Krisman (2011) indicated that in order to have a regression model and estimates that mean something we should be sure that the assumptions are reasonable and that the sample data appear to be sampled from a population that meets the assumption. For this purpose Field (2013) recommended that normality, linearity and heterescedasticity should be conducted when checking for relationship between the independent and dependent variable. Other tests conducted for this study were are confirmatory factor analysis and multicollinearity.

3.7.1   Normality test

A test for outliers within the constructs was done and the ones identified were dropped. Outliers are cases or observations showing characteristics or values that are markedly

different from the majority of cases in a data set and should be dropped (Kline, 2005; Hair, 2011). This is because they distort the true relationship between variables, either by creating a correlation that should not exist or suppressing a correlation that should exist (Abbott & McKinney, 2013). To test for outliers Mahalanobis d-squared was used for multivariate testing on the dependent and independent variables where they produced reasonable box-plots.

After dropping the outliers Shapiro-Wilk test was done to test for normality of variables whereby if P-value is greater or equal to 0.05 the data is normal (Field, 2013) and if p value is less than or equal to 0.05 then the distribution is not normally distributed and was rejected on a significance level of 5 percent. A P value > 0.05 implied that the variable is sufficiently normally distributed on a significance level of 5% and is fit for further statistical analysis and will not result in inflated statistics and underestimated standard errors (Field, 2013).

3.7.2   Linearity Test

The linear relationship of the independent variables to the dependent variables was tested using Pearson's correlation coefficient between the supply chain performance and each of the hypothesized explanatory variables as proposed by Fount, (2011). Correlation coefficient shows the strength as well as the direction of the linear relationship. A negative correlation indicates an inverse relationship where an increase in one variable causes a decrease in the other, whereas a positive correlation indicates a direct influence, where an increase in one variable causes an increase in the other variable (Field, 2013).

3.7.3   Heteroscedasticity Test

Heteroscedasticity was tested using Breush-Pagan test as recommended by Melanie & Eriikka (2013). This tested the null hypothesis that the error term has constant variance versus the alternative, that the error term variances are not constant. This means that the error terms are multiplicative function of one or more variables. P value ≤ 0.05 would

imply there was heteroscedasticity (no constant variance in the error term) and would lead to rejection of null hypothesis at 5 percent level of significance. Large chi-square would indicate heteroscedasticity meaning the error term is not constant.

3.7.4 Confirmatory Factor Analysis

Factor analysis acts as a gauge of the substantive importance of a given variable to the factor and it is used to identify and remove hidden constructs or variable items that do not meet the objectives of the study and which may not be apparent from direct analysis (David & Geoff, 2011). Communalities were used to indicate the substantive importance of variable factors where a loading value of 0.7 as a rule of thumb is believed to be satisfactory (Timothy, 2015).

3.7.5   Multi-co linearity Test

Multi-co linearity was tested to establish the possibility of the predictor variables having some explanatory power over each other. Field (2013) suggests variance inflation factor (VIF) ≥10 indicate presence of multi-co linearity. Multi-co linearity creates a problem for multiple regressions models, given that as co linearity goes up, the standard error of coefficients also rises, making them less reliable.

3.8   Data analysis and presentation

Data was analyzed using descriptive and inferential statistics. Descriptive statistics were used because they enable presentation of data in a more meaningful way, which allows simpler interpretation of the data. A thorough understanding of descriptive statistics is essential for the appropriate and effective use of all normative and cause-and-effect statistical techniques, including hypothesis testing, correlation, and regression analysis. Unless descriptive statistics are fully grasped, data can be easily misunderstood and, thereby, misrepresented (Schindler, 2011). Descriptive statistics used were percentages, frequencies, means, and standard deviations. Inferential statistics techniques allowed the researcher to use the sample of 200 large manufacturing firms to make generalizations

about the entire population. Inferential statistics arise out of the fact that sampling naturally incurs sampling error and thus a sample is not expected to perfectly represent the population (Hair, 2011; Cooper & Schindler, 2011).

Based on the objectives of the study linear regression model was applied to generate a weighted estimation equation that was used to predict values (Hair, 2011; Cooper & Schindler, 2011). Simple linear regression technique was also used to quantify the relationship between the two continuous variables of this study (internal business value chain practices and supply chain performance). Additionally Multiple regression technique was used to test the statistical significance of various selected internal business value chain practices put together. It involved combining all predictor variables to form a composite index. Thus the researcher assessed the effect of multiple predictor variables on the dependent measure (Jackson, 2010). The goal of using the multiple regression technique was to find the best fitting and most parsimonious reasonable model to describe the relationship between supply chain performance and the selected set of internal business value chain practices.

To derive the composite index for the variables under study, the harmonic mean formula was used (Gupta, 2011).

$$Ci = \sum fiwi \div \sum fi$$

Where

C_i = Composite index for Variable

f = Total Number of Respondents

W_i = The Relative weight given to each component in a particular variable.

The adjusted coefficient of determination (R^2) was used to indicate the percentage of variability of the variables that was accounted for by the factors under analysis. This was followed by determination of standardization beta (β) coefficient which indicated the

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direction (+ or -) and the magnitude of the influence as well as compare the relative contribution of each independent variable on performance (Hair, 2011).

 Since statistical analysis software and most spreadsheets generate all required descriptive statistics, computer applications offered the best means of preparing the data for interpretation. Tables were used to summarize, organize and present the data collected and analyzed. This method was preferred because it condenses a large mass of data and brings out the distinct pattern in a data in a clear form. It also enables comparison to be made easily among classes of data (Freeman, 2012). In some cases graphs were preferred because they enable measure the extent of change in one variable when another variable changes by a certain amount. The results and discussions are provided in chapter four followed by conclusions and recommendations in chapter five.

3.8.1 Empirical model

Simple linear regression equation was used to model the relationship between the predictor variable for example SRM practices and the response variable which is supply chain performance. The equation of the regression line was given by:

y= a +bx

Where:

x= specific internal business value chain practice

y = supply chain performance

a = intercept. This is the point at which the regression line crosses the vertical (Y) axis. This gives the value of the supply chain performance (dependent variable) when the given IBVC practice (independent variable) is zero.

b = regression coefficient that showed the average change in the supply chain performance for a unit change in the IBVC practice.

Multiple linear regression equation was used to model the relationship between the all predictor variables put together and supply chain performance. The overall equation of the effect of all independent variables on supply chain performancewas:

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where,

Y: is the dependent variable – Supply chain Performance

β_0: is a constant coefficient

$\boldsymbol{\beta}_1$- $\boldsymbol{\beta}_4$ are the parameters to be estimated

X_1: SRM practices

X_2: PM practices

X_3: CRM practices

X_4: IT practices

ε: Error term

3.8.2   Operationalization and Measurement of Variables

The dependent variable in this study was supply chain performance while internal business value chain practices were the independent variables. Table 3.2 presents a description of the study variables and how they were operationalized.

Table 3.2: Operationalization and Measurement of variables

Variable	Nature	Operationalization	Measurement	Question No
SRM practices	Independent variable	-information sharing -supplier development -collaborative initiatives -supplier performance	Aggregated index of management judgment on 1-5 scale	5-7
PM practices	Independent variable	-control of processes -identification of core competences -cost drivers -quality assurance	Aggregated index of management judgment on 1-5 scale	9-11
CRM Practices	Independent variable	-customer interaction -Customer satisfaction -Customer expectations -consumer value	Aggregated index of management judgment on 1-5 scale	16-19
IT Practices	Independent variable	-Supply chain processes support -Order commitment process support -Distribution management support -Make process support	Aggregated index of management judgment on 1-5 scale	12-15
SC Performance	Dependent Variable	-Reliability -Responsiveness -Lead time -costs reduction	Aggregated index of management judgment on 1-5 scale	20

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1   Introduction

This chapter presents the findings and discussions thereof. It covers results of the response rate, pilot study results, diagnostic tests, bio data of the organizations that responded to the questionnaire, descriptive statistics on each variable of the study, hypothesis tests results and their interpretation to show extent to which internal business value chain practices affect supply chain performance of the manufacturing firms in Kenya, multiple regression results and finally the adopted model from the study.

4.2   Response rate

Out of the 200 questionnaires distributed, 142 were correctly filled and returned which represents a response rate of 72 percent. According to Kamel & Lloyd (2015) response rate of above 50 percent in business management research should be considered good. Therefore, the 72 percent response rate reported for this study formed an acceptable basis for drawing conclusions. However, the non-response rate of 28 percent could introduce a bias in estimates and also contribute to an increase in the total variance of estimates since the sample size observed was reduced from that originally sought. To correct the bias, the sample weighting procedure was used to assign a weighting factor to every asked person by which the corresponding data was multiplied (Chris & Ben, 2012).This ensured that the regression coefficients would be estimated consistently since the effect of missing data was eliminated. Data was coded and then cleaned through extensive checks for consistency. Secondary data especially published financial statements were particularly useful for validating the managers responses on the questionnaires. Data analysis was conducted using a set of descriptive and inferential statistics in statistical package of social sciences (SPSS) version 11.5 software.

4.3   Pilot Study Results

4.3.1   Validity tests

To ensure criterion or face validity the researcher critically examined each question against study objectives and how they were answered by the supply chain managers/procurement managers. The pilot test also revealed that indeed the questionnaire had relevant questions and measured what the objectives intended. The pilot test also revealed that structured questions for the dependent variable were discouraging to the informants. The questionnaire was therefore revised based on the feedback from the pilot test to eliminate ambiguities and inadequate wording in the research instrument.

4.3.2   Reliability tests

Reliability estimates show the amount of measurement error in a test. Put simply, this interpretation of reliability is the correlation of test with itself (Mohsen & Reg, 2011). Table 4.1 shows that the Cronbach's Alpha Score for supplier Relationship Management was 0.711, Process Management 0.794, Customer Relationship Management 0.775, Information Technology 0.846 and Supply Chain Performance as 0.825 showing that all variables were indeed reliable as they attained the recommended threshold of Alpha 0.

Table 4.1: Reliability Test results for the research instrument

Construct Measure	Cronbach's Alpha Score	Number of Questionnaire Items Included	Conclusion
SRM practices	0.711	6	Reliable
PM practices	0.794	4	Reliable
CRM practices	0.775	4	Reliable
IT support practices	0.846	6	Reliable
SC Performance	0.825	9	Reliable

4.3.3   Multicollinearity

Test for multicollinearity among study variables was conducted using Tolerance and Variance Inflation Factor (VIF). Variance Inflation Factor was checked for evidence of multicollinearity where their numerical values were all well below the cut-off value of 10 as suggested by Neter, Kutner, Wasserman & Nachtsheim (1996). The standard issue in multicollinearity is that, the standard errors and thus the variances of the estimated coefficients are inflated when multicollinearity exists (Simon, 2004).

Table 4.2 shows VIF for the independent variables in the study: Supplier Relationship Management, 2.039; Process Management, 1.946; Information Technology, 2.036 and for Customer Relationship Management it was 1.771. Porter and Gujarat (2010), view that as a rule of the thumb if VIF of independent variables exceeds 10, that variable is collinear. Based on this there was no collinearity among the independent variables.

Table 4.2: Multicollinearity Test results for the Study Variables

Variables	Collinearity Statistics	
	Tolerance	VIF
Supplier Relationship Management	0.491	2.039
Process Management	0.514	1.946
Information Technology	0.491	2.036
Customer Relationship Management	0.565	1.771

4.3.4   Confirmatory Factor Analysis

Communalities were used to indicate the substantive importance of variable factors where a loading value of 0.7 as a rule of thumb is believed to be satisfactory but due to the seemingly difficulties of meeting the 0.7 criterion a loading of up to 0.4 level is acceptable (Rahim & Magna, 2005). Appendix IV shows how much of the variance in the variables accounted for by the extracted factor; in other words, it shows the variations from the

expected initial value which is one (Rahim & Magner, 2005). All the factors exceeded the criterion of up to 0.7 and thus no variable was removed.

4.3.5 Correlations of the Study Variables

Correlation is often used to explore the relationship among a group of variables (Pallant, 2010), in turn helping in testing for multicollinearity. Absence of multicollinearity allows the study to utilize all the independent variables. Table 4.3 Shows that the lowest correlation in this study was between information technology and supply chain performance ($r = 0.456$, $p<0.01$). The highest correlation was between Process Management practices and supplier relationship practices ($r = 0.693$, $p<0.01$). Since the correlation values are not close to 1 or -1 is an indication that the factors are sufficiently different measures of separate variables (Farndale, Hope & Kelliher, 2010).

Table 4.3: Correlation of the Study Variables

	SRM	PM	IT	CRM	SCP
SRM	1				
PM	.693[**]	1			
IT	.456[**]	.646[**]	1		
CRM	.590[**]	.517[**]	.533[**]	1	
SCP	.432[**]	.365[**]	.369[**]	.309[**]	1
N =98	** Correlation is significant at the 0.01 level (2-tailed).				

4.4   Demographic results

4.4.1   Years of operation

The study results revealed that 74.2 percent of the manufacturing firms in Kenya have been in operation for more than 10 years (Table 1, appendix V). Only 8.1 percent was established within a period of the last five years. This means that most firms in the study were not new and therefore understand the dynamics of operations in the Kenyan manufacturing sector.

4.4.2 Size of the manufacturing firms

The study sought to establish the size of the manufacturing firms using two dimensions, namely, number of employees and the total assets of the manufacturing firms (see table 2 in the appendix V).When size was measured in terms of employees less than 5 percent had less than 100 employees while 70 percent had between 100-500 employees. In terms of the total assets (Kenya shillings), the study revealed that 10 percent of the large manufacturing firms in Kenya have a total assets base of between 30 million and 40 million while another 30 percent had an asset base of between 41 million to   100 million while 60 percent has an asset base of above 100million. This study considered the large firms in terms of size of assets base compared to others in their specific sector (See table 3 in appendix V).The study results in the table 4.4 reveals that 41.7 percent manufacturing companies operate locally while followed by 38.6 percent operate within the east Africa region while only 19.7 percent operate globally.

4.4.3 Scope of operation

Table 4.4: Scope of Operation of Manufacturing Firms in Kenya.

	Frequency	Percent
Locally (Within Kenya)	55	41.7
Regional (Within East Africa)	51	38.6
Globally (Africa and beyond)	36	19.7
Total	142	100.0

4.5   Descriptive statistics

4.5.1   Supplier relationship management practices and supply chain performance

The first objective of this study sought to establish the effect of SRM practices on supply chain performance of large manufacturing firms in Kenya. In order to determine the

supplier practices in large manufacturing firms the study assessed documents that support the existence of supplier relationships represents the results of the suppliers' document that exists in the large manufacturing firms. This results show that manufacturing firms maintain supplier documents of different types (Refer Table 1, Appendix VI). The most common supplier record was supplier performance records (15 %), followed by a combination of minutes for supplier meetings, supplier performance records and supplier visit files (14%). In almost all the combinations supplier performance records and minutes for supplier meetings are repeated.

This findings support Kitheka, Mulwa & Wycliffe (2013) which revealed that performance measurement, supplier audits, visits, supplier development and supplier integration are the most used supplier quality management practices. The high mode of supplier meeting minutes indicate that manufacturing organizations held regular meetings with their suppliers for different reasons which signifies supplier integration and information sharing. To measure the emphasis and the importance firms gave to supplier visits and communication forums the study sought to find out the approximate budget set aside for these activities from 2010 to 2014.

The results shown in figure 4.1 indicate that the level of investments increases with time whereby in 2010 manufacturing organizations invested 2.11 million in 2011, 4.89 million; in 2012, 5.08 million; in 2013 , 5.29 million and in 2014 , 5.26 million. This results support the findings of Mwale (2014) that indicate that manufacturing firms in Kenya are implementing supplier relationship management as a best practice in supply chain management. Management of the manufacturing organizations in Kenya seems to support the supplier relationships practices though budgetary allocation.
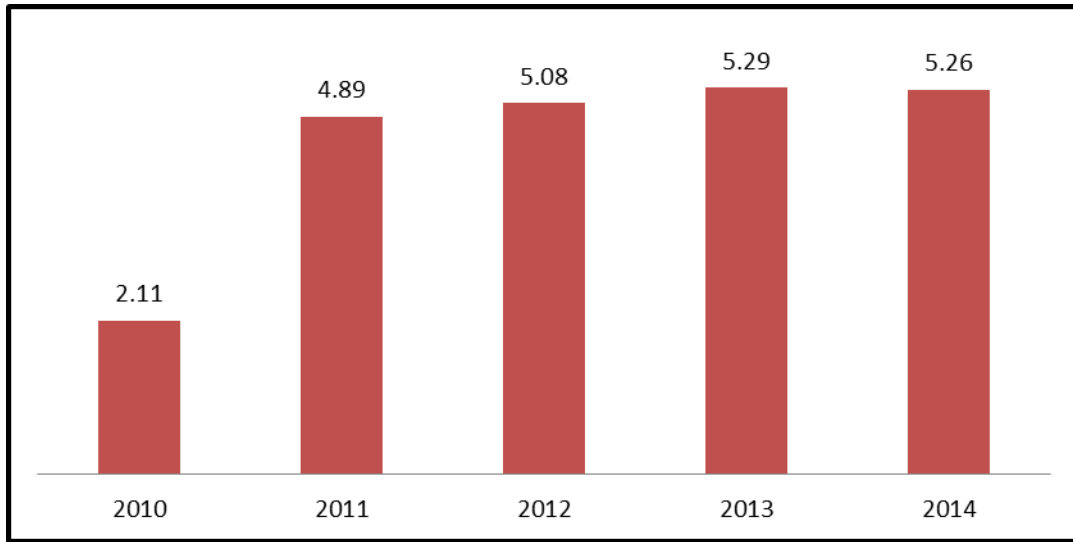
Fig 4.1: Supplier visits and communication Budget (2010-2014) in Ksh. (000,000')

The study sought to find out what supplier practices were in place is the manufacturing firms to enhance good supplier relations. Table 2, Appendix VI presents the practices that different firms employ to enhance good supplier relationships. The ranking of practices put in place to enhance good supplier relationships based on their frequencies (mode) the most widely used to least widely used was as follows: payment on time, communication, holding meetings, standard quality, visiting suppliers, good management, after sales services, respect suppliers, listen to grievances, improved technology, evaluate suppliers, regular updates for new products, certification, trainings in that order.

This results supports the argument advanced by Raskovic & Makovec, (2012) that buyer-supplier relationship competitiveness is mostly driven by interpersonal trust and joint problem solving (both relational determinants). From the results the supply chain managers had paid equal attention to both relational dimensions and transactional dimensions in their buyer-supplier relationships. However it appears from this study that manufacturing firms' managers have not given much attention to joint conflict resolution which rates at 1.9%.

This conclusion is supported by lack of supplier resolution complaints records. In this regard Raskovic & Makovec, (2012) recommended that joint problem solving should be seen as the second key managerial tool which drives not only buyer-supplier relationship competitiveness, but also facilitates trust as well.

The respondents were required to indicate the practices they employ in their organizations in relation to supplier relationship management in a scale of 1 to 5 arranged in order of best practice. Table 3, Appendix VI shows the overall aggregate mean score for this section stands at 3.5288 and a standard deviation of 0.8028. This implies that on average the supply chain managers indicated that they employed good supplier relationship management practices. The statement on how are serious conflicts involving supplier resolved in your organization had the highest mean of 4.14 and a standard deviation of 1.376. This means that most organizations use mediations to resolve serious conflicts with their suppliers.

When asked how they dealt with suppliers who did not adhere to quality levels in your organization the mean stands at 3.32 and a standard deviation of 0.905. This means that most organizations warned their suppliers while the best practice would be to train them on quality issues. When asked at what stage the organizations involved their suppliers the mean stood at 3.79 and a standard deviation of 1.433. This implies that most organizations involved them at the middle stage of new product development. The best practice would be involving them at all stages of new product development. On average the organizations indicated that they had some suppliers on supplier development program me where the mean stood at 2.5 and a standard deviation of 1.175. This means that most organizations has approximately 21-40% suppliers in the supplier development program me which is a good position is given that supplier development programmes are expensive since they require the organizations to use their resources to develop their suppliers. A high percentage therefore is not realistically achievable.

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The results also indicate that most organizations measure supplier performance and communicate the results only when quality problems with suppliers arose (mean =3.78, std deviation=1.358) while the best practice would be at all stages of contract implementation. When asked how the organization maintained data and communication flow the results indicated a mean of 3.64 and a standard deviation of 0.897. This implied that most organizations used e-mails to communicate while the best practice in supply chain would be to have communication systems connectivity, for example an EDI system.

Although Margaret (2013) found out that different firm adopt practices that best suit their sector in order to enhance supply chain performance the results of this study clearly indicate that large manufacturing firms in Kenya have not yet embraced best practices in SRM. These results are in agreement with the findings of Awino (2012) who noted that large manufacturing companies have not been able to formulate the right strategies required to achieve their objectives in Supply Chain Management (SCM).

4.5.2 Descriptive statistics on process management practices

To assess the level of management support in PM the study sought to find out the approximate budget set aside for process management and improvement from 2010 to 2014 presented in figure 4.2.The results indicate that manufacturing firms have over the years increased their budgets towards process improvements. The graph shows that the highest investment was done in 2014 with a mean of 150 million while the lowest was in 2010 with a mean of 20.937 million. This means that organizational management in the sector steadily improves their manufacturing technologies and processes.

This results are in agreements with the view of McCormack *et al.,* 2010 that the changing economic environment has led to an increasing interest in improving organizational business processes to enhance performance.
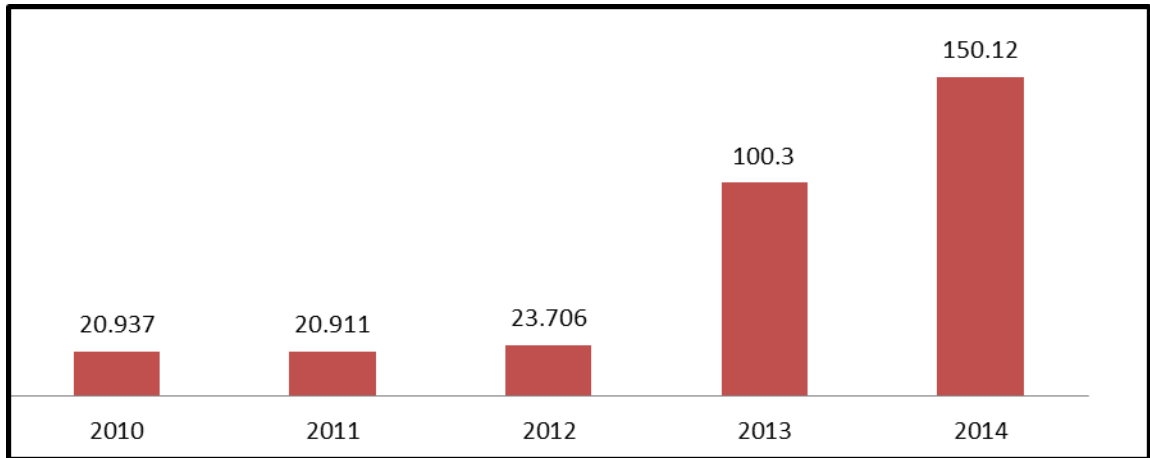
Figure 4.2: Process improvement and management Budget (2010-2014) Ksh. (000,000')

The study also sought to find out the practices the manufacturing firms put in place to ensure effective value addition processes. Table 4.5 shows the responses given as quality standards 26.4 percent, training 16.7 percent, improved technology 15.3 percent, certification 9.7 percent, supervision 9.7 percent, research 8.3 percent, having a system that addresses quality issues 4.2 percent, market survey 4.2 percent, scheduling 2.8 percent, eliminate waste 1.4 percent, clean machine 1.4 percent in that order. These results are in agreement with the views of Richard (2012) that process alignment and people involvement are two key concepts for successful implementation of Business Process Management.

The implications of this results to for managers is that, when an organization seeks to sustain their competitive advantage, process alignment which includes executive Commitment and employee empowerment, should be considered. The findings of this study shows that management of large Manufacturing firms in Kenya seem to have embraced this approach.

Table 4.5: Practices towards ensuring effective value addition.

Practice	Frequency
Quality standards	38
Training	24
Improved technology	21
Certification	14
Supervision	14
Research	11
Having a system	6
Market survey	6
Scheduling	4
Eliminate waste	2
Clean machine	2
Total	**142**

The respondents were required to indicate the practices they employ in their organizations in relation to process management in a scale of 1 to 5 arranged in order of best practice. Table 4, Appendix VI shows that overall aggregate mean for this section stands at 3.6217 and a standard deviation of 0.6352. This indicates that the respondents rated their practices in process management as above average. The results indicate that the management of the organizations makes decisions regarding processes throughout the entire operations in the organization with a mean of 3.31 and a standard deviation = 0.866. The results also show that the main reason for documenting core processes in the organization was to make work easier at a mean of 3.76 and a standard deviation of 1.008.

Results also show that the performance of the organization in managing data flow through the manufacturing process is average at a mean of 3.84 and a standard deviation of 0.950. The respondents regarded real time visibility between manufacturing operations and customer orders as average with a mean of 3.58 and a standard deviation of 0.909. Also they show that quality testing and adherence of the manufacturing process is mostly done at the beginning of the process with a mean of 3.65and a standard deviation 1.609.

This results negates the views of Ponsignon., *et al*(2013) whose findings suggested that 'remove non-value-adding tasks' and 're-sequence tasks' can be described as foundational principles of process improvement and that they are universally applicable. In the Kenyan large manufacturing firms set up most PM practices are driven by motives of making work easier or for certification purposes as opposed to identification of cost drivers. However Gautam., *et al*(2004) observed that a firm may excel in some of its business processes, be only average in others, and be below average in still others. This is the scenario that is represented by the large manufacturing firms in Kenya. For instance most respondents indicated that management is the one that makes decisions regarding processes throughout the entire operations. While this may not necessarily be the best practice this findings are in agreement with Richard (2012) research that provided empirical evidence that getting strategic objectives aligned with business processes, demonstrate executive commitment and empowers employee. The implications for manager in this research were that when an organization seeks to sustain their competitive advantage, the process alignment which includes executive Commitment and employee empowerment, should be considered.

4.5.3   Descriptive statistics on customer relationship management practices

The study sought to find out the approximate budget put aside to cater for customer surveys from 2010 to 2014.Figure 4.3shows the approximate budget aside for customer surveys from 2010 to 2014. The statistics show fluctuations in budget allocation in CRM practices from one year to another. In 2010 the mean budget set aside was Ksh 1,350,000; in 2011 the mean budget ranged ksh 1,300,000; in 2012 it was Ksh 1,435,000; in 2013 it was 408,571 and in 2014 the mean was Ksh. 638,750. This statistics show that large manufacturing firms in Kenya invest in CRM though not in high levels signifying low levels of CRM implementation.

This is in agreement with findings studies (Foss, Stone & Ekinci, 2008; Petty, 2008) that despite the intense growth in the acquisition of CRM systems in the last 10 years and

widely accepted conceptual underpinnings of CRM strategy, critics point to the high failure rate of CRM implementations as evidenced by commercial market research studies. For instance, in one survey of senior executives across five continents (North and South America, Europe, Asia and Africa). Bain and Company found that the use of CRM tools had increased from 35 to 78 percent between the years 2000 and 2002, but satisfaction with the performance of CRM was below 50 percent (Ang & Buttle, 2006). Empirical evidence indicates that it is always the case that CRM implementation leads to improved performance. For instance according to Jain *et al.,* (2007), 60-70 percent of CRM programs have resulted in either losses or no bottom line improvement in company performance.

Tim *et al.,* (2012)   warns that an over-emphasis on customer intimacy to the exclusion of operational efficiency and analytic orientations actually diminishes performance. This kind of conclusion may lead to management's reluctance in the implementation of CRM program thus low investment levels in CRM programs and software.
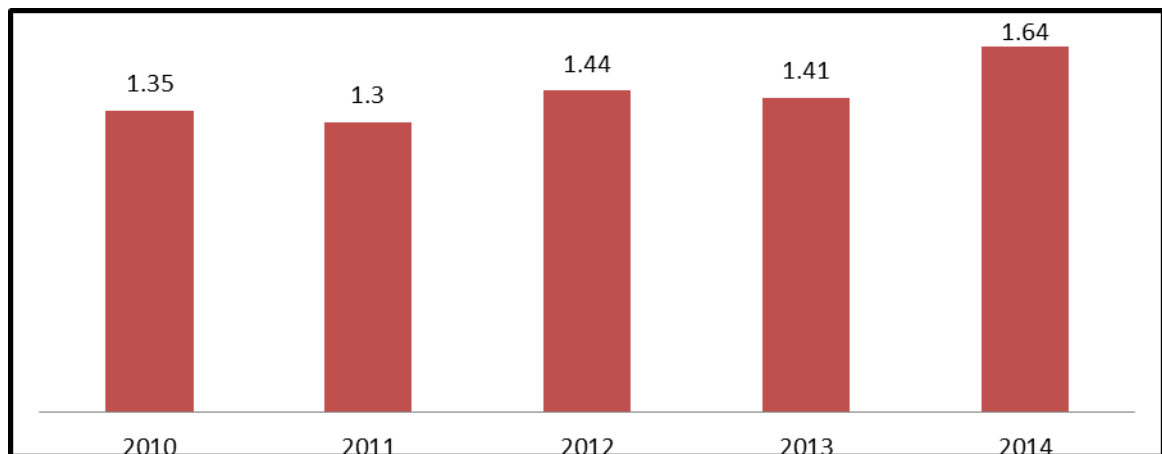
Figure 4.3: Customer surveys budget (2010-2014) in Ksh. (000,000')

Also the study sought to find out the methods that organizations use in order to get constant communication and feedback from customers. Manufacturing firms use different

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methods to ensure effective communication with customer. Table 5, Appendix VI shows that firms use a combination of the methods provided to effectively reach their customers as follows : Call centers, 33.3 percent; Customer care desks, 24.0 percent; Exhibitions, 21.7 percent; Demonstrations on new product use, 10.1 percent Customer suggestion boxes, 5.4 percent; Membership clubs, 3.1 percent; Toll free telephones, 1.6 percent and personal sales representative 0.08 percent.

 From this statistics it can be concluded that large manufacturing firms in Kenya actually maintain some level of communication flow with their customers. These results seem to agree with the findings of Thuo (2011) that the most common practices focus on customer relationships, customer information access and customer contact touch-points. On the other hand, CRM practices that are moderately implemented are maintenance of customer databases, competitor focus and customer information analysis. These results reveal the need for large manufacturing firms CRM practices to move beyond the mere adoption of CRM practices philosophy to actual implementation.

The study also sought to   find out the best practices that organizations put in place to enhance effective CRM. Table 6, Appendix VI presents results on the best practices firms have put in place to enhance effective CRM. The most organizations prioritized good customer care 19%; after sale services 13 %; and customer surveys 11%; using a system 8% ; organizations use a combination of practices ;research on challenges 8% ; quality products 8%; ISO 9000 certification 6%. A few organizations indicated that they use a combination of several practices for example research on challenges, good customer care and ISO 9000 certification.

These results are in harmony with the findings of Mehrdad & Mohammad (2011) that the ideal positions of variables in the given company from the managers' perspectives were follows: meeting customer's complaints, attracting and protecting customers being faithful, improving and the relations with the customers and understanding and separating of the

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customers. This that results indicates that manufacturing firms have initiatives towards implementation of CRM practices and most importantly the CRM system. Table 7, Appendix VI shows descriptive statistics on customer relationship management practices in large manufacturing firms in Kenya. Results show that the aggregate mean score for this section was 3.5858 and a standard deviation of 0.81804.

These results imply that customer relationship management practices that relate to value chain management are above average. The results are as follows: frequency of interaction with customers to set reliability, responsiveness, and other standards mean stood at 3.61 and a standard deviation of 1.358 ; customer complaints handling to ensure resolution mean stood at 3.56 and a standard deviation of 1.019; effectiveness of customer value proposition statement mean was 3.77 and a standard deviation of 1.229; frequency of research to establish customers changing needs mean was 3.89 and a standard deviation of 1.323; frequency of measuring and evaluating customer satisfaction mean was 3.91 and a standard deviation of 1.299 and finally the approximate budget to cater for customer surveys mean stood at 2.63 and a standard deviation of 1.164 (Appendix VI).These results are in agreement with Mehrdad & Mohammad (2011) that the ideal positions of variables in the given company from the managers' perspectives were follows: meeting customer's complaints, attracting and protecting customers being faithful, improving and the relations with the customers and understanding and separating of the customers as earlier mentioned.

4.5.4 Descriptive statistics on Information technology management support practices

In order to find out executive's level of commitment in IT that supports business value chain the study sought to find out the budget allocated to it. Figure 4.4 shows the approximate budget aside for IT support from 2010 to 2014. Statistics indicates that the budget allocated to IT as a value chain support management activity has been steadily increasing. In 2010 the mean budget set aside was Ksh 565,000, in 2011, Ksh 1,285,000; in

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2012, Ksh 985,000; in 2013, Ksh 707,500 and in 2014 it was Ksh 1,272,308. This statistics shows that large manufacturing firms in Kenya have made low investments with a mean score of ksh 962,962 in IT support for supply chain functioning. The subject companies are observed to be very poor in their information system infrastructure related to the supply chain activities. They have a slightly flexible software program that is probably weak in providing results and track social network streams.

This results are in agreement with Ramayah, *et al.,* (2008) who found out that IT tools were not highly used in Malysian manufacturing industry as it is the case in Kenyan manufacturing industry. This is because structured and standardized routines of IT tools are unable to cater for business cases that require more flexible ways of doing business therefore human intervention is still required for flexibility. Also Tomi (2014) found out that higher level of information systems support was associated with lower logistics costs, whereas the connection with financial performance was negative. At the same time, they warn about relying too heavily on the technological capabilities of IT systems used to manage the supply chain. These may be the reasons as to why large manufacturing firms in Kenya are hesitant in investing in IT infrastructure.
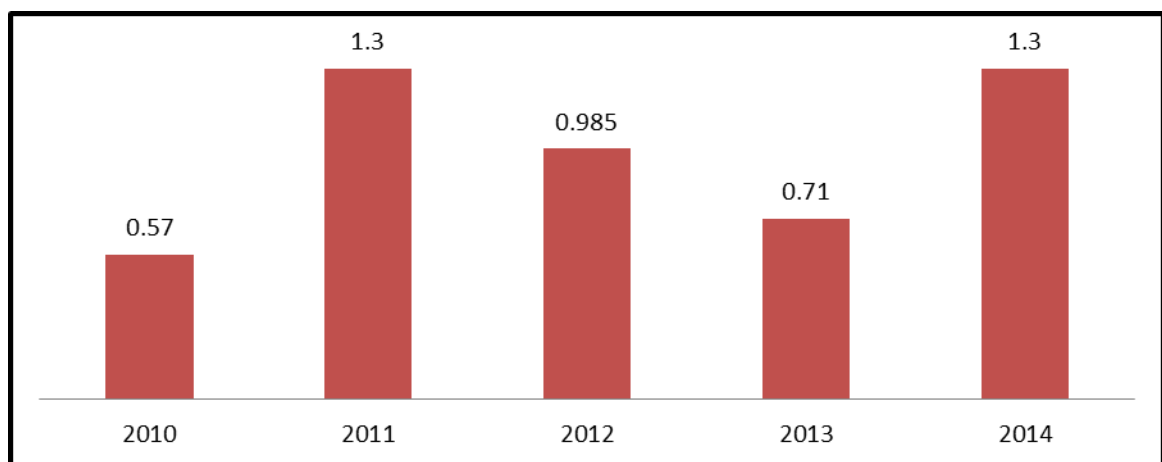
Figure 4.4: IT support budget (2010-2014) in millions (Kenya shillings)

In order to find out executive's level of commitment in IT that supports business value chain the study sought to find out the educational level of IT professionals in supply chain functions. The table 4.6 indicates that most firms have engaged IT professionals who are trained in supply chain processes as follows: Degree 48.8 percent, Diploma 35.7 percent, and certificate 8.5 percent and on the job training 5.4 percent. This indicates that most organizations consider employing IT professionals who have basic knowledge in IT may be to avoid high investments in IT infrastructure as already discussed. In relation to this the study also sought to find out how the organizations support IT functioning of supply chain processes.

Table 4.6: Educational level of IT professionals in supply chain functions.

	Frequency	Percent
Degree	69	48.8
Diploma	51	35.7
Certificate	12	8.5
On the job training	8	5.4
None	2	1.6
Total	**142**	**100.0**

The study also sought to find out how the organizations support IT functioning of supply chain processes. Table 8 appendix VI indicates results of the study were as follows: Recruitment of personnel skilled in IT supply chain functions 69.6%, representation in top management decision making meetings on IT functions 10.7%, IT training 9.8 %, Facilitate IT connectivity with members of the supply chain 7.1% and IT budget 2.7%. These findings put more emphasis on the previous sections findings that there is low investment in IT infrastructure. They also confirm that the supply chain practices are in its inception stage at Kenya business environment and a lot of study and deliberation is required to implement them in our manufacturing industry as was highlighted by Stephen *et al.,* (2012) in their study on environmental factors that influence supply chain management implementation in the manufacturing industries in Kenya.

The study also sought to investigate the IT support management practices in large manufacturing firms in Kenya. Table 9 appendix VI shows the aggregate mean stood at 3.3169 and the standard deviation 0.9489. This implies IT support in supply chain is average in our manufacturing organizations. To be more specific the highest mean of 3.45 and a standard deviation of 1.139 imply that IT system ability to support the manufacturing process is slightly higher than other supply chain processes. IT system ability to support product life cycle management mean was 3.18 and a standard deviation of 1.124, organization, to facilitate visibility of the entire business for ease of management mean was 3.36 and a standard deviation of 0.950, to support order commitment process mean was 3.41 and a standard deviation of 1.101, to support order distribution management process mean stood at 3.39 and a standard deviation of 1.132 while to support the source process was 3.29 and a standard deviation of 1.132 and finally IT system ability to support demand management process was 3.44 and a standard deviation of 1.054.

These results seem to support Peter, *et al* (2010) findings that reinforced the importance of a company's use of its databases, explicative and predictive models and fact-based management to drive its decisions and actions. The analytical capabilities can better guide the exclusively human decisions and provide automated decisions in some tasks in organizations. This supports the order of importance in which the IT system seem to support the supply chain functioning as follows: manufacturing, demand management, order commitment, order distribution, visibility and finally product life cycle management.

4.5.5 Descriptive Statistics on supply chain performance

The respondents were required to rate the performance of their supply chain using the supply chain performance attribute provided from in a period of five years from 2010 to 2014.Table 8, Appendix VI shows that the overall aggregate mean score for this section stands at 3.0959 and the standard deviation at 0.47350. This indicates that the respondents

agreed that the performance of the supply chains was average. The aggregated parameters for the sub-variables are on time delivery on request with a mean score of 3.3533 and a standard deviation of 0.93706, on time delivery to commit with a mean score of 3.3830 and a standard deviation of 0.92915, order fulfillment lead time with a mean score of 2.8857 and a standard deviation of 1.07714, production flexibility with a mean of 2.9601 and a standard deviation of 1.02139, total supply chain management costs with a mean of 3.0527 and a standard deviation of 0.96106, cost of gods sold as a percentage of revenue mean of 3.0048 and a standard deviation of 0.92260, inventory days of supply mean of 2.5500 and a standard deviation of 0.91786, cash to cash cycle time mean of 2.6668 and a standard deviation of 0.94456 , net asset turns with a mean of 2.6969 and a standard deviation of 0.95099 and profitability with a mean of 2.2110 and a standard deviation of 0.95804.

The measures used in this study are consistent with Ramayah, Tan, Roaimah and Noornina (2008) measures used to measure supply chain performance of the manufacturing companies located in Penang, Malaysia. They used reliability responsive flexibility as measures of supply chain performance. Others that used the same measures were Adebayo (2012) and Jeong & Hong (2007). Margaret (2014) used sales maximization to measure supply chain performance. From the study scale, on time delivery on request and on time delivery on commit variables each make somewhat high contributions to supply chain performance with profitability making the least contribution. The result of this study seems to agree with the findings of Kevin (2005) whereby the deliver process has a higher impact on overall performance than the other supply chain processes.

4.6   Results of Diagnostic Tests

4.6.1   Normality Test

Before the normality was done a test for outliers was done and several cases identified. When there are definite outliers it is clear that the outcome does not follow a normal

distribution. Outliers distort the true relationship between variables, either by creating a correlation that should not exist or suppressing a correlation that should exist (Abbott & McKinney, 2013). Outliers within the constructs were dropped thus creating normality in the data as suggested by Kline, 2005 & Hair, 2011. Mahalanobis d-squared was used for multivariate testing on the dependent and independent variables where they produced reasonable box-plots as shown in figure 4.1 whereby all the constructs are symmetrical and with no outliers identified thus presence of normality in the data.
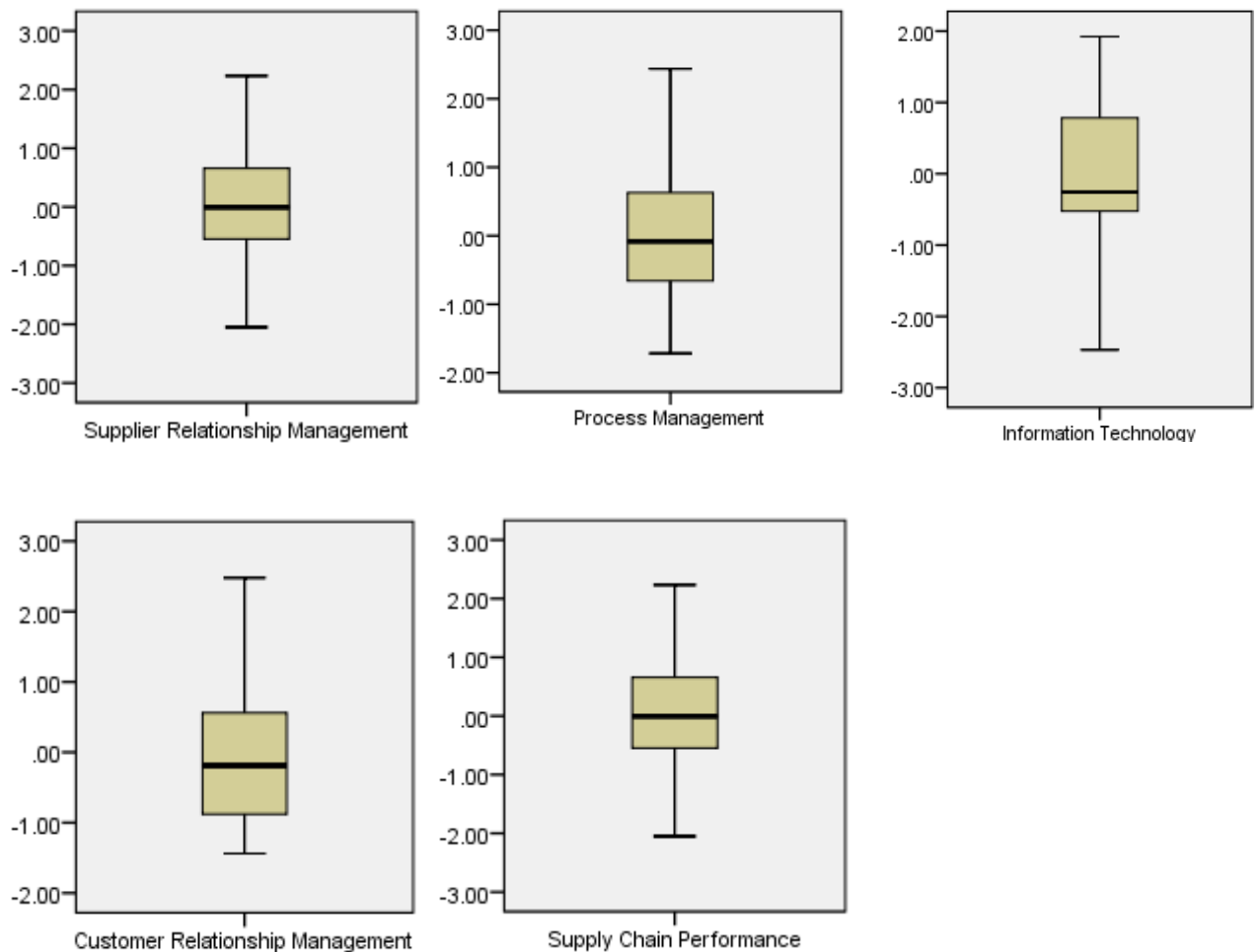
Figure 4.5: Multivariate Testing of Outliers for the Variables

To confirm the normality of the data after outliers were dropped normality test for all variables was done using of Kolmogorov-Smirnov and Shapiro-Wilk test (table 4.9). The tests results show the following p-value for SPM = 0.968; PM = 0.971; CRM = 0.974 and SCP = 0.979. This statistics are all greater than 0.05 as shown in table 4.17. The tests reject the hypothesis of normality when the p-value is less than or equal to 0.05 (Sharpiro & Wilk, 1965) illustrating that the standardized residual was significantly normally distributed. Since all P values are greater than 0.05 then the data is sufficiently normally distributed on a significance level of 5% and fit for further statistical analysis and therefore did not result in inflated statistics and underestimated standard errors (Field, 2013).

Table 4.9: Normality Test Results

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
CRM	.082	98	.123	.974	98	.052
PM	.078	98	.156	.971	98	.090
IT	.090	98	.075	.970	98	.076
SPM	.091	98	.080	.968	98	.058
SCP	0.068	98	0.200[*]	0.979	98	0.11

*This is a lower bound of the true significance.
a. Lilliefors Significance Correction

4.6.2 Linearity Test

To test whether the variables were linearly related, correlation analysis was used. Table 4.10 shows that p-values for the correlation coefficients are less than 0.01. Therefore, all the explanatory variables have significant positive correlation coefficients. That is the variables and supply chain performance commove in the same direction implying linear relationship. The significant and positive correlation implies that the coefficients of the independent variables in the regression models were positive. In addition the significance of the coefficients implies that linear specification could be the correct specifications of the model

Table 4.10: Linearity Test

Reference Variable: Supply chain performance	Test statistics	
	Correlation Coefficient	P value
SRM	0.432**	0.000
PM	0.365**	0.000
CRM	0.309***	0.000
IT	0.369***	0.000

4.6.3 Homoscedasticity

Breusch-Pagan test was used to test the null hypothesis that the error variances are all equal versus the alternative that the error variances are a multiplicative function of one or more variables. Table 4.11 show that the chi-square value was 5.936 indicating that heteroscedasticity was not a concern. A large chi-square value greater than 9.22 would indicate the presence of heteroscedasticity (Sazali, Hashida, Jegak & Raduan, 2009).

Table 4.11: Breusch-Pagan and Koenker Test for Heteroscedasticity

Ho	Variables	Chi2(1)	Prob > Chi2
Constant Variance	SPM, PM, IT & CRM	5.936	0.204

4.7   Hypotheses testing

This section presents the study findings thematically based on the objectives. To test hypotheses required the use of linear regression analysis. The results were interpreted according to the R^2 values and the beta values at 95% level of significance. The variables under study were regressed on supply chain performance indicators and a composite performance measure computed to reflect overall supply chain performance. Four research hypotheses that the study sought to test are addressed in this section.

4.7.1 Supplier relationship management practices and supply chain performance

The first objective of this study sought to establish the effect of SRM practices on supply chain performance of large manufacturing firms in Kenya. The hypothesis to test for this specific objective was H_A1: There is no significant relationship between supplier relationships management practices and supply chain performance of the large manufacturing firms in Kenya.

Table 4.12 shows the linear regression model which indicates that $R^2= 0.446$ which means that 44.6% change of supply chain performance can be explained by a unit change of SRM practices. Further test on ANOVA shows that the significance of the F-statistic (77.256) is less than 0.05 since p = 0.00. The constant α = -0.121 meaning that if the independent variable SRM practices is held constant then there will be a negative supply chain performance by 0.121. The regression coefficient for SRM practices was positive and significant (β = 0.449) with a t-value = 8.790 (p-value < 0.001) implying that for every 1 unit increase in Supplier Relationship Management, supply chain performance is predicted

to increase by 0.449 units and therefore H_A1 is rejected. On the basis of these statistics, the study concludes that there is significant positive relationship between SRM practices and supply chain performance of large manufacturing firms in Kenya.

This finding sheds light on the role of SRM practices on supply chain performance. This is indeed supported by the statements most organizations gave that indicated relatively good SRM practices with a mean score of 3.5288. The fact that SRM practices enhance supply chain performance is consistent with prior studies (Wajahat et al, 2014; hung et al, 2011; Marta et al 2013; Raskovic & Makovec 2012). This means that large manufacturing firms in Kenya have put in place SRM practices which are relevant to supply chain performance. This is also evident due to the availability of documentation and budgets for SRM activities.

From the theoretical perspective, the study used the postulates of the agency and transaction cost theories. According to the agency theory an emphasis on internal competences requires greater reliance on external suppliers to support directly non-core requirement. Also developing effective supply base management strategies can help counter the competitive pressures brought about by intense worldwide competition. The transaction cost theory posits that firms can try to reduce opportunistic behavior by recognizing the advantages of working together for mutual benefit and using bilateral mechanisms (Williamson, 1985). These mechanisms strengthen the relationship between the parties involved and as a result protect the investments made in specific assets.

Krapfel, Salmond and Spekman (1991) present that transaction costs are optimized if the relationship management is optimized according to the relationship type, and argue that transaction costs have an impact on the type of relationship. This is indeed reflected in the findings of this study whereby the SRM practices got an average mean score of 3.5288 which corresponds with the average mean score of total supply chain management costs as a percentage of the revenue as 3.0527. Both of them correspond at an average score. From

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the above discussion in descriptive results, regression results, theoretical perspective and empirical literature presented it can be inferred that there is a significant relationship between supplier relationships management practices and supply chain performance of the large manufacturing firms in Kenya.

Table 4.12: Supplier Relationship management Practices and Supply chain performance

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.668[a]	0.446	0.440	.51780

a. Predictors: (Constant), Supplier Relationship Management

ANOVA[a]

	Sum of Squares	df	Mean Square	F	Sig.
Regression	20.713	1	20.713	77.256	0.000[b]
Residual	25.739	96	0.268		
Total	46.452	97			

Coefficients[a]

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.121	.052		-2.306	.023
1 Supplier Relationship Management	.449	.051	.668	8.790	.000

4.7.2 Process Management and supply chain performance

The second objective was to determine the effect of process management on the supply chain performance of the large manufacturing firms in Kenya. The hypothesis to test for this specific objective was H_A2: There is no significant relationship between process management practices and   supply chain performance of the large manufacturing firms in Kenya. Table 4.13 shows the linear regression model $R^2 = 0.480$ which means that 48% change of supply chain performance can be explained by a unit change of PM practices.

Further test on ANOVA shows that the significance of the F-statistic (88.462) is less than 0.05 since p = 0.00.The Constant α = -0.155 means that if the independent variable, PM practices is held constant then there will be a negative supply chain performance by 0.155. The regression coefficient for PM practices was positive and significant (β = 0.528) with a t-value = 9.405 (p-value<0.001) implying that for every 1 unit increase in PM practices supply chain performance is predicted to increase by 0.528 units and therefore $H_{02}$is rejected. On the basis of these statistics, the study concludes that there is a significant positive relationship between PM practices and supply chain performance of large manufacturing firms in Kenya. These findings are supported by the statements most organizations gave that indicated practice of relatively good PM practices with the highest mean score of 3.6217. These findings are in conformity with other studies, for example, Ugur & Erman (2013), Ponsignon, Maull & Smart (2013), and Wajahat *et al*, (2014). This means that large manufacturing firms in Kenya have put in place PM practices which are relevant to supply chain performance. This is also evident due to the availability of documentation and budgets for PM activities.

Hypothesis two relied on the theoretical proposition of the Porter's value chain theory, coordination theory and theory of constraints. A value chain disaggregates a firm into its strategically relevant activities in order to understand the behavior of costs and the existing and potential sources of differentiation for example quality. However most organizations did not seem to have put more emphasis on the identification of cost drivers as their main reason for core process documentation. Most of them were concerned with making work easier or certification. Also quality testing and adherence was mostly done at the end of the process instead of ensuring quality at all stages of the process. Coordination theory suggests identifying and studying common dependencies and their related coordination mechanisms across a wide variety of organizational settings. The respondents indicated that the management makes decisions regarding processes in the organization while the best practice would be team decision making. TOC focuses on improving throughput by

managing bottlenecks or constraints in the system. In deed results indicate that high budgets are allocated to business process reengineering to improve the rate of processing and new machinery is bought to improve efficiency and employment of latest production methods.

From the above findings this study concludes that large manufacturing firms in Kenya implement good practices in process management even though not the best practices. The regression coefficient for PM practices was positive and significant (β = 0.528) with a t-value = 9.405 (p-value < 0.001) implying that for every 1 unit increase in PM practices supply chain performance is predicted to increase by 0.528 units. This study therefore deducts that indeed there is a positive significant relationship between process management practices and supply chain performance of the large manufacturing firms in Kenya.

Table 4.13: Influence of process management Practices on Supply chain performance

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.693[a]	.480	.474	.50182

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	22.277	1	22.277	88.462	.000[b]
Residual	24.175	96	.252		
Total	46.452	97			

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.155	.051		-3.056	.003
process management	.528	.056	.693	9.405	.000

4.7.3 Customer Relationship Management practices and supply chain performance

The third objective was to establish the effect of customer relationships management on supply chain performance of the large manufacturing firms in Kenya. The hypothesis to test for this specific objective was: H_A3**:** There is no significant relationship between customer relationship management and supply chain performance of the large manufacturing firms in Kenya. Table 4.14 indicates the linear regression model whereby $R^2=0.348$ which means that 34.8% change of supply chain performance can be explained by a unit change of CRM practices.

 Further test on ANOVA above shows that the significance of the F-statistic (51.278) is less than 0.05 since p value, p = 0.00. Further test on the beta coefficients of the resulting model show that the constant α = -0.146, meaning that if the variable CRM practices is held constant then there will be a negative supply chain performance by 0.146. The regression coefficient for CRM practices was positive and significant (β = 0.430) with a t-value= 7.161 (p-value<0.001) implying that for every 1 unit increase in customer relationship management practices, supply chain performance is predicted to increase by 0.430 units and therefore H_A4 is rejected.

This findings support the argument by Mehrdad and Mohammad (2011) that one of the most important factors in achieving the competitive advantage is the absolute concentration on the customer. Tim.,*et al.,* (2012) also found that CRM initiatives jointly emphasizing customer intimacy and cost reduction outperform those taking a less balanced approach. They recommended that whereas there is a temptation for managers to be normative about the pursuit of competitive advantage and direct attention and resources toward particular CRM capabilities, this approach would seem to be flawed, as well-developed technical, human and business capabilities in isolation are insufficient to generate competitive superiority. Each capability is nested within an intricate organizational system of interrelated and interdependent resources.

These results also support the relationship marketing theoretical perspective which is of the idea that customers have continuing value over the period they stay in business with a specific company and therefore relational exchanges involving multiple linked exchanges extending over time involving both economic and social bonds (Filip & Anghel, 2007) should be developed. The Market-Driven Value Chain theory states that customer needs ensures access to the market and controls the company's strategy. It is a link between the supplier's value chain and the customers' value chain. The channel consists of different activities and every activity should support the overall strategy of business, thus supporting the findings of this study.

Table 4.14: Customer relationship management Practices and Supply chain performance.

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.590[a]	.348	.341	.56161		
ANOVA[a]						
Model	Sum of Squares	df	Mean Square	F	Sig.	
Regression	16.173	1	16.173	51.278	.000[b]	
Residual	30.279	96	.315			
Total	46.452	97				

Coefficients[a]					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.146	.057		-2.559	.012
Customer Relationship Management	.430	.060	.590	7.161	.000

4.7.4 Information Technology support practices and   supply chain performance

The fourth objective was to assess the effect of IT support on the supply chain performance of the large manufacturing firms in Kenya. The hypothesis to test for this specific objective was H_A4: There is no significant relationship between IT support and supply chain

performance of the large manufacturing firms in Kenya. Table 4.15 demonstrates the linear regression model that shows that $R^2 = 0.208$ which means that 20.8% change of supply chain performance can be explained by a unit change of Information Technology. Further test on ANOVA above shows that the significance of the F-statistic (25.162) is less than 0.05 since p value, p = 0.00. Further test on the beta coefficients of the resulting model, show that the constant $\alpha = -0.130$, meaning that if the independent variable IT is held constant then there will be a negative supply chain performance by 0.130. The regression coefficient for Information Technology was positive and significant ($\beta = 0.360$) with a t-value = 5.016 (p-value<0.001) implying that for every 1 unit increase in Information Technology, supply chain performance is predicted to increase by 0.360 units and therefore H_{04} is rejected.

These results support the findings of Peter *et al.,* (2010) analytical capabilities provide a better understanding of the areas where the impact of business analytics may be the strongest. Likewise Mehdi *et al*., (2008) indicated that the impact of IT on SCM is much larger as it facilitates inter- organizational communication and in turn reduces cycle. IT provides opportunities for an organization to expand their markets worldwide. Also, IT enhanced teamwork and customer relationship management therefore increasing performance of the supply chain.

These findings are consistent with the rationale of diffusion of innovations theory that adoption is a decision of full use of an innovation as the best course of action available and rejection is a decision not to adopt an innovation which the management of manufacturing sector has to make. According to the theory a technology is a design for instrumental action that reduces the uncertainty in the cause-effect relationships involved in achieving a desired outcome which agrees with the findings.

 The recommendations of the competitive advantage theory is that the managers should strive for the use of generic ICT facilities as an appropriate tool to carryout supply chain

functions, to develop strategies and even to expand organizational activities. In addition, the management should integrate the Internet resource and capabilities into the various business transactions, collaborate and communicate with other corporate entities, and utilize the ICT capability as the backbone and actuator of the existing business processes, transactions and strategies for competitive advantage. From the analysis of the results and the discussion presented this section this study infers that IT support practices have a positive and significant effect on supply chain performance of the large manufacturing firms in Kenya.

Table 4.15: IT support Practices and Supply chain performance.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.456[a]	.208	.199	.61919

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	9.647	1	9.647	25.162	.000[b]
Residual	36.806	96	.383		
Total	46.452	97			

	Coefficients[a]					Sig.
Model	Unstandardized Coefficients		Standardized Coefficients	t		
	B	Std. Error	Beta			
(Constant)	-.130	.063		-2.077		.040
1 Information Technology	.360	.072	.456	5.016		.000

4.8   Multiple Regression results

The general objective of the study was to find out how business value chain practices influence the supply chain performance of the large manufacturing firms in Kenya. The

overall model gives the results of the combined effect of all variables (internal business value chain practices) on supply chain performance of the manufacturing sector in Kenya. Table 4.16 demonstrates the multiple regression results that indicate a strong relationship since $R^2 = 0.626$ which means that 62.6% of change in supply chain performance of the large manufacturing firms in Kenya can be explained by a change of one unit of all the predictor variables jointly.

Further test on ANOVA shows that the significance of the F-statistic (38.845) is less than 0.05 since p value, $p = 0.00$. A further test on the beta coefficients the resulting model, the constant $\alpha = -0.151$ is significantly different than 0, since the p value $p = 0.000$ is less than $p = 0.05$, this implies that the supply chain performance will be negative without the effect of predictable variables. This results support Pekka, *et al.,* (2010) and Kongkiti, *et al.,* (2011) findings that an effective business value chain essentially depends on a good internal operational system and constructive relationships with suppliers and customers. In other words, the collective efficacy depends on a manufacturer's internal operations (IO) and its supplier and customer partnership. In addition, managing and sustaining a business value chain apparently required constant investments and upgrades in ICT infrastructure.

These findings also support the ideas proposed by sociologist James Coleman (1988) in the network theory (NT) and the Dynamic Capabilities Theory (DCT) that was introduced by David Teece and Gary Pisano in 1994. According to NT while each actor in the large manufacturers' network is trying to maximize his or her individual interests, each is at the same time constrained because he or she is embedded in an interdependent relationship with the other. The relationship imposes limits on manufacturers, suppliers and customers behavior and regulates the extent of self-seeking. These limits are counterbalanced by the increased access to resources each actor gets through the other. Links between firms in a network develop through exchange processes (information, goods and services, and social processes) and adaptation processes (personal, technical, legal, logistics, and administrative elements).

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The DCT emphasis on the firm's ability to renew competences such as use of IT support in SCM, CRM software, BPR, computerization and automation so as to adapt to changes in the business environment locally, regionally and globally. Of great importance is the ability of strategic management to use these competences to match the requirements of the manufacturing market and operating environments. Dynamic capabilities within supply chain organizations should enable organizations to create value from supply chain relationships though their combined capabilities. Large manufacturing firms should not base their sourcing decisions solely on potential supplier costs, while disregarding factors such as supplier locations, supplier's resources and capabilities including human capital, communication capability, and market capabilities (Zhang *et al*., 2013). In terms of how DC's enable organizations to create value from supply chain relationships the strategic fit between organizations is critical. The coefficients $\beta 1 = 0.249$, $\beta 2 = 0.381$, $\beta 3 = 0.159$ and $\beta 4 = 0.154$ as shown in table 4.24. They are significantly different from 0, with p values 0.000, 0.000, 0.028 and 0.014 respectively, less than 0.05 thus they are significant.

Table 4.16: Business value chain practices and supply chain performance.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.791[a]	.626	.609	.43246	2.114

a. Predictors: (Constant), CRM, PM, IT, SPM
b. Dependent Variable: SCP

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	29.059	4	7.265	38.845	.000[b]
	Residual	17.393	93	.187		
	Total	46.452	97			

a. Dependent Variable: SCP
b. Predictors: (Constant), CRM, PM, IT, SPM

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.151	.044		-3.431	.001
SPM	.249	.061	.370	4.081	.000
PM	.381	.067	.500	5.644	.000
IT	.159	.072	.202	2.226	.028
CRM	.154	.062	.211	2.500	.014

The Optimal model

$$SCP = 0.381PM + 0.249\ SRM + 0.159\ IT + 0.154\ CRM - 0.151$$

Independent   **Dependant variable**

Process management
-control of processes
-identification of core competences
-cost drivers
-quality assurance

Supplier relationship management
- Information sharing
-supplier development
-collaborativeinitiatives
-Supplier performance

Supply chain performance
- Reliability
- Responsiveness
- Lead time
- costs reduction
-quality

Information technology support
-Supply chain processes
-Order commitment support
-Distribution management support
- Make process support

Customer relationship management
-customer interaction
-Customer satisfaction
-Customer expectations
-consumer value

Figure 4.6: Adopted conceptual framework

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1   Introduction

This chapter presents the summary, conclusions and policy recommendations of the study. It summarizes the research process indicating its purpose and specific objectives. Further the summary captures the findings of the study based on the objectives. It also contains the conclusion that the researcher made based on the findings of the study. Additionally the chapter contains the policy recommendations the researcher made based on the conclusion of the study.

5.2   Summary

This study was an attempt to understand the effect of business value chain practices on the supply chain performance of large manufacturing firms in Kenya. This was motivated by the concern over the lagging performance of the large manufacturing firms specifically due to low value addition and high costs of production that impede competitiveness of Kenya's manufactured products in the global market (RoK, 2013). Given that competitiveness of products and services largely depend on its supply chain this observation needed to be researched in order to provide reliable empirical evidence on which basis policy suggestions on supply chain performance in the manufacturing sector in Kenya could be recommended. Accordingly the study developed a comprehensive conceptual framework and tested it empirically guided by the following specific objectives: investigate the effect of supplier relationship management practices on supply chain performance of the large manufacturing firms in Kenya; determine the effect of process management on the supply chain performance of the large manufacturing firms in Kenya; establish the effect of customer relationships management on supply chain performance of the large manufacturing firms in Kenya and to assess the effect of IT support on the supply chain

performance of the large manufacturing firms in Kenya. Preliminary analyses focused on establishing the intra firm value chain practices after which relevant hypothesis tests to address the study objectives were conducted.

The study employed a mixed research design of cross-sectional research design and descriptive survey design. Data was collected using self-administered questionnaires. Descriptive statistics were used to describe and summarize data, while inferential statistics, particularly regression analysis was used to establish the nature and magnitude of the relationships hypothesized between the variables. The model specification was tested using normality tests, linearity test, multicolleration test and heteroscidastisity test. The research tested four hypotheses using linear regression model.

5.2.1 Influence of supplier relationship management practices on supply chain performance

Supplier Relationship Management practices are the strategies an organization deliberately puts in place to planning and manage all interactions with third party organizations that supply goods and/or services to it in order to maximize the value of those interactions. This study sought to find out the relationship between supplier relationships management practices and supply chain performance of the large manufacturing firms in Kenya. The study found out that on average the supply chain managers indicated that they employed good supplier relationship management practices. The results indicated that $R^2 = 0.446$ which means that 44.6% change of supply chain performance can be explained by a unit change of Supplier Relationship Management. The relationship between SRM practices and supply chain performance was found out to be positive and significant.

5.2.2 Influence of process management on the supply chain performance

The second objective sought to determine the relationship between process management practices and supply chain performance of the large manufacturing firms in Kenya. The study found out that in the Kenyan large manufacturing firms set up most PM practices are

driven by motives of making work easier or for certification purposes as opposed to identification of cost drivers. Managers were found to aligned strategic objectives with business processes, demonstrate executive commitment and empower employees. The results showed that $R^2 = 0.480$ which means that 48% change of supply chain performance can be explained by a unit change of PM practices. The study found out that there was a significant positive relationship between PM practices and supply chain performance of large manufacturing firms in Kenya.

5.2.3 Influence of customer relationship management practices on supply chain performance

The third objective was to investigate the relationship between customer relationship management practices and supply chain performance of the large manufacturing firms in Kenya. This study found out that customer relationship management practices that relate to business value chain management jointly emphasized on customer intimacy and cost reduction. The study revealed that relationship between CRM practices and supply chain performance was positive and significant. It also established that $R^2 = 0.348$ which means that 34.8% change of supply chain performance can be explained by a unit change of CRM.

5.2.4 Influence of IT support practices on the supply chain performance

The study also sought to find out the influence of IT support practices on the supply chain performance of the large manufacturing firms in Kenya. The study found out that IT support practices had a positive and significant relationship on SCP. The order in which the IT system support the supply chain functioning as follows: manufacturing, demand management, order commitment, order distribution, visibility and finally product life cycle management.

Statistics indicated that $R^2 = 0.208$ which means that 20.8% change of supply chain performance can be explained by a unit change of Information Technology. Findings revealed that manufacturing organizations have low IT support for basic supply chain capabilities to enable value addition. However, they have moderate IT support for the supply chain processes that basically enhance information flow between supply chain partners. The results indicated that the relationship between IT support and supply chain performance was positive and significant.

5.3   Conclusion

The results of this study clearly indicate that large manufacturing firms in Kenya have not yet embraced best practices in SRM. For example the firms seem to have paid less attention to relational dimensions than transactional dimensions in their buyer-supplier relationships. This is because the firms have not given much attention to joint conflict resolution as they have given to payment on time. This conclusion is also supported by lack of supplier resolution complaints records. However the trend indicated on the amount of money invested in SRM leads the researcher to conclude that more firms are becoming increasingly aware of the importance of SRM as a tool for value addition and competitiveness in the supply chain.

The researcher also concluded that practices in process management are above average as compared to SRM practices although still not best practices. For instance in most large manufacturing firms in Kenya management makes decisions regarding processes throughout the entire operations. It is also important that cross functional teams are involved in making suggestions on processes and mitigation of cost drivers. The implication for managers in this case is that when a firm seeks to sustain their competitive advantage, the process alignment which includes executive Commitment and employee empowerment, should be considered to improve supply chain performance.

It was noted that most PM practices are driven by motives of making work easier or for certification purposes as opposed to identification of cost drivers which is counterproductive. The study also concludes that large manufacturing firms in Kenya have put a lot of emphasis on process improvement, improved quality standards through certification, supervision, training, research and improved technology thus very high levels in investment exhibited. This findings support the conclusion that process management has the highest contribution to supply chain performance of large manufacturing firms in Kenya.

Implementation of customer relationship management practices that relate to value chain efficiency are above average in the large manufacturing firms in Kenya. Most organizations maintain some level of communication flow with their customers, frequently interact with customers to set reliability, responsiveness, and other standards, insist on customer complaints handling to ensure resolution, effectiveness of customer value proposition statement etc. Although organizations implement those basic CRM practices large manufacturing firms in Kenya investment in CRM is low signifying low levels of CRM system implementation. This has led to the conclusion that management is reluctant in the implementation of CRM program thus low investment levels in CRM programs and software. As such there is moderate availability of customer databases, competitor focus and customer information analysis. These results reveal the need for large manufacturing firms CRM practices to move beyond the mere adoption of CRM practices philosophy to actual implementation.

Results of this study lead the researcher to conclude that IT support in supply chain is slightly below average in large manufacturing organizations. To be more specific the highest level of IT support was its ability to support the manufacturing process which is obvious. The subject companies are observed to be very poor in their information system infrastructure related to the supply chain activities. They have a slightly flexible software program that is probably weak in providing results for supply chain and supply chain

network streams. However the study also concludes that IT support for supply chain practices are in its inception stage at Kenya business environment and a lot of training and deliberation is required to implement it in our manufacturing industry for better supply chain performance

5.4   Recommendations

The Vision 2030 requires the contribution of the manufacturing sector to double by the year 2030. The results have established the significant role of internal business value chain practices to the supply chain performance of the large manufacturing firms in Kenya. A value chain within a firm creates products that are used as inputs by next firm in the supply chain. This means that if he value chains within the individual firms are not efficient and effective the imperfections are rolled out through the entire supply chain. Given that study established that 62.6% of change in supply chain performance of the large manufacturing firms in Kenya can be explained by a change of one unit of all the predictor variables jointly the researcher made a number of recommendations.

The first recommendation is that organizations should put in place policies that emphasis best SRM practices. This includes involving suppliers in deciding the best way to resolve a conflict, training key suppliers on the needs of the organization, involving suppliers at all stages during new product development, supplier development programs, network meetings with suppliers, measurement of supplier performance and communication of the results to them and enhancing capabilities to enhance data and communication flow among others.

Secondly regarding process management recommends such practices as cross functional teams in decisions regarding processes, documentation that identifies cost drivers in processes, enhancing data flow through the manufacturing process within the firm, adherence to production schedules, quality assurance as opposed to inspection at the end of

the process and improvement of visibility between manufacturing operations and customer orders.

Thirdly, the study recommends that large manufacturing firms should embrace CRM practices that foster value addition in the bid to satisfy the customer. Such practices include using software technology and advanced databases. This enables an organization measure and evaluates customer satisfaction in the local, regional and global markets on a continuous basis. They should implement relationship programs, such as community-building websites and loyalty card programs, to develop a trusting relationship among consumers in a bid to gain their confidence and increase repeat purchases.

With this kind of a practice that provides database on customers an organization can be able to monitor customers' behavioral changes that may signify customer changing needs and adjust accordingly. Organizations should develop and display a value proposition statement that communicates customer value to all the stakeholders. It helps in giving direction towards fostering an organizational culture that emphasis on value addition processes to achieve customer value as displayed in the value proposition statement.

Fourthly the researcher recommends that the manufacturing firms should implement IT software that supports supply chain capabilities that include product life cycle management, order commitment process, order distribution management, source process, manufacturing process and demand management process. A supply chain management module within the ERP software would foster effectiveness and efficiency in supply chain value addition process.

Lastly the study recommends that management should increase their awareness in the importance of strategic business value chain management for improved supply chain performance. This can be achieved through their willingness to support supply chain objectives, training and making use of the services of trained supply chain managers who understand and can implement supply chain principles in their organization.

5.5   Contributions of the Study to Knowledge

The results of the study address some of the earlier identified knowledge gaps and thus contribute to the frontiers of knowledge. First the study advanced an elaborate conceptual framework of internal BVCM practices and also empirically tested it. The findings of the study indicate that indeed the selected internal BVCM practices for this study contribute to supply chain performance. These empirical results are of great importance given that most studies in this area have addressed supply chain management practices and not business value chain management practices.

This study also contributes to the debate on the differences between supply chain management and value chain management. According to this study a value chain exists within a firm and extends further to other individual firms within the supply chain. It is the value chain management practices within individual firms that affect collective value addition thus affecting the entire supply chain performance. It is also worth noting here that almost all studies done in the area of value chain have addressed the industry value chain management practices while this study focused on the firm's value chain management practices that enhance the efficacy of the value chain within the business entity.

Further the fact that the study utilized the SCOR model to supply chain performance measurement metrics is quite useful given that very few studies have used it. There has been wide spread concern that, in general, the metrics used for supply chain performance are not elaborate and appropriate. Finally this study makes useful contribution to the advancement of academic knowledge on BVCM practices from the context of sub Saharan African setting and particularly on manufacturing firms in Kenya. Previous research on value addition analysis in Kenya has mainly focused on proportional contribution in overall costs of each value adding activity in various stages of value chain. Therefore the study should encourage more research on BVCM practices and SCP from sub-Saharan Africa.

Overall the study contributes to BVCM practices literature and supply chain performance measurement by providing empirical evidence of the effects of BVCM practices on supply chain performance.

5.6   Suggested Areas for Further Research

A number of relevant directions for future research are worth noting. First the selection of variables included in the conceptual framework is not exhaustive. Certainly other factors could provide additional insights into the influence of business value chain practices on supply chain performance. Also a research should be conducted on the factors that may intervene (moderating or mediating) in the relationship between BVCP and supply chain performance.

This study was conducted from the premise that all modern organizations specifically in the manufacturing sector engage in business value chain practices albeit in varying degrees since their core business is value addition. It did not seek to establish why business value chain practices in organizations would be different. Future studies could seek to establish the antecedents of business value chain practices. Such research would enhance a better understand of the determinants of BVCM practices in organizations and thereby enable organizations appropriately inform their BVCM investment. Also future research can use a longitudinal approach as it is more robust in determining causality especially in relationship studies that are normally dynamic and long term in nature.

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APPENDIX I: INTRODUCTORY LETTER

Perris Wambui Chege,

Jomo Kenyatta University of Agriculture and technology,

College of human research Development,

Dep't of Procurement and entrepreneurship

P.O. Box 62000 – 00100

Nairobi.

Dear Respondent,

RE: PHD RESEARCH THESIS DATA

I am a PHD student in Jomo Kenyatta University of Agriculture and Technology specializing in Supply chain management .Am kindly requesting to be allowed to seek information in relation to value chain management practices among milk processing companies in Kenya. This study is being carried out in partial fulfillment of the course.

The information provided will STRICTLY be used for academic purposes and will be highly treated in confidence. No publication, if any shall be made without prior approval from the respondent(s). Under no instance will your name be mentioned in the report. Further CONFIDENTIALITY is guaranteed through coding of the findings.

Attached please find an interview guide that will be used to collect data that will be used

in the research. Your assistance will be highly appreciated.

Yours truly,

Perrris Wambui Chege

PHD Stude

APPENDIX II: QUESTIONNAIRE

Dear respondent, *I am a PhD student at Jomo Kenyatta University of Agriculture and Technology [JKUAT] carrying out a research on the influence of internal Business Value Chain Practices on the Supply Chain Performance of Large Manufacturing Firms in Kenya. This questionnaire is designed to collect data that will help to achieve the objectives of this study. I would be most grateful if you would kindly participate and respond to all the questions in this questionnaire as candidly and precisely as possible. Your honesty and co-operation in responding to these questions will be highly appreciated. All information provided will be treated with utmost confidentiality.*

PART I: ORGANIZATIONAL BIO DATA [please indicate appropriately]

1. Name of your organization [Optional]…………………………….............

2. For how many years has your organization being in operation? _____.

3. Size of the company in terms of:

     i. Number of branches_____

     ii. Total number of employees in all branches _____

     iii. Total net assets _____

4. Scope of operation *[Kindly tick appropriately]*

     i. Locally [within Kenya]   **[   ]**

     ii. Regional [Within East Africa] **[   ]**

     iii. Globally [Africa and beyond] **[   ]**

PART II: BUSINESS VALUE CHAIN PRACTICES

The following key shows the implication of the score regarding the level of internal business value chain practice in the firm as guided by the questionnaire**.**

[1] Very low

     [2] Low

     [3]Moderate

     [4]High

     [5]Very high

5. SUPPLIER RELATIONSHIP MANAGEMENT [SPM]

Kindly fill in the table below by ticking [√] the appropriate box relating to SPM.

Statement	1	2	3	4	5
How are serious conflicts involving supplier resolved in your organization?	End the relationship ☐	Avoid discussion ☐	The court of law ☐	Mediation ☐	Negotiations ☐
How do you deal with suppliers who **do not** adhere to quality levels in your organization?	Nothing ☐	Drop them immediately ☐	Warn them ☐	Discuss with them ☐	Train them ☐
When do you involve suppliers during new product development	Not at all ☐	After the completion ☐	Middle stage ☐	Early stage only ☐	All stages ☐
Approximately what is the percentage of suppliers who are in the supplier development programs?	Below 20% ☐	21-40% ☐	41-60% ☐	61-80% ☐	Over 80% ☐

How often do you hold networking meetings with your suppliers?	Never	Beginning of contract only	Only when problems arise	Yearly	Regularly [less than 1 year]
How often do you measure supplier performance and communicate the results to them?	Never	End of the contract period	Only when quality problems arise	Middle of the contract implementation	All Stages of contract implementation
How does your organization maintain data and communication flow with its suppliers	just happens	Hand mails delivery	e-mails	telephone calls	communication systems connectivity

7. What documents are there in your organization to support existence of supplier relationships? Tick **[√]** the appropriate ones

        i.   minutes for supplier meetings   **[ ]**

        ii.   Supplier performance records   **[ ]**

        iii.   Supplier visits files   **[ ]**

        iv.   Supplier complaints resolution records   **[ ]**

        v.   Records on supplier interaction forums   **[ ]**

        vi.   Any other_____

8. How much is the approximate budget set aside to cater for supplier visits and communication forums in the years indicated below

                2010 _____

2011 _____.

2012 _____.

2013_____.

2014_____.

9. Which practices has your organization put in place to enhance good Supplier Relationships
?_____

10. **PROCESS MANAGEMENT [PM]**

Kindly fill in the table below by ticking [√] the appropriate box relating to PM.

Statement	1	2	3	4	5
Who makes decisions regarding processes throughout the entire operations in your organization	operators	supervisors	management	departmental heads	cross functional teams
For what major reason are core processes documented in your organization	Not done	As a formerlity	To make work easier	For certification	To identify cost drivers
What percentage would you give the ability of your organization in managing data flow through the manufacturing processes	Below 20%	21-40%	41-60%	61-80%	Over 80%
What percentage would you give the performance of your organization in adhering to production schedules	Below 20%	21-40%	41-60%	61-80%	Over 80%
How is quality testing and adherence in your organizations manufacturing processes done?	follow a standard procedure	when goods are returned	At the beginning of the process	At the end of the process	At all stages of the p

What percentage would you give real time visibility between manufacturing operations and customer orders	Below 20%	21-40%	41-60%	61-80%	Over 80%
	☐	☐	☐	☐	☐

7. How much is the approximate budget set aside to cater for business process reengineering activities and programs.

2010 _____

2011 _____.

2012 _____.

2013_____.

2014_____.

11. What practices has your organization put in place to ensure effective value addition processes? _____

8. **INFORMATION TECHNOLOGY [IT]**

Kindly fill in the table below by ticking [√] the appropriate box relating to IT support to supply chain processes

Statement	1	2	3	4	5
	0- 20%	20-40%	41-60%	61-80%	Over 80%
What percentage would you give your organization IT system ability to support product life cycle management?					
What percentage would you give your organization IT system ability to facilitate visibility of the entire business for ease of management?					
What percentage would you give your organization IT system ability to support order commitment process?					

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What percentage would you give your organization IT system ability support order distribution management process?					
What percentage would you give your organization IT system ability support the manufacturing process?					
What percentage would you give your organization IT system ability support the source process?					
What percentage would you give your organization IT system ability to support demand management process?					

7. How much is the approximate budget set aside to improve the IT system to enable it support supply chain processes?

2010 _____

2011 _____.

2012 _____.

2013_____.

2014_____.

8. What is the educational level of IT professionals in supply chain functions in your organization? Tick **[√]** the appropriate ones

      i.   Certificate   **[ ]**

      ii.   Diploma   **[ ]**

      iii.   Degree   **[ ]**

      iv.   On the job training   **[ ]**

      v.   None of the above   **[ ]**

9. How does your organization management support IT functioning of the **supply chain processes**? Tick **[√]** the appropriate ones

i.   Recruitment of personnel skilled in IT supply chain functions   [ ]

ii. Represented in top management decision making meetings on IT functions[ ]

iii. IT training   [ ]

iv. IT budget   [ ]

v.   Facilitate IT connectivity with members of the supply chain   [ ]

vi. **Any other**_____

_____

10. **CUSTOMER RELATIONSHIP MANAGEMENT [CRM]**

Kindly fill in the table below by ticking [√] the appropriate box relating to CRM.

Statement	1	2	3	4	5
How frequently do you interact with customers to set reliability, responsiveness, and other standards for your organization?	Never	When sales do	Yearly	Half yearly	Quarterly
Who handle customer complaint in your organization to ensure resolution	Customers own follow up	front office	sales team concerned	departmental managers concerned	customer complaint handling system
What does your organizations customer value proposition statement communicate to the stakeholders?	There is no value proposition statement	Image of the organizatio	vision of the organization	mission of the organization	customer value
How often does our organization conduct research to establish customers	None at all	Yearly	Half yearly	Quarterly	Continuous process

changing needs?					
How often do you measure and evaluate customer satisfaction?	None at all ☐	Yearly ☐	Half yearly ☐	Quarterly ☐	Continuous process ☐
Approximately what percentage of your budget is set aside to cater for customer surveys	Below 20% ☐	21-40% ☐	41-60% ☐	61-80% ☐	Over 80% ☐

11. How much is the approximate budget set aside to cater for customer surveys for each year indicated below?

2010 _____

2011 _____.

2012 _____.

2013_____.

2014_____.

12. Which methods provided below does your organization use in order to get constant communication and feedback from customers? Tick **[√]** the appropriate ones

      i.   Call centers   **[ ]**

      ii.   Membership clubs   **[ ]**

      iii.   Exhibitions   **[ ]**

      iv.   Demonstrations on new product use   **[ ]**

      v.   Customer care desks   **[ ]**

      vi.   Toll free telephones   **[ ]**

      vii. Customer suggestion boxes   **[ ]**

Any other _____

_____

_____

13. What best practices has your organization put in place to enhance effective CRM?
_____

PART THREE: SUPPLY CHAIN PERFORMANCE (SCP)

Kindly fill in the table below by ticking [√] the appropriate box relating to SPC in each year.

Performance Attribute	Rank	2010	2011	2012	2013	2014
Percentage of orders delivered on time to customers.	[Below 60%]					
	[60-70%]					
	[70-80%]					
	[80-90%]					
	[Above 90%]					
Percentage of filled orders by internal commit date.	[Below 60%]					
	[60-70%]					
	[70-80%]					
	[80-90%]					
	[Above 90%]					
Number of days it took your supply chain from orders to customer receipt.	[Below 2 days]					
	[2-4 days]					
	[4-6 days]					
	[6-8 days]					
	[Above 10 days]					
Number is of days it took your supply chain to increase production by 20%.	[Below 10 days]					
	[10-20 days]					
	[20-30days]					

		2010	2011	2012	2013	2014
	[30-40 days]					
	[Above 40 days]					
Total supply chain management costs as a percentage of revenue.	[Below 5%]					
	[5-10%]					
	[10-15%]					
	[15-20%]					
	[Above 20%]					
Cost of goods sold as a percentage of revenue.	[Below 20 %]					
	[20-40%]					
	[40-60%]					
	[60-80%]					
	[Above 80 %]					
Performance Attribute	**Rank**	**2010**	**2011**	**2012**	**2013**	**2014**
Number of days it took a product in the inventory in your organization.	[Below 20days]					
	[20-40days]					
	[40-60days]					
	[60-80days]					
	[Above 80days]					
Number of days it takes your organization to have working capital	[Below 20days]					
	[20-40 days]					

turn around [cash to cash cycle time].	[40-60 days]					
	[60-80 days]					
	[Above 80days]					
Net asset turns in your organization.	[Below 2 days]					
	[2-4 days]					
	[4-6 days]					
	[6-8 days]					
	[Above 8 days]					
Profitability Earnings before interest and taxes as a percentage of revenue.	[Below 20 %]					
	[20-40%]					
	[40-60%]					
	[60-80%]					
	[Above 80%]					

Thank you for your time and participation

APPENDIX III: LIST OF LARGE MANUFACTURING FIRMS IN KENYA

Energy Sector

A.I Records (Kenya) Ltd	Modulec Engineering Systems Ltd	Kenwestfal Works Ltd
Amedo Centre Kenya Ltd	Mustek East Africa	Kenya Power & Lighting Co. Ltd
AssaAbloy East Africa Ltd	Nationwide Electrical Industries	Kenya Scale Co. Ltd/ Avery Kenya Ltd
Aucma Digital Technology Africa Ltd	Nationwide Electrical Industries Ltd	Kenya Shell Ltd
Avery (East Africa) Ltd	Optimum Lubricants Ltd	Libya Oil Kenya Limited
Baumann Engineering Limited	PCTL Automation Ltd	Power Technics Ltd
Centurion Systems Limited	Pentagon Agencies	Reliable Electricals Engineers Ltd
Digitech East Africa Limited	Power Engineering International Ltd	Sanyo Armo (Kenya) Ltd
Manufacturers & Suppliers (K) Ltd	Eveready East Africa Limited	Socabelec East Africa
Marshall Fowler (Engineers) Ltd	Frigorex East Africa Ltd	Sollatek Electronics (Kenya) Limited
Mecer East Africa Ltd	Holman Brothers (E.A.) Ltd	Specialised Power Systems Ltd
Metlex Industries Ltd	IberaAfrica Power (EA) Ltd	Synergy-Pro
Metsec Ltd	International Energy Technik Ltd	Tea Vac Machinery Limited
East African Cables Ltd	Kenwest Cables Ltd	Virtual City Ltd

Chemical Sector

Anffi Kenya Ltd	Maroo Polymers Ltd	Imaging Solutions (K) Ltd
Basco Product (K) Ltd	Match Masters Ltd	Interconsumer Products Ltd
Bayer East Africa Ltd	United Chemical Industries Ltd	Odex Chemicals Ltd
Continental Products Ltd	Oasis Ltd	Osho Chemicals Industries Ltd
Cooper K- Brands Ltd	Rumorth EA Ltd	PolyChem East Africa Ltd
Cooper Kenya Limited	Rumorth East Africa Ltd	Procter & Gamble East Africa Ltd
Beiersdorf East Africa td	Sadolin Paints (E.A.) Ltd	PZ Cussons Ltd
Blue Ring Products Ltd	Sara Lee Kenya Limited	Rayal Trading Co. Ltd
BOC Kenya Limited	Saroc Ltd	Reckitt Benckiser (E.A) Ltd
Buyline Industries Limited	Super Foam Ltd	Revolution Stores Co. Ltd
Carbacid (CO2) Limited	Crown Berger Kenya Ltd	Soilex Chemical Ltd
Chemicals & Solvents E.A.	Crown Gases Ltd	Strategic Industries Limited

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Ltd

Chemicals and Solvents E.A. Ltd	Decase Chemical (Ltd)	SupaBrite Ltd
Coates Brothers (E.A.) Limited	Deluxe Inks Ltd	Unilever Kenya Ltd
Coil Products (K) Limited	Desbro Kenya Limited	Murphy Chemical E.A Ltd
Colgate Palmolive (E.A) Ltd	E. Africa Heavy Chemicals (1999) Ltd	Syngenta East Africa Ltd
Johnson Diversity East Africa Limited	Elex Products Ltd	Synresins Ltd
Kel Chemicals Limited	European Perfumes & Cosmetics Ltd	Tri-Clover Industries (K) Ltd
Kemia International Ltd	Galaxy Paints & Coating Co. Ltd	Twiga Chemical Industries Limited
Ken Nat Ink & Chemical Ltd	Grand Paints Ltd	Vitafoam Products Limited
Magadi Soda Company Ltd	Henkel Kenya Ltd	

Food Sector

Africa Spirits Ltd	Annum Trading Company Limited	Premier Flour Mills Ltd
Agriner Agricultural Development Limited	Aquamist Ltd	Premier Food Industries Limited
Belfast Millers Ltd	Brookside Dairy Ltd	Proctor & Allan (E.A.) Ltd
Bidco Oil Refineries Ltd	Candy Kenya Ltd	Promasidor (Kenya) Ltd
Bio Foods Products Limited	Capwelll Industries Ltd	Trufoods Ltd
Breakfast Cereal Company(K) Ltd	Carlton Products (EA) Ltd	UDV Kenya Ltd
British American Tobacco Kenya Ltd	Chirag Kenya Limited	Unga Group Ltd
Broadway Bakery Ltd	E & A Industries Ltd	Usafi Services Ltd
C. Czarnikow Sugar (EA) Ltd	Kakuzi Ltd	Uzuri foods Ltd
Cadbury Kenya Ltd	Erdemann Co. (K) Ltd	ValuePak Foods Ltd
Centrofood Industries Ltd	Excel Chemical Ltd	W.E. Tilley (Muthaiga) Ltd
Coca cola East Africa Ltd	Kenya Wine Agency Limited	Kevian Kenya Ltd
Confec Industries (E.A) Ltd	Highlands Canner Ltd	Koba Waters Ltd
Corn Products Kenya Ltd	Super Bakery Ltd	Kwality Candies & Sweets Ltd
Crown Foods Ltd	Sunny Processor Ltd	Lari Dairies Alliance Ltd
Cut Tobacco (K) Ltd	Spin Knit Dairy Ltd	London Distillers (K) Ltd
Deepa Industries Ltd	Highlands Mineral Water Co. Ltd	Mafuko Industries Ltd
Del Monte Kenya Ltd	Homeoil	Manji Food Industries Ltd
East African Breweries Ltd	Insta Products (EPZ) Ltd	Melvin Marsh International
East African Sea Food Ltd	Jambo Biscuits (K) Ltd	Kenya Tea Development

Eastern Produce Kenya Ltd
Farmers Choice Ltd
Frigoken Ltd
Giloil Company Limited
Glacier Products Ltd
Global Allied Industries Ltd
Global Beverages Ltd
Global Fresh Ltd
Gonas Best Ltd
Hail & Cotton Distillers Ltd
Al-Mahra Industries Ltd
Alliance One Tobacco Kenya Ltd
Alpha Fine Foods Ltd
Alpine Coolers Ltd

Jetlak Foods Ltd
Karirana Estate Ltd
Kenafric Industries Limited
Kenblest Limited
Kenya Breweries Ltd
Kenya Nut Company Ltd
Kenya Sweets Ltd
Nestle Kenya Ltd
Nicola Farms Ltd
Palmhouse Dairies Ltd
Patco Industries Limited
Pearl Industries Ltd

Pembe Flour Mills Ltd

Mini Bakeries (Nbi) Ltd
Miritini Kenya Ltd
Mount Kenya Bottlers Ltd
Nairobi Bottlers Ltd
Nairobi Flour Mills Ltd
NAS Airport Services Ltd
Rafiki Millers Ltd
Razco Ltd
Re-Suns Spices Limited
Smash Industries Ltd
Softa Bottling Co. Ltd
Spice World Ltd

Wrigley Company (E.A.) Ltd

Plastics and Rubber

Betatrad (K) Ltd
Blowplast Ltd
Bobmil Industries Ltd
Complast Industries Limited

Kenpoly Manufacturers Ltd
Kentainers Ltd
King Plastic Industries Ltd
KingwayTyres&Automart Ltd
L.G. Harris & Co. Ltd
Laneeb Plastics Industries Ltd
Metro Plastics Kenya Limited
Ombi Rubber Rollers Ltd
Packaging Industries Ltd
Plastics & Rubber Industries Ltd
Polyblend Limited
Polyflex Industries Ltd
Polythene Industries Ltd
Premier Industries Ltd

Prestige Packaging Ltd
Prosel Ltd
Qplast Industries
Sumaria Industries Ltd

Super Manufacturers Ltd
Techpak Industries Ltd
TreadsettersTyres Ltd
Uni-Plastcis Ltd
Wonderpac Industries Ltd
ACME Containers Ltd
Afro Plastics (K) Ltd
Alankar Industries Ltd
Dune Packaging Ltd
Elgitread (Kenya) Ltd

Elgon Kenya Ltd
Eslon Plastics of Kenya Ltd
Five Star Industries Ltd
General Plastics Limited

Haco Industries Kenya Ltd
Hi-Plast Ltd
Jamlam Industries Ltd
Kamba Manufacturing (1986) Ltd
Keci Rubber Industries
Nairobi Plastics Industries
Nav Plastics Limited
Ombi Rubber
Packaging Masters Limited
Plastic Electricons
Raffia Bags (K) Ltd
Rubber Products Ltd
Safepak Limited
Sameer Africa Ltd

Sanpac Africa Ltd
Silpack Industries Limited
Solvochem East Africa Ltd
Springbox Kenya Ltd

Building sector

Central Glass Industries Ltd	Kenbro Industries Ltd	Manson Hart Kenya Ltd
KarsanMurji& Company Limited	Kenya Builders & Concrete Ltd	Mombasa Cement Ltd

Paper Sector

Ajit Clothing Factory Ltd	Paper House of Kenya Ltd	General Printers Limited
Associated Papers & Stationery Ltd	Paperbags Limited	Graphics & Allied Ltd
Autolitho Ltd	Primex Printers Ltd	Guaca Stationers Ltd
Bag and Envelope Converters Ltd	Print Exchange Ltd	Icons Printers Ltd
Bags & Balers Manufacturers (K) Ltd	Printpak Multi Packaging Ltd	Interlabels Africa Ltd
Brand Printers	Printwell Industries Ltd	Jomo Kenyatta Foundation
Business Forms & Systems Ltd	Prudential Printers Ltd	Kartasi Industries Ltd
Carton Manufacturers Ltd	Punchlines Ltd	Kenafric Diaries Manufacturers Ltd
Cempack Ltd	Conventual Franciscan Friers-Kolbe Press	Kitabu Industries Ltd
Chandaria Industries Limited	Creative Print House	Kul Graphics Ltd
Colour Labels Ltd	D.L. Patel Press (Kenya) Limited	Label Converters
Colour Packaging Ltd	Dodhia Packaging Limited	Modern Lithographic (K) Ltd
Colour Print Ltd	East Africa Packaging Industries Ltd	Pan African Paper Mills (EA) Limited
Kenya Stationers Ltd	Elite Offset Ltd	Ramco Printing Works Ltd
Kim-Fay East Africa Ltd	Ellams Products Ltd	Regal Press Kenya Ltd
Paper Converters (Kenya) Ltd	English Press Limited	SIG CombiblocObeikanKenya

Textile Sector

Africa Apparels EPZ Ltd	Kenya Trading EPZ Ltd	Spinners & Spinners Ltd
FulchandManek& Bros Ltd	Kikoy Co. Ltd	Storm Apparel Manufacturers Co. Ltd
Image Apparels Ltd	Le-Stud Limited	Straightline Enterprises Ltd
Alltex EPZ Ltd	Metro Impex Ltd	Sunflag Textile & Knitwear

		Mills Ltd
Alpha Knits Limited	Midco Textiles (EA) Ltd	Tarpo Industries Limited
Apex Appaels (EPZ) Ltd	Mirage Fashionwear EPZ Ltd	Teita Estate Ltd
Baraka Apparels (EPZ) Ltd	MRC Nairobi (EPZ) Ltd	Thika Cloth Mills Ltd
Bhupco Textile Mills Limited	Ngecha Industries Ltd	United Aryan (EPZ) Ltd
Blue Plus Limited	Premier Knitwear Ltd	UpanWasana (EPZ) Ltd
Bogani Industries Ltd	ProtexKenya (EPZ) Ltd	Vaja Manufacturers Limited
Brother Shirts Factory Ltd	Riziki Manufacturers Ltd	Yoohan Kenya EPZ Company Ltd
Embalishments Ltd	Rolex Garments EPZ Ltd	YU-UN Kenya EPZ Company Ltd
J.A.R Kenya (EPZ) Ltd	Silver Star Manufacturers Ltd	

Timber Sector

Economic Housing Group Ltd	Transpaper Kenya Ltd	Wood Makers Kenya Ltd
Eldema (Kenya) Limited	Twiga Stationers & Printers Ltd	Woodtex Kenya Ltd
Fine Wood Works Ltd	Uchumi Quick Suppliers	United Bags Manuf
Furniture International Limited	Rosewood Office Systems Ltd	Statpack IndustriesLtd
Hwan Sung Industries (K) Ltd	Shah Timber Mart Ltd	Taws Limited
Kenya Wood Ltd	Shamco Industries Ltd	Tetra Pak Ltd
Newline Ltd	Slumberland Kenya Limited	
PG Bison Ltd	Timsales Ltd	

Motor Vehicle Assembly and Accessories

Auto Ancillaries Ltd	General Motor East Africa Limited	Megh Cushion industries Ltd
VarsaniBrakelining Ltd	Impala Glass Industries Ltd	Mutsimoto Motor Company Ltd
Bhachu Industries Ltd	Kenya Grange Vehicle Industries Ltd	Pipe Manufacturers Ltd
Chui Auto Spring Industries Ltd	Kenya Vehicle Manufacturers Limited	Sohansons Ltd
Toyota East Africa Ltd	Labh Singh Harnam Singh Ltd	Theevan Enterprises Ltd
Unifilters Kenya Ltd		

Metal and Allied

Allied Metal Services Ltd	Morris & Co. Limited	KhetshiDharamshi& Co. Ltd
Alloy Street Castings Ltd	Nails & Steel Products Ltd	Nampak Kenya Ltd

Apex Street Ltd Rolling Mill Division	Orbit Engineering Ltd	Napro Industries Limited
ASL Ltd	Rolmil Kenya Ltd	Specialized Engineer Co. (EA) Ltd
ASP Company Ltd	Sandvik Kenya Ltd	Steel Structures Limited
East Africa Foundry Works (K) Ltd	Sheffield Steel Systems Ltd	Steelmakers Ltd
Elite Tools Ltd	Booth Extrusions Limited	Steelwool (Africa) Ltd
Friendship Container Manufacturers	City Engineering Works Ltd	Tononoka Steel Ltd
General Aluminum Fabricators Ltd	Crystal Industries Ltd	Welding Alloys Ltd
Gopitech (Kenya) Ltd	Davis &Shirtliff Ltd	Wire Products Limited
Heavy Engineering Ltd	Devki Steel Mills Ltd	Viking Industries Ltd
Insteel Limited	East Africa Spectre Limited	Warren Enterprises Ltd
Metal Crown Limited	Kens Metal Industries Ltd	

Pharmaceutical and Medical Equipment

Alpha Medical Manufacturers Ltd	Madivet Products Ltd	KAM Industries Ltd
Beta Healthcare International Limited	Novelty Manufacturing Ltd	KAM Pharmacy Limited
Biodeal Laboratories Ltd	Oss. Chemie (K)	Pharmaceutical Manufacturing Co.
Bulks Medical Ltd	Dawa Limited	Regals Pharmaceuticals
Cosmos Limited	Elys Chemical Industries	Universal Corporation Limited
Laboratory & Allied Limited	Gesto Pharmaceutical Ltd	Pharm Access Africa Ltd
Manhar Brothers (K) Ltd	GlaxoSmithkline Kenya Ltd	

Leather Products and Footwear

Alpharama Ltd	C & P Shoe Industries Ltd	East Africa Tanners (K) Ltd
Bata Shoe Co. (K) Ltd	CP Shoes	Leather Industries of Kenya Limited
New Market Leather Factory Ltd	Dogbones Ltd	

Source: Kenya Association of Manufacturers (KAM) Directory. June, 2014

APPENDIX IV

COMMUNALITIES FOR FACTOR ANALYSISTEST.

	initial	extraction
Statement		
Supplier relationship management		
How would you gauge your level of supplier involvement in problem solving	1.000	.794
How do you deal with suppliers who do not adhere to quality levels in your organization	1.000	.752
When do you involve suppliers during new product development	1.000	.628
Approximately what is the percentage of suppliers in the supplier development programme	1.000	.429
How often do you measure supplier performance and communicate the results to them	1.000	.621
How would you rate the level of communication systems connectivity between your suppliers and your organization	1.000	.700

Statement	initial	extraction
Process management		
How would you gauge your level of cross functional teams involvement in decision making regarding processes and operations	1.000	.701
What percentage of core processes are indentified and documented(a record exists)	1.000	.759
In the last six months what percentage of orders were filled late or not at all due to inflexible schedules after changes in demand or employee changes	1.000	.664
Approximately what is the percentage of suppliers in the supplier development programme	1.000	.677

Statement	initial	extraction
How often do you measure supplier performance and communicate the results to them	1.000	.673
How would you rate the level of communication systems connectivity between your suppliers and your organization	1.000	.763

Statement	initial	extraction
Customer relationship management		
How frequently do you interact with customers to set reliability, responsiveness, and other standards for your organization	1.000	.773
What percentage of complaints from customers has are unresolved for the last six months.	1.000	.861
How would you rate the effectiveness of your organizations customer value proposition statement in communicating value to the stakeholders	1.000	.736
How often does our organization conduct research to establish customers changing needs?	1.000	.782
How would you gauge the performance of value addition process of your products	1.000	.724
How often do you measure and evaluate customers satisfaction	1.000	.789

Statements	initial	extraction
Information Technology		
To what extent does your IT system facilitate visibility of the entire business for ease of management	1.000	.723
To what extent does your IT system support order commitment process	1.000	.719
To what extent does your IT system support order distribution management process?	1.000	.582
To what extent does your IT system support the make process	1.000	.701

	initial	extraction
	1.000	.720
To what extent does your IT system support the source process?		
	1.000	.724
To what extent does your IT system support demand management process?		

Performance attribute Statements	initial	extraction
SUPPLY CHAIN PERFORMANCE		
Percentage of orders delivered on time to customers	1.000	.737
percentage of filled orders by internal commit date	1.000	.754
Number of days it took your supply chain from orders to customer receipt	1.000	.780
Number is of days it took your supply chain to increase production by 20%.	1.000	.775
Total supply chain management costs as a percentage of revenue.	1.000	.686
cost of goods sold as a percentage of revenue	1.000	.719
Number of days it took a product in the inventory in your organization	1.000	.758
Number of days it takes your organization to have working capital turn around (cash to cash cycle time)	1.000	.863
Net asset turns in your organization.	1.000	.756
Earnings before interest and taxes as a percentage of revenue.	1.000	.746

APPENDIX V: NUMBER OF YEARS IN OPERATION

		Frequency	Percent	Valid Percent	Cumulative Percent
	1	2	1.4	1.6	1.6
	2	3	2.1	2.4	4.0
	3	1	.7	.8	4.8
	5	4	2.8	3.2	8.1
	6	2	1.4	1.6	9.7
	7	3	2.1	2.4	12.1
	8	2	1.4	1.6	13.7
	9	2	1.4	1.6	15.3
	10	13	9.2	10.5	25.8
	11	4	2.8	3.2	29.0
	12	3	2.1	2.4	31.5
	13	1	.7	.8	32.3
	14	1	.7	.8	33.1
	15	4	2.8	3.2	36.3
	16	1	.7	.8	37.1
	17	2	1.4	1.6	38.7
	18	1	.7	.8	39.5
	19	5	3.5	4.0	43.5
Valid	20	11	7.7	8.9	52.4
	21	4	2.8	3.2	55.6
	23	1	.7	.8	56.5
	25	5	3.5	4.0	60.5
	26	2	1.4	1.6	62.1
	28	1	.7	.8	62.9
	30	7	4.9	5.6	68.5
	32	3	2.1	2.4	71.0
	33	2	1.4	1.6	72.6
	37	1	.7	.8	73.4
	39	1	.7	.8	74.2
	40	5	3.5	4.0	78.2
	41	2	1.4	1.6	79.8
	42	1	.7	.8	80.6
	44	1	.7	.8	81.5
	46	3	2.1	2.4	83.9
	48	1	.7	.8	84.7
	50	5	3.5	4.0	88.7
	51	1	.7	.8	89.5

	Frequency	Percent	Valid Percent	Cumulative Percent
56	2	1.4	1.6	91.1
57	1	.7	.8	91.9
62	1	.7	.8	92.7
65	1	.7	.8	93.5
70	1	.7	.8	94.4
75	3	2.1	2.4	96.8
82	1	.7	.8	97.6
91	1	.7	.8	98.4
100	1	.7	.8	99.2
125	1	.7	.8	100.0
Total	124	87.3	100.0	
System	18	12.7		
Total	142	100.0		

Table 2 : Number of employees in all branches

		Frequency	Percent	Valid Percent	Cumulative Percent
	2	1	.7	.9	.9
	4	1	.7	.9	1.7
	6	2	1.4	1.7	3.4
	10	1	.7	.9	4.3
	12	1	.7	.9	5.2
	15	1	.7	.9	6.0
	20	2	1.4	1.7	7.8
	30	1	.7	.9	8.6
	31	2	1.4	1.7	10.3
	33	1	.7	.9	11.2
	38	1	.7	.9	12.1
Valid	40	4	2.8	3.4	15.5
	50	5	3.5	4.3	19.8
	51	1	.7	.9	20.7
	53	2	1.4	1.7	22.4
	54	1	.7	.9	23.3
	56	2	1.4	1.7	25.0
	58	1	.7	.9	25.9
	60	4	2.8	3.4	29.3
	70	1	.7	.9	30.2
	72	1	.7	.9	31.0
	80	2	1.4	1.7	32.8
	100	9	6.3	7.8	40.5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	110	1	.7	.9	41.4
	120	3	2.1	2.6	44.0
	127	1	.7	.9	44.8
	130	1	.7	.9	45.7
	150	6	4.2	5.2	50.9
	160	4	2.8	3.4	54.3
	180	1	.7	.9	55.2
	200	10	7.0	8.6	63.8
	215	1	.7	.9	64.7
	223	1	.7	.9	65.5
	230	1	.7	.9	66.4
	240	1	.7	.9	67.2
	250	1	.7	.9	68.1
	251	1	.7	.9	69.0
	273	1	.7	.9	69.8
	297	1	.7	.9	70.7
	300	9	6.3	7.8	78.4
	317	1	.7	.9	79.3
	350	1	.7	.9	80.2
	400	3	2.1	2.6	82.8
	450	1	.7	.9	83.6
	473	1	.7	.9	84.5
	500	4	2.8	3.4	87.9
	530	1	.7	.9	88.8
	600	3	2.1	2.6	91.4
	700	2	1.4	1.7	93.1
	800	1	.7	.9	94.0
	900	1	.7	.9	94.8
	1000	1	.7	.9	95.7
	1500	1	.7	.9	96.6
	2000	1	.7	.9	97.4
	4000	2	1.4	1.7	99.1
	10000	1	.7	.9	100.0
	Total	116	81.7	100.0	
Missing	System	26	18.3		
Total		142	100.0		

Table 3: Net assets

		Frequency	Percent	Valid Percent	Cumulative Percent
	3000000	1	.7	2.1	2.1
	10000000	1	.7	2.1	4.3
	15000000	1	.7	2.1	6.4
	20000000	2	1.4	4.3	10.6
	41000000	1	.7	2.1	12.8
	45000000	1	.7	2.1	14.9
	48550345	1	.7	2.1	17.0
	50000000	4	2.8	8.5	25.5
	60000000	1	.7	2.1	27.7
	75000000	1	.7	2.1	29.8
	90000000	1	.7	2.1	31.9
	100000000	4	2.8	8.5	40.4
	125000000	1	.7	2.1	42.6
	141584949	1	.7	2.1	44.7
	150000000	2	1.4	4.3	48.9
	250000000	1	.7	2.1	51.1
Valid	350000000	1	.7	2.1	53.2
	400000000	1	.7	2.1	55.3
	500000000	3	2.1	6.4	61.7
	600000000	1	.7	2.1	63.8
	900000000	2	1.4	4.3	68.1
	950000000	1	.7	2.1	70.2
	1000000000	5	3.5	10.6	80.9
	3000000000	1	.7	2.1	83.0
	6000000000	1	.7	2.1	85.1
	7000000000	1	.7	2.1	87.2
	10000000000	1	.7	2.1	89.4
	12143613105	1	.7	2.1	91.5
	15000000000	1	.7	2.1	93.6
	16000000000	1	.7	2.1	95.7
	50000000000	1	.7	2.1	97.9
	51000000000	1	.7	2.1	100.0
	Total	47	33.1	100.0	
		95	66.9		
Total		142	100.0		

APPENDIX VI: DESCRIPTIVE STATISTICS

Table 1: Suppliers' document that exists in the large manufacturing firms.

Documents	Frequency	Percent
minutes for supplier meetings	14	11
supplier performance records	20	15
Supplier visit files	8	6
Records on supplier interaction forums	3	2
minutes for supplier meetings and Supplier performance records	6	5
minutes for supplier meetings and Supplier visit files	11	8
minutes for supplier meetings and Supplier complaints resolution records	4	3
minutes for supplier meetings and records on supplier interaction forums	2	2
Supplier performance records and Supplier visit files	16	12
Supplier performance records and Supplier complaints resolution records	1	1
Supplier visit files and Supplier complaints resolution records	1	1
Supplier complaints resolution records and records on supplier interaction forums	1	1
minutes for supplier meetings , Supplier performance records and Supplier visit files	18	14
minutes for supplier meetings , Supplier performance records and Supplier complaints resolution records	11	8
minutes for supplier meetings , Supplier performance records and records on supplier interaction forums	1	1
minutes for supplier meetings , Supplier visit files and Supplier complaints resolution records	2	2
minutes for supplier meetings , Supplier visit files and records on supplier interaction forums	1	1
Supplier performance records , Supplier visit files and Supplier complaints resolution records	12	9
Supplier visit files ,Supplier complaints resolution records and records on supplier interaction forums	1	1

Total	**133**	**100**

Table 2: Practices large manufacturing firms employ to enhance good supplier

Relationships

Practices to enhance good supplier relationship	Frequency	Percent
Holding meetings	9	8
Holding meetings and Visiting suppliers	2	2
Holding meetings and Payment on time	1	1
Visiting suppliers	3	3
Improved technology	1	1
Standard quality	11	10
Payment on time	21	19
Payment on time and Trainings	1	1
Respect suppliers	1	1
Listen to grievances and Communication	18	17
After sales services	1	1
Regular updates for new products	6	6
Listen to grievances	2	2
Certification	1	1
Certification and Payment on time	1	1
Encouraging them	1	1
Trainings	2	2
Holding meetings and Evaluate suppliers	1	1
Visiting suppliers and Communication	2	2
Payment on time and Visiting suppliers	1	1
Payment on time and Standard quality	2	2
Respect suppliers and Payment on time	2	2
Payment on time and Communication	1	1
Payment on time and After sales services	1	1
Respect suppliers and Visiting suppliers	1	1
Evaluate suppliers and Communication	1	1
Improved technology and Communication	1	1
Communication and Standard quality	5	5
Communication and Evaluate suppliers	1	1
After sales services and Improved technology	1	1

Practices to enhance good supplier relationship	Frequency	Percent
After sales services and Evaluate suppliers	1	1
Good management and Communication	1	1
Visiting suppliers, Payment on time and Communication	1	1
Standard quality ,Payment on time and Communication	2	2
Total	**109**	**100**

Table 3: Descriptive Statistics on supplier relationship practices

	Mean	Std. Deviation	Minimum	Maximum	N
How are serious conflicts involving supplier resolved in your organization?	4.14	1.376	1	5	140
How do you deal with suppliers who do not adhere to quality levels in your organization?	3.32	.905	1	5	141
When do you involve suppliers during new product development	3.79	1.433	1	5	141
Approximately what is the percentage of suppliers who are in the supplier development programme?	2.50	1.175	1	5	134
How often do you hold networking meetings with your suppliers?	3.48	1.420	1	5	137
How often do you measure supplier performance and communicate the results to them?	3.78	1.358	1	5	141
How does your organization maintain data and communication flow with its suppliers	3.64	.897	1	5	141
Aggregate scores	3.5288	0.8028			

Table 4: Descriptive Statistics on Process Management practices in large manufacturing firms in Kenya

	Mean	Std. Deviation	Minimum	Maximum	N
Who makes decisions regarding processes throughout the entire operations in your organization	3.31	.866	1	5	140
For what major reason are core processes documented in your organization	3.76	1.008	2	5	138
What percentage would you give the ability of your organization in managing data flow through the manufacturing processes	3.60	1.022	1	5	138
What percentage would you give the performance of your organization in adhering to production schedules	3.84	.950	1	5	139
How is quality testing and adherence in your organizations manufacturing processes done?	3.65	1.609	1	5	140
What percentage would you give real time visibility between manufacturing operations and customer orders	3.58	.909	1	5	139
Aggregate score	3.6217	1.09			

Table 5: Methods that organizations use to constantly communicate and provide feedback from customers.

Methods used for communication to customers	Frequency	Percent
Call centres	15	11
Exhibitions	10	8
Demonstrations on new product use	6	5
Customer care desks	28	21
Toll free telephones	1	1
Customer suggestion boxes	7	5
personal sales representative	1	1
Call centers and Exhibitions	2	2
Call centres and Customer care desks	1	1
Call centres and Customer suggestion boxes	1	1
Membership clubs and Demonstrations on new product use	1	1
Exhibitions and Customer care desks	2	2
Demonstrations on new product use and Customer care desks	3	2
Demonstrations on new product use and Customer suggestion boxes	1	1
Customer care desks and Customer suggestion boxes	3	2
Customer care desks and personal sales representative	1	1
Toll free telephones and Customer suggestion boxes	1	1
Call centers, Membership clubs and Exhibitions	4	3
Call centers, Membership clubs and Demonstrations on new product use	2	2
Call centers, Membership clubs and Customer care desks	2	2
Call centers, Membership clubs and Toll free telephones	1	1
Call centers, Exhibitions and Demonstrations on new product use	2	2
Call centers, Exhibitions and Customer suggestion boxes	1	1
Call centers, Demonstrations on new product use and Customer care desks	3	2
Call centers, Demonstrations on new product use and Customer suggestion boxes	1	1
Call centers, Customer care desks and Customer suggestion boxes	2	2

Methods used for communication to customers	Frequency	Percent
Membership clubs, Exhibitions and Demonstrations on new product use	2	2
Membership clubs, Customer care desks and Toll free telephones	1	1
Exhibitions, Demonstrations on new product use and Customer care desks	4	3
Exhibitions, Demonstrations on new product use and Customer suggestion boxes	1	1
Exhibitions, Customer care desks and Toll free telephones	1	1
Exhibitions, Customer care desks and Customer suggestion boxes	7	5
Demonstrations on new product use, Customer care desks and Toll free telephones	1	1
Demonstrations on new product use, Customer care desks and Customer suggestion boxes	2	2
Call centres ,Membership clubs, Exhibitions and Demonstrations on new product use	2	2
Call centres ,Membership clubs, Exhibitions and Customer care desks	3	2
Call centres ,Exhibitions, Customer care desks and Customer suggestion boxes	1	1
Call centres ,Demonstrations on new product use, Customer care desks and Customer suggestion boxes	1	1
Exhibitions,Demonstrations on new product use, Customer care desks and Toll free telephones	1	1
Exhibitions , Demonstrations on new product use, Customer care desks and Customer suggestion boxes	1	1
Exhibitions, Customer care desks , Toll free telephones and Customer suggestion boxes	1	1
Total	131	100

Table 6: Practices employed by manufacturing firms to enhance effective CRM

Practices To Enhance Effective CRM	Frequency	Percent
Having a system	5	8
Research on challenges	5	8
Good customer care	12	19
After sale	8	13
Follow up	1	2
Customer survey	7	11

Being up to date	1	2
ISO 9000 certification	4	6
Holding seminars	3	5
Quality products	5	8
Survey	1	2
Research on challenges and Good customer care	1	2
Research on challenges and after sale	1	2
Research on challenges and Holding seminars	1	2
good customer care and after sale	1	2
good customer care and ISO 9000 certification	1	2
After sale and Good customer care	1	2
Having a system and quality products	1	2
Research on challenges ,Good customer care and Being up to date	1	2
research on challenges ,good customer care and ISO 9000 certification	1	2
good customer care and Quality products	1	2
After sale, being up to date and Holding seminars	1	2
Total	63	100

Table 7: Descriptive Statistics on customer relationship management practices in

large manufacturing firms in Kenya

	Mean	Std. Deviation	Minimum	Maximum	N
How frequently do you interact with customers to set reliability, responsiveness, and other standards for your organization?	3.61	1.358	1	5	137
Who handle customer complaint in your organization to ensure resolution	3.56	1.019	1	5	140
What does your organizations customer value proposition statement communicate to the stakeholders?	3.77	1.229	1	5	124

How often does our organization conduct research to establish customers changing needs?	3.89	1.323	1	5	140
How often do you measure and evaluate customer satisfaction?	3.91	1.299	1	5	139
Approximately what percentage of your budget is set aside to cater for customer surveys	2.63	1.164	1	5	126
Aggregate scores	3.5858	0.81804			

Table 8: How the organizations support IT functioning of supply chain processes.

Supply chain processes	Frequency	Percent
Recruitment of personnel skilled in IT supply chain functions	24	21
Represented in top management decision making meetings on IT functions	7	6
IT training	5	4
IT budget	3	3
Facilitate IT connectivity with members of the supply chain	8	7
Recruitment of personnel skilled in IT and top management decision	3	3
Recruitment and IT training	4	4
Recruitment and IT connectivity	10	9
top management decision and IT budget	2	2
top management decision making and IT connectivity	2	2
IT training and IT budget	1	1
IT training and IT connectivity	3	3
Recruitment ,top management decision making and IT training	11	10
Recruitment ,top management decision making and IT budget	1	1
Recruitment, IT training and IT budget	9	8
Recruitment, IT training and IT connectivity	5	4
Recruitment , IT budget and IT connectivity	3	3
top management decision making ,IT budget and IT connectivity	1	1
IT training ,IT budget and IT connectivity	3	3

Recruitment, top management decision making , IT training and IT budget	7	6			
Recruitment , IT training ,IT budget and IT connectivity	1	1			
Total	**113**	**100**			

Table 9: Descriptive Statistics on IT support management practices

	Mean	Std. Deviation	Min	Max	N
What percentage would you give your organization IT system ability to support product life cycle management?	3.18	1.124	1	5	125
What percentage would you give your organization IT system ability to facilitate visibility of the entire business for ease of management?	3.36	.950	1	5	126
What percentage would you give your organization IT system ability to support order commitment process?	3.41	1.101	1	5	127
What percentage would you give your organization IT system ability support order distribution management process?	3.39	1.132	1	5	120
What percentage would you give your organization IT system ability support the manufacturing process?	3.45	1.139	1	5	125
What percentage would you give your organization IT system ability support the source process?	3.29	1.132	1	5	122
What percentage would you give your organization IT system ability to support demand management process?	3.44	1.054	1	5	124
Aggregate scores	3.3169	1.090			

Table 10: Descriptive Statistics on supply chain performance of the large manufacturing firms in Kenya

Performance Attribute	Mean	Std. Deviation	Minimum	Maximum	N
Percentage of orders delivered on time to customers	3.3533	.93706	1.40	5.00	140
Percentage of filled orders by internal commit date.	3.3830	.92915	1.00	5.00	134
Number of days it took your supply chain from orders to customer receipt.	2.8857	1.07714	1.00	5.00	139
Number is of days it took your supply chain to increase production by 20%.	2.9601	1.02139	1.00	5.00	131
Total supply chain management costs as a percentage of revenue	3.0527	.96106	1.00	5.00	128
Cost of goods sold as a percentage of revenue	3.0048	.92260	1.00	5.00	128
Number of days it took a product in the inventory in your organization	2.5500	.91786	1.00	5.00	133
Number of days it takes your organization to have working capital turn around [cash to cash cycle time].	2.6668	.94456	1.00	5.00	129
Net asset turns in your organization.	2.6969	.95099	1.00	5.00	120
Profitability Earnings before interest and taxes as a percentage of revenue	2.2110	.95804	1.00	5.00	120
Aggregate scores	3.0959	0.47350			

Appendix VII: Summary of empirical literature review and research gap

Author	Year	Country	Topic	Objective	Methods	Findings	Research gap
Hung, Fei, Chien &Yu-Ming	2011	Taiwan	The relationship among supplier capability, partnership and competitive advantage in Taiwan's semiconductor industry	To providing with the key factors to competitive advantages for them to manage competitive challenges and to continue organization's vitality	factor analysis, Pearson's correlation, and multiple regression analysis	Supplier's capabilities and partnerships have significantly positive correlation; both supplier's capabilities and partnerships have positively influence on competitive advantages.	-The study can be replicated in the Kenya to show whether the result applies in the Kenyan context. The research is limited to manufacturing companies in Spain and can be replicated in Kenya to show whether it will have
Marta, Beatrix, Lorenzo & Francesco	2013	Spain	Cooperation strategy in buyer-supplier relationships and its effect on buyer performance.	To explores the relationship between manufacturing firms and their suppliers, and its impact on financial performance of Spanish	Descriptive survey	That firms that exchange information with their suppliers, have a high degree of mutual dependence or develop suppliers, in other	

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Author	Year	Country	Topic	Objective	Methods	Findings	Research gap
				manufacturing companies		words, which cooperate with their suppliers, can achieve better financial performance, even when this type of relationship implies more time and resources than a competitive model with suppliers.	the same effect on buyer performance.
Raskovic & Makovec,	2012	Slovenia, Russia, Serbia and the United Arab Emirates	Buyer-Supplier Relationships and the Resource-Advantage Perspective: An Illustrative Example of	To analyze which and how much specific relational and/or transactional dimensions of buyer-supplier relationships affect transnational company	use of survey-based empirical research	buyer-supplier relationship competitiveness is mostly driven by interpersonal trust and joint problem solving (both relational	The research incorporates only the suppliers' perspective and not the TNC's perspective.

Author	Year	Country	Topic	Objective	Methods	Findings	Research gap
			Relational and Transactional Drivers of Competitiveness	(TNC) buyer-supplier relationship competitiveness.		determinants	
Richard	2002	Australia	Business process management as competitive advantage: a review and empirical study"	To discuss how these two constructs affect organizational performance	A cross-sectional survey type research study	Getting strategic objectives aligned with business processes, demonstrate executive commitment and empowers employees	Study was done in Australia
Gautam, Jay and Waleed (2004 (2004)	2004	North America	Capabilities, business processes, and competitive advantage: choosing the dependent variable in empirical tests of the	To find out whether adopting the effectiveness of business processes as a dependent variable may be more appropriate than adopting overall firm	Data used to measure independent and dependent variables in this study were collected through the use of a survey	Activities, routines, and business processes are the mechanisms through which resources and capabilities get exposed to market processes where their	Study was done in North America.

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Author	Year	Country	Topic	Objective	Methods	Findings	Research gap
			resource-based view"	performance as a dependent variable		ultimate value and ability to generate competitive advantages are realized.	
Ponsignon, Maull and Smart	2013		An empirical study of process improvement principles	To explore both the similarities and differences in the process improvement approaches of organizations.	Q-methodology	That 'removing non-value-adding tasks' and 're-sequence tasks' can be described as foundational principles of process improvement and that they are universally applicable.	Effect of process improvement on competitive advantage
Adele, Frikkie & Lindie	2005	South Africa	Implementing a customer relationship South Africa:South Africa	To determine how the implementing of a CRM programme could	Pearson's co-efficient factor analysis	This study has indicated that the implementation of a one-to-one marketing	Study was done in south Africa.

Author	Year	Country	Topic	Objective	Methods	Findings	Research gap
			management programme in an emerging market	optimize the relationship between a leading bank and its clients, and thereby to gain competitive advantage in the marketplace		of financial services in emerging markets do not differ from the way in which it would be implemented among customers in other economies	
Mehrdad & Mohammad	2011		The Effect Of Customer Relationship Management (CRM) On Achieving Competitive Advantage Of Manufacturing Tractor	Investigate the impact of customer relationship management in order to gain the competitive advantage in industrialized manufactures of Truck	descriptive survey	One of the most important factors in achieving the competitive advantage is the absolute concentration on the customer. Their results reveal a positive and significant	Emphasis on Manufacturing Tractors and Trucks Effect of CRM on creation of competitive
Tim, Timothy, & David	2012	Australia.	Customer Relationship Management and Firm	To examine the impact of customer relationship management (CRM)	Cross-sectional		

Author	Year	Country	Topic	Objective	Methods	Findings	Research gap
			Performance	on firm performance using a hierarchical construct model		path between a superior CRM capability and firm performance	advantage
George	2012	Canada	Characterizing the determinants of successful value chains	To detail factors that have been found to affect the success of value chains.	Comparative analysis	Value chain's structure is predominantly an outcome of the leadership, culture, and attitude and management processes of the businesses and individuals that together comprise the chain	Relationship between effective value chain chains and creation of competitive advantage
Awino, Judith and Peter.	2009	Kenya	Effectiveness of the value chain strategy in selected	Was to establish which core activities within the milk value chain	Descriptive survey	That managers performing value chain analysis need to take into	Emphasis is on producer owned dairy groups in Kenya

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Author	Year	Country	Topic	Objective	Methods	Findings	Research gap
			producer owned dairy groups in Kenya	directly affect the livelihoods of the farmers. T		account newly important business drivers that enhanced the livelihoods of the milk producers. organizations that seek to achieve excellent and sustainable performance standards using value chain principles will have to put in place a value creation, a mission/vision based on extensive knowledge of the customer	
Mohamed, Abdullah and Yasar	2010	UK	Extending the concept of supply chain: The effective management of value chains	To proposed model for the effective implementation of VCM, which covers four key elements supported by a drive on agility and speed	A case study approach		A case study carried out in UK Other practices that involve
Jyoti Bahl	2013	Jammu City	Human Resource Managem ent: A	To investigate the provision	Descriptive survey	The findings indicate that the	

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Author	Year	Country	Topic	Objective	Methods	Findings	Research gap
			Rationale behind Organization's Value Chain".	of human resource practices for the employees in these stores		organizations with good human resource practices have satisfied employees resulting in satisfied customers and customer retention also. Involvement is highly correlated with consistency and adaptability.	value chain support
Ul et al	2011	Pakistan	Relationship between Organizational Culture and Performance Management Practices: A Case of University in Pakistan	To expand the base of knowledge and empirically test the relationship between the components of organizational culture and performance management practices	Regression and correlation statistical analysis	Similarly, the other dimensions of organizational culture have a positive significant relationship with the performance manageme	Organizational culture and creation of competitive advantage in Kenya.

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Author	Year	Country	Topic	Objective	Methods	Findings	Research gap
Abbas	2014	Iraqi	The moderator role of organizational culture between intellectual capital and business performance: An empirical study in Iraqi industry	To explore the relationships between Intellectual capital and business performance through a moderator role of organizational culture	Quantitative survey approach Two models of regression analysis are applied to test the Interacting terms They tested the hypotheses using regression	nt practices The results of this study showed that intellectual capital elements (customer capital, human capital, structural capital, and relational capital) can have a direct effect on the business performance of Iraqi industry and through the moderator role of organizational culture.	Study was done in Iraqi and the setting of organizational culture may be different.
Huang, Fang, and Liu	2013	China.	The Moderating Role of Organizational Culture in	To examine how organizational culture moderates the relationship	regression	Their findings reveal that a target firm's perceived mediated	Emphasis is on power, trust, and a firm's eSCMS adoption

Author	Year	Country	Topic	Objective	Methods	Findings	Research gap
			the Relationship between Power, Trust, and eSCMS Adoption Intention"	between power, trust, and a firm's eSCMS adoption intention.	analysis	power would negatively impact its trust toward a dominant firm, while its perceived non-mediated power would positively affect its trust. Meanwhile, trust can positively influence the target firm's eSCMS adoption intention.	intention

APPENDIX VIII: NACOSTI RESEARCH AUTHORIZATION

THIS IS TO CERTIFY THAT:
MS. PERRIS WAMBUI CHEGE
of JOMO KENYATTA UNIVERSITY OF
AGRICULTURE AND TECHNOLOGY,
62000-200 Nairobi,has been permitted
to conduct research in *Nairobi County*

on the topic: *EFFECT OF BUSINESS*
VALUE CHAIN PRACTICES ON THE
SUPPLY CHAIN PERFORMANCE OF
LARGE MANUFACTURING FIRMS IN
KENYA.

for the period ending:
31st December,2016

Permit No : NACOSTI/P/15/1354/7191
Date Of Issue : 24th July,2015
Fee Recieved :Ksh 2,000

....
Applicant's
Signature

....
Director General
National Commission for Science,
Technology & Innovation

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