SUPPLY CHAIN MANAGEMENT PRACTICES AND COMPETITIVENESS OF GOVERNMENT AGENCIES IN THE KENYA ENERGY SECTOR

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DECLARATION

I declare that this research project is a presentation of my original work and it has never been presented in any other university or college for any academic purposes.

Signature.....Date.....

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This research project has been submitted for examination with my approval as the supervisor.

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DEDICATION

This work is dedicated to my wife, parents and my late Grandmother Mrs. Hellen Okeyo who laid a quality academic foundation for me and to my brothers, sisters and friends for their moral and financial support, encouragement and prayers throughout the duration of my studies.

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LIST OF ABBREVIATIONS

CRM	Customer Relationship Management
EDI	Electronic Data Interchange
ERC	Energy Regulatory Commission
ERP	Enterprise Resource Planning
GDC	Geothermal Development Company Limited
GSCM	Green Supply Chain management
IPPs	Independent Power Producers
IS	Information Sharing
JIT	Just In Time
KenGen	Kenya Electricity Generating Company
KETRACO	Kenya Electricity Transmission Company Ltd
KPLC	Kenya Power and Lighting Company
LP	Lean practices
MDGs	Millennium Development Goals
MOE	Ministry of Energy
MTP	Medium-Term Plan
QIS	Quality of Information Sharing
REA	Rural Electrification Authority
ROI	Return on Investment
SCM	Supply Chain Management
SPSS	Statistical Package for Social Sciences
SREP	Scaling Up Renewable Energy Sector Programme
SSP	Strategic Supplier Management

ABSTRACT

This study was carried out to determine the effect of supply chain management practices on competitiveness in Kenyan energy sector. The study sought to establish the supply Chain management practices adopted by Government agencies in the Kenyan energy sector, To determine the impact of the SCM practices on performance of agencies and to determine the challenges faced by the agencies in the Kenyan energy sectors in the implementation of the SCM practices. The research design used was descriptive design. Data was collected using a questionnaire that was administered through "drop- and -pick-later" method and analyzed using SPSS (version 22). Mean and standard deviation were used to analyze objective one and objective three whereas regression analysis was used to analyze the effect of supply chain management practices and competitiveness. The findings were presented in tables. It is clear that there is a significant relationship between supply chain management practices and competitiveness explained by the eight independent variables strategic supplier partnership, customer relationship, level of information sharing, quality of information, extent of outsourcing, lean practices, green supply chain management and postponement. The study only focused on the energy sector. Study concluded that the adoption of SCM practices improves the organizational performance and hence competitiveness. Therefore, the researcher recommended SCM practices need to be embraced to help the management team appreciates the direct impact of these practices. Adoption of flexible SCM practices through appropriate research will help efficiently and effectively meet the business diverse yet drastic changing needs as well as address challenges arising from a dynamic global business environment. The study recommended that; similar studies should be done in other sector of the Kenyan economy for comparison purposes and to allow for generalization of findings on the SCM practices in Kenya.

CHAPTER ONE: INTRODUCTION

1.1 Background to the study

Increasing globalization has led to an alarming concern regarding the improvement of the quality of the goods & services, customized services, inventory reduction, in-formation timing and the most important element i.e. the satisfaction of the ultimate customer. With increasing complexities the process of Supply Chain Management as well as the logistics process has become more & more difficult as the level of demand is at its peak. In order to attain sustainable competitive advantage the firms should effectively integrate as well as incorporate the SCM systems in their work place (Figueiredo, 1994).

Large companies today mainly focus on becoming efficient and flexible in their manufacturing of goods and service methods in order to handle uncertainty in the business environment, they need different strategies to manage the flow of goods from the point of production to the end user. However, they have not been able to formulate the right strategies required to achieve this noble task in SCM. This call for a strategic fit of an organization's core competencies, strategy and core capability, which is an emerging paradigm in the study of strategic management and specifically in SCM. Supply chain (SC) is a complex network of business entities involved in the upstream and downstream flows of products and services, along with the related finances and information (Beamon, Lambert & Cooper, 1998) & Mentzer, 2001).

Customers consistently demand that products are delivered faster, on time, and with no damage, this can only be achieved with proper coordination of efforts by linking systems and processes to create synergy. Each of these necessitates better coordination with suppliers and distributors, and constitutes the linkage between SCM core competencies; strategy and SCM core capabilities, which are not easy to match. This combination creates a competitive edge within the system that cannot be copied by the competitor in the market place; hence becomes core capability of the firm. The global orientation and increased performance-based competition, combined with rapidly changing technology and economic conditions; all contribute to market place uncertainty (Mentzer et al.,2001). This uncertainty requires greater flexibility on the part of the individual companies and

distribution channels, which in turn, demands for more flexibility in channel relationships. For this to be achieved, a firm must have a fit between SCM competencies, implementation of strategy and SCM capability with its suppliers and distributors. This will enhance competitive advantage of the business and improve corporate performance (Madhu P., Sudana, R., & Biru A. 2014).

From the Kenya perspective Supply chain management practices eg supplier selection appears to be the most significant variable as it helps in achieving high quality products and customer satisfaction. It is therefore not uncommon for the industrial customers and/or buyers to evaluate the ability of their suppliers in terms of the delivery of satisfactory quality, quantity, delivery, price, and service objectives which will in turn govern their decisions on supplier selection. According to Karimi (2006) some of the more important supplier attributes related to these prime purchasing objectives include past history, facilities and technical strengths, financial status, organization and management, reputation, systems, procedural compliance, communication, labor relations, and location. Close relationship with suppliers involves commitment and trust over an extended period of time, characterized by high levels of information exchange, trust, risk, cooperation and/or adaptation, and rewards between the two parties. A number of studies have singled out product quality, service capabilities, payment facilities and relationship commitment as some of the most important criteria (Karimi**,** 2006).

1.1.1 Supply Chain Management Practices

Supply chain management is described as one of the most influential developments in business management and has gain significance for improving the organizational competitiveness (Croom *et al*, 2006); Lambert and Cooper 2000; Giannakis and Croom2004; Gunasekaran 2004b; Cousin et al., .2006). In practice , supply chain management is regarded as successful business concept in the make or buy decision of a product / service by a firm and good practice to link all the trading partners and ensure cost effective and timely movement of materials and information's from the inceptions of a new products/service to its final consumption (Giannakis & Croom 2004). Academics and practioner agree that supply chain management can have positive impacts on a firm's performance (better quality product and customer service) (Shin *et al* 2000).

It has been claimed that with product life cycles shortening and technologies becoming increasingly imitable , effective SCM can be a major source of competitive advantage for firms (Simchi-Levi *et al.*2003) where competitive advantage may be sought via practices such as reduced inventories , lower costs and mutually beneficial supplier collaborations (Lysons and Farrington, 2006). Moreover, the benefits will not be at the expense of a company s partners but rather will make the supply chain as a whole more competitive(Christopher 1992; Lambert and Cooper, 2000).

The concept of supply chain management has attracted tremendous attention from the scholars over the last two decades (Alfalla-Luque and Medina Lopez, 2009). Croom *et al* (2000) suggest 11 subjects' areas – including, for examples, purchasing, logistics, marketing and organizational behavior-which are considered to be associated with SCM. They highlighted how different subject literatures have contributed work in SCM from different perspectives. Advancing from the original subjects of Logistics and Operations Management, SCM has incorporated issues in other areas such as strategic management, industrial organization, institutional economics and inter-organizational relationship (Cooper *et al.*1997; Giannakis and Croom2004).

Carter and Price (1995) assert that information is the life blood of all organizations. Inventory manager needs information technology in order to succeed in his work. Computers can assist stock control in calculating the optimum amount of stocks to hold and dispatch in order to satisfy the users requirements. The computer can do this by comparing inventory variables (stock levels, demand and delivery dates).The Electronic Data interchange, EDI is a system which enables direct communication between organizations without there being any human intervention. This technology has revolutionized inventory management. The international Data interchange association defines EDI as "the transfer of structured data, by agreed message standards from one computer system to another, by electronic means (Jessop, 1999). With the EDI system linking the buying organization with its suppliers the replenishment can be triggered at the instant the need arises and the message is transferred from the original destination without further possibility of corruption en route. An EDI link also enables the computers of suppliers and customers to interrogate each other about stock levels, production plans

and similar information so that activities are appropriately synchronized. This brings potential benefits in form of reduced paper work, greater accuracy of information, reduced staff costs and shorter lead times arising from instantaneous communication. Electronic point of sale, EPOS is another technology used in inventory management.

Lean production principle was pioneered by Womack *et al* (1990). This principle was linked with reduced inventories. The argument is that as inventory is reduced there will be profit improvement due to interest savings as well as a reduction in storage fees, handling and waste. These savings have been estimated by literature to be in the range of 20 -30 percent (Brigham & Gapenski, 1993). Lean Management is getting more and more attention in today's highly competitive environment. The proponents of Lean Inventory system argue that excess inventory will adversely affect the net cash flows of a firm. On the cost side, most obvious are the costs of holding inventory, which include the capital costs (interest or opportunity) and the physical cost (storage, insurance and spoilage). In recent years, a number of systems have been developed in the field of operations management to deal with excess inventory problem. Management–oriented systems include the Just-In-Time (JIT), the materials Requirements Planning systems (MRP) and Enterprise resource planning, ERP. Just-In-Time refers to a collection of practices that eliminate waste. These organization wide practices encompass the entire supply chain.

1.1.2 Competitiveness

According to Buckley *et al.* (1988), an organization is competitive if it can produce products and services of superior quality and lower cost than its domestic and international competitors. Competitiveness is synonymous with a firm's long-run profit performance and its ability to compensate its employees and provide superior returns to its owners. Hence, a firm's competitiveness can be measured by its price relative to competitors, market share and degree of profitability over a relevant period of time. Competitive advantage is the extent to which an organization is able to create a defensive position over its competitors (McGinnis, *et al*, 1999). It comprises capabilities that allow an organization to differentiate itself from its competitors and is an outcome of critical management decisions. The empirical literature has been quite consistent in identifying price/cost, quality delivery and flexibility as important competitive capabilities (Tracy

M.*et al*., 1999).The Global Competitiveness Report 2013–2014 is being released at a time when the world economy is undergoing significant shifts.

Porter (2007) describes competitive strategy as "the search for a favorable competitive position in an industry, the fundamental arena in which competition occurs" he further explain that "competitive strategy aim to establish a sustainable position against the forces that determine industry competition", This involves identifying sources of competition in this ever changing environment then developing strategies that match organizational capabilities to the change in environment. Ansoff (1998), described competitive strategy as the distinctive approach which the firm uses or intends to use to succeed in her market and adds that the formulation of competitive strategy include the consideration of strength weakness opportunities and threats. Porter (1985) outlines three approaches to competitive strategy and this are cost leadership, differentiation and focus. Once the three approaches are practiced the company is able to get an above industry performance. Porter continue to elaborate that if a firm doesn't practice one of the three approaches it will be stuck in the middle since firms face a common environment and competitive advantage is gained by implanting appropriate competitive strategy.

According to Thompson and Strickland (2002) Strategy is the game plan that management has for positioning the company in its chosen market arena, competing successfully, pleasing customers and achieving good business performance. Linn (2007) depicted strategy as the match between an organizations resources and skills and the environmental opportunities as well as the risks it faces and the purposes it wishes to accomplish. The purpose of strategy is to give directional cues to the organization that permit it to achieve its objectives while responding to the opportunities and threats in the environment (Pearce and Robinson, 2001).Johnson and Scholes (2002) define strategy as the direction and scope of an organization over a long term which achieves advantage for the organization through its configuration of resources within a challenging environment with an aim to meet the needs of market and fulfill stakeholders expectations and is often stated explicitly in the organization mission statement.

A company that has well formulated competitive strategy more often than not is able to enjoy competitive advantage and according to Thomson and Stickland (1993).“ a company has competitive advantage whenever it has an edge over its rival in securing customers and defending competitive forces. “Sustainable competitive advantage is born out of core competencies that yield long term benefit to company. They must identify and strengthen the transformative forces that will drive future economic growth. Particularly important will be the ability of economies to create new value-added products, processes, and business models through innovation sss(Global competitiveness Report 2013 – 2014).

The technology industry is one of the leading industries with respect to strong research and innovation. And when it comes to setting the pace using innovation as leverage; Apple and Sony are the two companies that have held their leadership position using innovation as a competitive advantage. Being recognized all over the world as a respected brand is a sustained competitive advantage that companies such as Virgin, Apple and Coca cola have used as leverage to hold the market sway for years. Virgin is a company that has used its brand name as leverage to break into new markets in completely new territories. Corporate reputation is a form of sustained competitive advantage that companies such as Price Waterhouse and Berkshire Hathaway have leveraged to become world class entities. Wal-Mart as at the time of this writing is the most capitalized company in the world. Thanks to its low pricing strategy that became its strong source of competitive advantage. According to Basker (2007), Wal-Mart is at the forefront in integrating RFID technology in which each individual item receives a tag that reads by a radio signal, hence facilitating tracking shipments, inventory, and sales. RFID has made Wal-Mart’s operations to be efficient and effective as they are able to send and receive real time data to the networks thus making it edge against its competitors in the retail industry (Slemmons*et al*., 2011).

1.1.3 Energy Sector in Kenya

Kenya has a long-term development strategy, The Vision 2030, whose aim is to drive the country into a globally competitive and prosperous economy with high quality of life. Covering the period 2008 to 2030, the country’s new development blueprint aims to

transform Kenya into a newly industrializing, "middle-income country providing a high quality life to all its citizens by the year 2030." The Medium-Term Plan (MTP - 2008 to 2012) was prepared to implement the first phase of the strategy. It calls for rehabilitating the road network, upgrading the railways, improving urban public transport, and expanding access to electricity and safe water. The energy sector has been restructured as per the Session Paper No.4 of 2004 and the Energy Act No.12 of 2006. The institutional arrangement in the electricity sub sector in Kenya comprises - the Ministry of Energy (MOE), Energy Regulatory Commission (ERC), Kenya Generating Company (KenGen), Kenyan Power and Lighting Company (KPLC), the Rural Electrification Authority (REA), Kenya Electricity Transmission Company (KETRACO), Geothermal Development Company (GDC) and Independent Power Producers (IPPs). According to Scaling up Renewable Energy Sector Programme (SREP) Investment Plan for Kenya May, 2011.The country utilizes various sources to generate electricity ranging from hydro, geothermal, thermal and wind. Hydro is the leading source with install capacity of 766.88MW which is 64.9% of the company install capacity.

The Kenya electricity sub-sector market is liberalized with the several players involved. There are three distinct levels in the market; generation, transmission and distribution. The energy sector as a whole has been undergoing restructuring and reforms as articulated in the Sessional Paper No.4 of 2004 and the Energy Act No.12 of 2006The Ministry of Energy (MoE) is mandated by both the Policy and the Law for overall coordination of the Sector. It is also responsible for formulation and articulation of policies through which it provides an enabling environment to all operators and other stakeholders in the energy sector. The Energy Regulatory Commission (ERC) is an independent single sector regulatory agency established under the Energy Act, 2006 with the responsibility for economic and technical regulation of electric power, renewable energy and down-stream petroleum sub-sector. Rural Electrification Authority (REA) is an Authority established under the Energy Act, 2006 mandated to, inter alia, implement the rural electrification programme, develop and update the rural electrification master plan, and promote the use of renewable energy sources. The authority reports to the Ministry of Energy.

Kenya Electricity Generating Company (KenGen) is the leading electricity generator providing over 70% of the effective generating capacity to the national grid. The company is listed at the Nairobi Stock Exchange with 70% shareholding in Government and 30% private. Kenya Power and Lighting Company (KPLC), is the national power utility responsible electricity distribution and supply. It purchases power in bulk from KenGen and IPPs currently in operation through Power Purchase Agreements approved by the ERC. Kenya Electricity Transmission Company Ltd(KETRACO) is a corporation wholly owned by the Government and mandated to plan, design, construct, own, operate and maintain high-voltage (132kV and above) electricity transmission infrastructure that will form the backbone of the national transmission grid and regional interconnection. Geothermal Development Company Limited (GDC) is a special purpose vehicle company wholly owned by the Government established to accelerate geothermal development in the country. Independent Power Producers (IPPs): currently six IPPs are operating in the country contributing approximately 12% of the effective generating capacity to the national grid (*See appendix 2).*

1.2 Statement of the Problem

Basnet*et al*., (2005) point that the primary role of SCM is to meet the customer requirement in terms of providing the customer with the right product, of right quality and quantity, from a right source, at a right price and finally utilizing the right technology. Evaluating the performance of the government sector on the above basis will show that the Energy sector in Kenya does not meet the above criteria successfully. There is need therefore for the Energy sector in Kenya to develop effective supply chain practices in order to remain competitive and this forms the basis of this research in which the role of SCM practices as a source of competitiveness will be investigated. Chong and Ooi (2008), assert that a good organized and executed SCM will make possible organizations to decrease their inventories, have better customer services and diminishing costs of developing their inventory turns. Pressure is growing on public bodies to improve performance of how they procure goods, services and works contracts. It is known that despite government concentrated efforts in reforming procurement systems, there is still a problem attributable to huge losses in improper procurement to about KShs 30 billion (Central Bank of Kenya, 2013). Public procurement requires a tight system to

be followed and adopted since public resources are scarce. The efficiency of the procurement process is a primary consideration of every procurement regime. The operations of the public sector institutions has lately been criticized for a number of reasons including slow speed of implementing projects, alleged corruption in the procurement process as well as a slow process of service delivery.

Suppliers of services to the government have complained of too much bureaucracy in the process which in turn has led to delayed payment and delivery of goods and services to the public in cognizance of the problem facing the public sector in Kenya. One of the factors that can be implemented to improve public sector competitiveness is adoption of effective and efficient SCM

Local studies have been done on SCMPs and service delivery. For instance, Joseph (2012) on commercial electricity SCM practices in Kenya, (Opiyo, 2012) information integration on SCM among food processing firms in Nairobi, Kenya (Moenga, 2012) SCMPs and challenges for the small scale tea sector in Kenya, (Mogire,2011) SCM practices in five star hotels in Nairobi, (Onyango, 2012) SCMPs in cement industry in Kenya. (Kagendo, 2014) SCM and competitiveness in the National Government of Kenya From the research findings, misinformed advocacy groups, lack of clear definitions, incomparable environmental information and awareness of marketing and sales were the impediments of information technology factors that were influencing supply chain management practices.

Although research has been done on energy sector in Kenya none has focused on SCM practices and competiveness adopted by energy sectors. This study therefore aimed at bridging this gap and seeking answers to research questions which were, What were the supply Chain management practices adopted in Government agencies in the Kenyan energy sector, What were the impacts of the implementation of the SCM practices on performance in Government owned entities in the Kenyan energy sector and what were the challenges faced by Government agencies in the Kenyan energy sectors while implementing the SCM practices.

1.3 Objectives of the Study

The general objective of study was to establish supply chain management practices and organizational competiveness of Government agencies in Kenyan Energy Sector.

The specific objectives of this study were:

i. To establish the supply Chain management practices adopted by Government agencies in the Kenyan energy sector

ii. To determine the impact of the implementation of the SCM practices on performance in Government agencies in the Kenyan energy sector

iii. To determine the challenges faced by Government agencies in the Kenyan energy sectors in the implementation of the SCM practices.

1.4 Value of the Study

The study will be of significance to the various institutions since it will establish the major challenges facing purchasing officers in today's Government owned entities in the energy sectors. The study will highlight a full description of these factors, their causes and how they affect procedures, this will make it possible to pinpoint the crucial areas that need much attention when executing public procurement activities.

The study will have impact towards creating a foundation for development of effective procurement strategies that will help the procurement team in carrying out their daily activities. Procurement officers will know how to handle the challenges facing them in supplier selection and the key parameters to consider in selection.

The study will be significance to the general public since it will bring out how a whole picture on how Government owned entities in the energy sectors will enhance transparence and strengthening of key parameter areas on the side of suppliers in order to quality for selection.

The study will be important to various scholars, students and researchers who might be involved in supply chain management, the documented report of this study will be easily

acquired from the library and it will equip the learners with more knowledge and skills on challenges experienced by industries in supplier selection. This will lead to development of further research activities that will address other factors that may not be addressed by this study and hence providing more effective solutions to effectively handle SCM practices challenges in energy sectors.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter discusses the literature review of the study, the review will draw it's focus on the past major activities that had been done on procurement related issues; the information will be obtained from past reference materials such as magazines, newspapers and journals. The purpose of the literature review will be to avoid unnecessary intentional or accidental duplication of materials already covered. This chapter will go through the past studies, theoretical review, critical review, research gaps and summary.

2.2 Supply Chain Management Practices

SCM practices have been defined as a set of activities undertaken in an organization to promote effective management of its supply chain. (Donlon, 1996) describes the latest evolution of SCM practices, which include supplier partnership, outsourcing, and cycle to represent SCM practices, in their empirical study. (Alvarado, 2001) include in their list of SCM practices concentration on core competencies, use of inter-organizational systems such as EDI, and elimination of excess inventory levels by postponing customization toward the end of the supply chain. Tan *et al*. identify six aspects of SCM practice through factor analysis: time compression, continuous flow, and information technology sharing. Tan et al. use purchasing, quality, and customer relations supply chain integration, information sharing, supply chain characteristics, customer service management, geographical proximity and JIT capability. (Chen, 2004) use supplier base reduction, long-term relationship, communication, cross-functional teams and supplier involvement to measure buyer–supplier relationships. (Mentzer,2001) identifies the concept SCM as including agreed vision and goals, information sharing, risk and award sharing, cooperation, process integration, long-term relationship and agreed supply chain leadership (Mentzer, 2001).

The five constructs cover upstream (strategic supplier partnership) and downstream (customer relationship) sides of a supply chain, information flow across a supply chain (level of information sharing and quality of information sharing), and internal supply chain process (postponement). It should be pointed out that even though the above

dimensions capture the major aspects of SCM practice, they cannot be considered complete. Other factors, such as geographical proximity, JIT/lean capability, cross-functional teams, logistics integration, agreed vision and goals, and agreed supply chain leadership are also identified in the literature (Mentzer, 2001).

2.2.1 Strategic supplier partnership

The Strategic supplier partnership is the long term relationship between the organization and its suppliers. It is designed to leverage the strategic and operational capabilities of individual participating organizations to help them achieve significant ongoing benefits. A strategic partnership emphasizes direct, long-term association and encourages mutual planning and problem solving efforts. Such strategic partnerships are entered into to promote shared benefits among the parties and ongoing participation in one or more key strategic areas such as technology, products, and markets. Strategic partnerships with suppliers enable organizations to work more effectively with a few important suppliers who are willing to share responsibility for the success of the products. 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 (Chen &Paulraj, 2004; Mentzer*et al.*, 2001).

Partnering as a commitment by both customers and suppliers, regardless of size, to a long term relationship based on clear, mutually agreed objectives to strive for world class capability (Lysons & Gillingham, 2003). The emphasis is on good working relations between customers and suppliers. The concept of supplier partners developed strongly in the 1980s as a result of the movement towards just-in–time (JIT) manufacturing. JIT emphasis reduction in waste, shortening of lead times, improvement and simplicity. These are also the goals of supplier partnership (Bicheno, 1996).

2.2.2 Customer relationship

Customer relationship comprises the entire array of practices that are employed for the purpose of managing customer complaints, building long-term relationships with customers, and improving customer satisfaction. Noble & Tan *et al*., (1997) consider customer relationship management as an important component of SCM practices. As

pointed out by Day (1988) committed relationships are the most sustainable advantages because of their inherent barriers to competition. Good relationships with supply chain members, including customers, are needed for successful implementation of SCM programs. Close customer relationship allows an organization to differentiate its product from competitors, sustain customer loyalty, and dramatically extend the value it provides to its customers (Noble, 1997).

2.2.3 Level of information sharing

Levels of information sharing are important aspects for the practices of SCM and have been treated as independent constructs in the past SCM studies. Level (quantity aspect) of information sharing refers to the extent to which critical and proprietary information is communicated to one's supply chain partner. Shared information can vary from strategic to tactical in nature and from information about logistics activities to general market and customer information. Many researchers have suggested that the key to the seamless supply chain is making available undistorted and up-to-date marketing data at every node within the supply chain. By taking the data available and sharing it with other parties within the supply chain, information can be used as a source of competitive advantage.

Lalonde (1998) considers sharing of information as one of five building blocks that characterize a solid supply chain relationship. According to Stein and Sweat, supply chain partners who exchange information regularly are able to work as a single entity. Together, they can understand the needs of the end customer better and hence can respond to market change quicker (Lalonde, 1998).

2.2.4 Quality of information sharing

This includes such aspects as the accuracy, timeliness, adequacy, and credibility of information exchanged. While information sharing is important, the significance of its impact on SCM depends on what information is shared, when and how it is shared, and with whom. Divergent interests and opportunistic behavior of supply chain partners, and informational asymmetries across supply chain affect the quality of information. It has been suggested that organizations will deliberately distort information that can potentially reach not only their competitors, but also their own suppliers and customers. It appears

that there is a built-in reluctance within organizations to give away more than minimal information since information disclosure is perceived as a loss of power.(Cooper,1998).

2.2.5 Postponement

Postponement is defined as the practice of moving forward one or more operations or activities (making, sourcing and delivering) to a much later point in the supply chain. Two primary considerations in developing a postponement strategy are: determining how many steps to postpone, and determining which steps to postpone. Postponement allows an organization to be flexible in developing different versions of the product in order to meet changing customer needs, and to differentiate a product or to modify a demand function. In general, the adoption of postponement maybe appropriate in the following conditions: innovative products; products with high monetary density , high specialization and wide range; markets characterized by long delivery time, low delivery frequency and high demand uncertainty; and manufacturing or logistics systems with small economies of scales and no need for special knowledge.(Cooper,1998).

2.3 Competitiveness

Organizational performance refers to how well an organization achieves its market-oriented goals as well as its financial goals. The short-term objectives of SCM are primarily to increase productivity and reduce inventory and cycle time, while long-term objectives are to increase market share and profits for all members of the supply chain. Financial metrics have served as a tool for comparing organizations and evaluating an organization's behavior over time. Any organizational initiative, including supply chain management, should ultimately lead to enhanced organizational performance. A number of prior studies have measured organizational performance using both financial and market criteria, including return on investment (ROI), market share, profit margin on sales, the growth of ROI, the growth of sales, the growth of market share, and overall competitive position. In line with the above literature, the same items will be adopted to measure organizational performance in this study.

Competitive advantage is the measure of a firm's competencies and performance against the factors prevailing in the firm's external environment (Day, 1994). Threat of new

entrants and bargaining power of buyers are some of the forces influencing the competition in the market. To counter these forces and gain a sustainable competitive advantage, the firm has to position itself strategically in the market along several parameters. The term sustainable competitive advantage was proposed by (Porter ,1985), when he discussed the basic types of competitive strategies firms can follow for example, low cost, differentiation, and focus, to achieve sustainable competitive advantage. However, there is no common meaning for "competitive advantage" in practice or in the marketing strategy literature.

Sometimes the term is used interchangeably with "distinctive competence" to mean relative superiority in skills and resources (Boulding& Christen, 2003). (Handerson1983) in his work summarizes all previous works which deal with sustainable competitive advantage. Based on the analysis of different perspectives found in the literature he defined the term to mean the prolonged benefit of implementing some unique value-creating strategy not simultaneously being implemented by any current or potential competitor, along with the inability to duplicate the benefits of this strategy (Handerson, 1983). Different authors name different sources of sustainable competitive advantage.

The most widespread theory explaining sources of competitive advantage is the “resource-based view” (Day & Wesley 1988), presented the framework to explain the link between the sources of advantage and performance outcomes. They name superior skills and superior resources as the main sources of competitive advantage. Later in resource based theories these two main sources of advantage were called assets and capabilities respectively. Assets are the resource endowments the business has accumulated, and capabilities are the glue that keeps these assets together and enables them to be deployed advantageously. Capabilities differ from assets in that they cannot be given a monetary value, as can tangible plant and equipment, and are so deeply embedded in the organizational routines and practices that they cannot be traded or imitated (Ulrich & Lake, 1991).

2.4 Supply Chain Management and Competitiveness

In today's competitive business there is an increased focus on delivering value to the customer. The focus on attention of most of businesses is providing products and services that are more valuable compared to its competitors. Concurrent to the focus on customer value, the marketplace in which businesses operate today is widely recognized as being complex and turbulent (Christopher, 2000; Goldma ,*et al*., 1995). The growth of supply chain aims to improve profitability, customer response and ability to deliver value to the customer's and also to improve the interconnection and interdependence among firms. Due to market expanding from domestic market to global market increase customer demands, for instance demanding lower prices, faster delivery, higher quality products or services and increase the variety of items (Braunscheidel, 2005). According to Towiland Christopher, (cited in Thatte, 2007), the end customer in the marketplace today determined by the success of failure of supply chains management practices. They stated that getting the right product, at the right price, at the right time to the customer is not only improved competitive success but also the key to survival.

Many previous researches explored the importance of integrating suppliers, manufacturers, and customers or supply chain integration (Frohlich & Westbrook, 2001; Clinton & Closs, 1997) (i.e. supply chain management) so as to obtain flexibility and speed. By addressing supply chain management practices that contribute to supply chain responsiveness, will help the researcher better understand the scope and activities related to supply chain management that create enhanced level of supply chain responsiveness in competitive business marketplace

2.5 Empirical studies

Several factors make new suppliers important. First, there may exist new suppliers that are superior in some way to a firm's existing suppliers. For example, a new supplier may have developed a novel production technology or streamlined process which allows it to significantly reduce its production costs relative to predominate production technology or processes, or, a new supplier may have a structural cost advantage over existing suppliers, for example, due to low labor costs or favorable import/export regulations in its home country. Second, existing suppliers may go out of business, or their costs may be

increasing. Third, the buyer may need additional suppliers simply to drive competition, reduce supply disruption risks, or meet other business objectives such as supplier diversity. In recognition of these reasons, buyers and their internal customers may be obliged by company policy to locate a minimum number of viable, potential suppliers for every product or service procured (Lysons, 1990).

It is Kenya power's policy to support local suppliers and help them achieve world-class performance. As part of good governance, Kenya power fosters to encourage supplier companies on which they depend on to work towards the same corporate citizenship standards as their business. All major suppliers confirm that they operate environmental, business ethics and health and safety policies and operate a system of performance monitoring to ensure continuous improvement. In the coming years Kenya power aims to work with smaller suppliers to ensure a similar commitment to corporate examples. A recent survey finds that organizations that are best at SCM hold a 40% to 65% advantage in their cash-to-cash cycle time over average organizations and the top organizations carry 50% to 85% less inventory than their competitors.

Postponement strategy not only increases the flexibility in the supply chain, but also balances global efficiency and customer responsiveness. Firms with high levels of SCM practices will have high levels of competitive advantage. Having a competitive advantage generally suggests that an organization can have one or more of the following capabilities when compared to its competitors: lower prices, higher quality, higher dependability, and shorter delivery time. These capabilities will, in turn, enhance the organization's overall performance. Competitive advantage can lead to high levels of economic performance, customer satisfaction and loyalty, and relationship effectiveness. Brands with higher consumer loyalty face less competitive switching in their target segments thereby increasing sales and profitability.

The present study validates the SCM practice construct that has generally been poorly defined and about whose meaning there has been a high degree of variability in people understands. Although some organizations have realized the importance of implementing SCM, they often do not know exactly what to implement, due to a lack of understanding

of what constitutes a comprehensive set of SCM practices. By proposing, developing, and validating a multi-dimensional, operational measure of the construct of SCM practice, and by demonstrating its efficacy in enhancing organizational performance and competitive advantage, the present study provides SCM managers with a useful tool for evaluating the comprehensiveness of their current SCM practices.

The findings of this research will support the view that SCM practices can have discernible impact on competitive advantage and organizational performance. It should be noted that the SCM practices maybe influenced by contextual factors, such as the type of industry, firm size, a firm's position in the supply chain, supply chain length, and the type of a supply chain. For example, the level of customer relationship practice, measured by customer satisfactions and expectations, maybe higher for company located at the end of a supply chain (close to the consumer).

The larger organizations may have higher levels of SCM practices since they usually have more complex supply chain networks necessitating the need for more effective management of supply chain. The level of information quality may be influenced negatively by the length of a supply chain. Information suffers from delay and distortion as it travels along the supply chain, the shorter the supply chain, the less chance it will get distorted. Moreover, the higher level of postponement maybe associated with make-to-order versus make-to-stock production systems. The broad objective of the energy policy is to ensure adequate, quality, cost effective and affordable supply of energy through use of indigenous energy resources in order to meet development needs, while protecting and conserving the environment. Kenya energy needs remain a key determinant of economic growth given its importance in the long term development goal as articulated in the Vision 2030. Energy has been identified as a key driver of growth in supporting productive sectors of the economy and a key input in both social and political pillars. In addition, energy is a key input in realization of the Millennium Development Goals (MDGs) Therefore, the Government is heavily investing in power generation expansion as well as putting in place adequate system support infrastructure including an extensive transmission and distribution network.

Table 1: Conclusion and Findings of The Studies

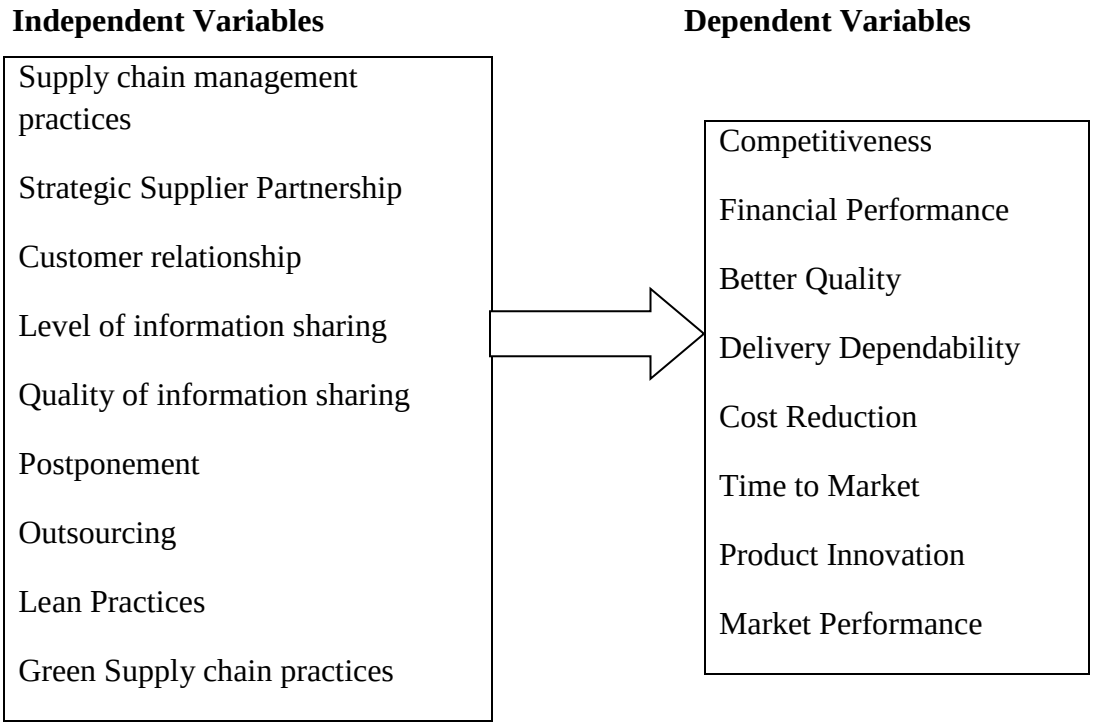
AUTHOR	STUDY	FINDINGS	STUDY GAPS
Otieno,Wilfrida	Outsourcing as strategy for competitive advantage a case of Barclay bank of Kenya (U.o.N MBA,2013)	The findings of study indicated that outsourcing enables reduction of operations cost. also noted that the major challenge experienced by the bank was training of new employees provided by the vendor	There was no study addressing how to improve the SCM practices on the competitiveness in the Barclay Bank
Ambuko Rose	The value chain and competitive advantage in UAP insurance S.Sudan (U.o.N-MBA,2013)	The study revealed that the generic value chain applies in service firms. Its recommended that a study entire industry to determine the typical industry value chain	There was no study addressing how to improve the SCM practices on the competitiveness in the UAP
Achola Mark	Strategies employed by large manufacturing Beer Companies to achieve competitive advantage in Kenya.	Success of the organization depends on the strategies employed to achieve	There was no study addressing how to improve the SCM practices on the competitiveness in the Beer company
MohitTiwari	An exploration of supply chain management practice in the Aerospace Industry and Roll-Royce (Case western Reserve University,2005)	Gains from investments in supplier capabilities can outweigh the cost of buildingin-house capabilities	There was no study addressing how to improve the SCM practices on the competitiveness in the Aerospace Industry
Karimi	Factors affecting supplier selection in the private sector (U.o.N,2006)	There is relationship success performance than enhance product and service quality in the manufacturing industries.	There was no study addressing how to improve the SCM practices on the competitiveness private sector.
Ali, Hawa N	Developing sustainable competitive advantage by Barclays Bank of Kenya Limited (UoN,2012)	Barclay Bank of Kenya needs to be more aggressive since the market is not a monopoly and competition is stiff .and needstoaddressinefficiencies and focus on product innovation to suit customer needs and wants.	There was no study addressing how to improve the SCM practices on the competitiveness in the Barclay Bank

The knowledge gaps in these studies were low cost, product differentiation and customer focus. This is because the Kenyan government wants to achieve the vision 2030 by establishing and providing adequate energy to facilitate the development e.g. GPOBA which is a world bank project targeting the slum areas and the rural areas.

2.6 Conceptual Framework

Fig. 1 presents the SCM framework developed in this research. The framework proposes that SCM practices will have an impact on organizational performance both directly and also indirectly through competitiveness

Figure 1: Research Framework



Source: Author (2015)

2.7 Summary

This research literature review will highlight a number of articles, issues and forums discussing SCM practices in organizations and the involvement of the management, purchasing team and other stakeholders in enhancing sound SCM practices. The literature review has provided a basis on which the research study will be done and the fact-finding process will be carried out.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research design and methodology that was used. it entails the study design, the population, the data collection techniques and the data analysis procedure..

3.2 Research Design

The research design of the study used was descriptive design. This is because the problem was well defined specifically and there were certain issues that the researcher wanted to establish that was the extent to which variable were related. In addition descriptive research designs are objective and test specific hypothesis made it suitable for the study. This method was selected because it enabled the researcher to be able to attempt to describe the relationship that exists between SCM Practices and competitiveness in the energy sector.

3.3 Population

This was a census study and the population for this study was 7 companies in energy sectors based in Nairobi. According to Scaling up Renewable Energy Sectors Programme (SREP) investment plan for Kenya May 2011. This area was chosen because it is vital in achieving the vision 2030 as one of the Economic pillar (Kenya vision, 2030).

3.4 Data collection

The study used primary data that was collected through a self-administered questionnaire that consisted of both open and closed ended questions that were designed to elicit specific responses for qualitative and quantitative analysis respectively. The questionnaires had three sections. The first section contained questions on the general data of the energy sectors companies, the second part; on the other hand answered questions on objective one while the third answered questions on objective two. The questionnaires were administered by drop and pick later method. The study picked head of supply chain/procurement, head of finance and head of information technology department or their equivalents each of the energy sector that took part in the study.

3.5 Data Analysis

Before processing the responses, the completed questionnaires were edited for completeness and consistency. Objective one which was to establish the supply chain practices adopted by the energy sectors was analyzed using descriptive statistics where mean and standard deviation use inferential statistics to analyze objectives. Specifically a dimension level analysis was performed using regression analysis which was instrumental in indicating whether the independent variables-SCM practices significantly predict the dependent variable organization performance.

Regression Analysis, $y=a+bx$

Regression model- $Y=a+b1x1+b2x2+b3x3+b4x4+b5x5+b6x6+b7x7+b8x8+e$, where Y = Competitiveness; a= the y intercept when x is zero; b1, b2, b3, b4, b5, b6, b7 are regression coefficients of the following variables respectively; x1- strategic supplier management ; x2- partnership management ; x3-information sharing ; x4- quality of information sharing ; x5- Postponement ; x6- Outsourcing ; x7- Lean practices; x8-Green Supply Chain management.

3.6 Summary of the Methodology

Objectives	**Section of Questions**	**Analysis**
General information	Section A	Descriptive analysis
To establish SCM practices adopted by government agencies	Section B	Descriptive analysis
To determine the impact of implementation of SCM practices on performance	Section C	Regression analysis and correlation analysis
To determine the challenges faced by government in adoption of SCM practices	Section D	Descriptive analysis

CHAPTER FOUR: DATA ANAYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter provides a summary of the data analysis, results of the study and the discussion of the results of the study. The results were presented on the supply chain management practices and competitiveness of government agencies in the Kenya Energy Sector. The study was based on the following specific objectives: To establish the supply Chain management practices adopted by Government agencies in the Kenyan energy sector, to determine the impact of the implementation of the SCM practices on performance and to determine the challenges faced by Government agencies in the Kenyan energy sectors in the implementation of the SCM practices.

4.2 General information

The study targeted a sample size of 21 respondents from which 21 filled in and returned the questionnaires making a response rate of 100%. This response rate was satisfactory to make conclusions for the study. The response rate was representative. According to Mugenda and Mugenda (1999), a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent. Based on the assertion, the response rate was considered to be excellent.

The study sought to establish the information on the respondents employed in the study with length of period of work at the Energy Sector, highest level of education attained, and the position held in the organization in which the respondents were. These bio data points at the respondents' appropriateness in answering the questions. When asked the duration of time they had worked for the Energy Sector, 14.3% of all respondents reported to have worked for less than 1 year, 52.4% had worked for a period of between 2 to 5 years, 23.8% between 6 to 10 years, and the remaining 4.8% was shared equally among those who had worked for the organization between 21 to 25 years and 31 to 35 years. As pertaining to their highest level of education attained, 57.1% of the respondents had undergraduate degree education, 38.1% were postgraduate while 4.8% had reached up to diploma level in education.

When asked what position they held in the organization, 33.3% of the respondents were finance managers, 38.1% were IT managers while 28.6% were procurement managers in their organizations.

4.3 Supply Chain Management Practices adopted

On a scale of 1 to 5 where, (1) very high influence (2) high influence (3) moderate influence (4) low influence where (5) no influence, the respondents were asked to indicate the adoption of supply management practices. The findings from the Table 4.1 below shows that the Strategic supplier partnership adopted by the Kenyan energy sector in strategic supplier partnership include the firm considers quality as number one criterion in selection of suppliers, the firm regularly solves problems jointly with suppliers and the firm has continuous improvement programs that include key suppliers with a mean of 1.67, 2.23 and 2.23 respectively. The findings concur with literature review as it leads to improved performance. According to Chen & Paulraj, (2004), a strategic partnership emphasizes direct, long-term association and encourages mutual planning and problem solving efforts. Such strategic partnerships are entered into to promote shared benefits among the parties and ongoing participation in one or more key strategic areas such as technology, products, and markets. Other SCM practices adopted includes the firm helped suppliers to improve their product quality, the firm includes key suppliers in our planning and goal setting activities and the firm actively involve key suppliers in new product development processes. These shows that strategic partnerships with suppliers enable organizations to work more effectively with a few important suppliers who are willing to share responsibility for the success of the products. 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 (Mentzer *et al.,* 2001).

Table 4.1: Strategic supplier partnership

Strategic supplier partnership	Mean	Std. Deviation
	Statistic	Statistic
The Firm considers quality as number one criterion in selection of suppliers	1.6667	.85635
The Firm regularly solves problems jointly with suppliers	2.2381	.94365
The Firm helped suppliers to improve their product quality	2.5714	1.39898
The Firm has continuous improvement programs that include key suppliers	2.2381	1.17918
The Firm include key suppliers in our planning and goal setting activities	2.5238	1.07792
The Firm actively involve key suppliers in new product development processes	2.7143	1.41926

Source: Research data, (2015)

The findings in the Table 4.2 below shows that the energy sectors builds customer relationships through the firm frequently interact with customers to set reliability responsiveness and other standards with a mean of 2.23, the firm frequently measure and evaluate customer satisfaction with a mean of 2.04, the firm frequently determine future customer expectations with a mean of 2.38, the firm facilitate customer's ability to seek assistance with a mean of 1.81 and the firm periodically evaluate the importance of relationship with customers with a mean of 2.19. The findings concurs with the literature review this creates competitive advantage. Close customer relationship allows an organization to differentiate its product from competitors, sustain customer loyalty, and dramatically extend the value it provides to its customers (Noble, 1997).

Table 4.2: Customer relationship

Customer relationship	Mean	Std. Deviation
	Statistic	Statistic
The Firm frequently interact with customers to set reliability responsiveness and other standards	2.2381	1.26114
The Firm frequently measure and evaluate customer satisfaction	2.0476	1.02353
The Firm frequently determine future customer expectations	2.3810	1.20317
The Firm facilitate customer's ability to seek assistance	1.8095	.81358
The Firm periodically evaluate the importance of relationship with customers	2.1905	.92839

Source: Research data, (2015)

The results after analysis from the Table 4.3 below shows the energy sector adopted the Supply chain management Practices. The adopted SCM practices includes the firm inform supply chain partners in advance of changing needs with a mean of 2.24, the firm supply chain partners keep fully informed about issues that affect business with a mean of 2.52, the firm supply chain partners share business knowledge of core business with a mean of 2.57, the firm and supply chain partners exchange information that help establishment of business planning with a mean of 2.81 and the firm and supply chain partners keep each other informed about events or changes that may affect the other partners. This shows that to achieve success, the Kenyan energy sector share information about the different aspects of the supply chain. This enhances the overall performance in supply chain hence creates competitive advantage. Lalonde (1998) considers sharing of information as one of five building blocks that characterize a solid supply chain relationship. According to Stein and Sweat, supply chain partners who exchange information regularly are able to work as a single entity. Together, they can understand

the needs of the end customer better and hence can respond to market change quicker (Lalonde, 1998).

Table 4.3: Level of information sharing

Level of information sharing	Mean	Std. Deviation
	Statistic	Statistic
The Firm inform supply chain partners in advance of changing needs	2.2381	1.04426
The Firm supply chain partners keep fully informed about issues that affect business	2.5238	.81358
The Firm supply chain partners share business knowledge of core business	2.5714	1.02817
The Firm and supply chain partners exchange information that help establishment of business planning	2.8095	1.12335
The Firm and supply chain partners keep each other informed about events or changes that may affect the other partners	2.4286	1.07571

Source: Research data, (2015)

The findings of the study in Table 4.4 show that Energy sector adopts the level of information quality as its SCM practices. The practices adopted includes information exchange between firm supply chain partners is timely with a mean of 2.09, information exchange between firm supply chain partners is accurate with a mean of 1.95, information exchange between firm supply chain partners is complete with a mean of 1.95, information exchange between firm supply chain partners is adequate with a mean of 2.29 and information exchange between firm supply chain partners is reliable with a mean of 1.90. The findings above concurs with the literature review in that the information shared should be kept confidential and not disclosed to its competitors to avoid stiff competition in the market. It appears that there is a built-in reluctance within organizations to give away more than minimal information since information disclosure is perceived as a loss of power (Cooper, 1998).

Table 4.4: Level of information quality

Level of information quality	Mean	Std. Deviation
	Statistic	Statistic
Information exchange between firm supply chain partners is timely	2.0952	1.04426
Information exchange between firm supply chain partners is accurate	1.9048	.80475
Information exchange between firm supply chain partners is complete	1.9524	.97346
Information exchange between firm supply chain partners is adequate	2.2857	1.14642
Information exchange between firm supply chain partners is reliable	1.9524	.88909

Source: Research data, (2015)

The finding after the analysis in Table 4.5 shows that the organization outsources to eliminate unnecessary costs. The outsourcing is reflected through outsourcing information systems with a mean of 3.04, outsourcing manufacturing with a mean of 2.81, outsourcing transport, distribution, customer care and warehousing with a mean of 3.14, outsourcing after- sales support with a mean of 2.52 and outsourcing product design with a mean of 2.71. indicates that handing over noncore activities to a trusted third party, a company can concentrate on activities central to its value proposition and increase its competitive positioning, outsourcing in general is held toward one of the main goals as cost savings, the special necessity arises when a certain resource, either human or equipment resources, is not needed full time, or the efforts to obtain the resource cannot be justified. Also it indicates that companies have the possibility to access to highly qualified personnel, who may not be available to the client organization and fully exploit the suppliers' investments, innovations, and specialist capabilities, achievement of an improvement in performance that the outsourcer company might offer due to economies of scale. Large scale can provide a variety of functions and opportunities which will help to save the best available worker, who might not want to work in a less stimulating consumer environment. Additionally, with service providers the level of operational

experience is expected to be higher, because of the greater concentration of staff on tasks as compared to internal operations and to reflect changing business environments.

Table 4.5: Extent of outsourcing

Extent of outsourcing	Mean	Std. Deviation
	Statistic	Statistic
The firm outsources information systems	3.0476	1.39557
The firm outsources manufacturing	2.8095	1.56905
The firm outsources transport, distribution, customer care and warehousing	3.1429	1.38873
The firm outsources after-sales support	2.5238	1.47034
The firm outsources product design	2.7143	1.48805

Source: Research data, (2015)

The results after analysis in the Table 4.6 below shows that the organization adopts the lean practices to create the competitive advantage. The competitive advantage is reflected through continuous improvement own performance with small incremental lean procurement improvements (Kaizen), firm doesn't rely on inspecting products procured (six sigma), firm buys products in smaller batches only when they are needed at the place where they are needed and exactly in the quantity required (just in time) and firm practices delayering, downsizing and outsourcing (lean thinking). This indicates that the energy sector in Kenya adopts lean practices to across the country to more customers focused, flexible and profitable. The above finding concurs with the literature review in that the organization that adopts lean chain practices improves its efficiency and reduces costs.

A lean culture is the key to eliminating waste and delivering long-term customer value and outstanding business performance, quarter-after-quarter, year-after-year. Lean practices improve quality and productivity by taking cost and waste out of all facets of an operation, from the procurement of raw materials to the shipment of finished goods.

Table 4.6: Lean practices

Lean practices	Mean	Std. Deviation
	Statistic	Statistic
The firm continually improve their own performance with small incremental lean procurement improvements (Kaizen)	2.0952	.99523
Firm doesn't rely on inspecting products procured (six sigma)	3.2381	1.54612
Firm buys products in smaller batches only when they are needed at the place where they are needed and exactly in the quantity required (just in time)	2.1905	1.12335
Firm practices delayering, downsizing and outsourcing (lean thinking)	2.3810	.92066

Source: Research data, (2015)

The results in Table 4.7 below shows the Energy sectors in Kenya adopt postponement to moderate influence. The respondents indicated the firm delay final product assembly activities until customer orders have actually been received with a mean of 2.67, the firm delay final product assembly activities until the last possible position in the supply chain with a mean of 2.71 and the firm products are designed for modular assembly with a mean of 2.52. This indicates that energy sectors concentrates on developing a product that will suit the available market. According to Cooper (1998), postponement allows an organization to be flexible in developing different versions of the product in order to meet changing customer needs, and to differentiate a product or to modify a demand function. In general, the adoption of postponement maybe appropriate in the following conditions: innovative products; products with high monetary density , high specialization and wide range; markets characterized by long delivery time, low delivery frequency and high

demand uncertainty; and manufacturing or logistics systems with small economies of scales and no need for special knowledge(Cooper,1998).

Table 4.7: Postponement

Postponement	Mean	Std. Deviation
	Statistic	Statistic
The firm delay final product assembly activities until customer orders have actually been received	2.6667	1.46059
The firm delay final product assembly activities until the last possible position in the supply chain	2.7143	1.55380
The firm products are designed for modular assembly	2.5238	1.53685

Source: Research data, (2015)

The best practices adopted by the Kenyan energy sector includes the firm does internal benchmarking, the firm does external benchmarking, the firm does total quality management, the firm does supply collaboration, the firm does green supply chain management, the firm use technology and the firm does strategic Alliances. The internal benchmarking and the external benchmarking may cause a necessary change in the culture of an organization. After a period of time in the industry, an organization may become too practiced at searching inside the company for growth. The company would be better off looking outside its walls for potential areas of growth. An outward looking company tends also to be a future oriented company.

This often leads to a more enhanced organization and increased profits (http://www.utsi.com/wbp/ reengineering/benchmark.html, 2/19/97). Benchmarking is defined as "the process of identifying and learning from best practices anywhere in the world" (Allan, 1997). By identifying the "best" practices, organizations know where they stand in relation to other companies. The other companies can be used as evidence of problem areas, and provide possible solutions for each area. When companies benchmark, they use partners to share information with and learn from each other. Benchmarking allows organizations to understand their own administrative operations better, and marks target areas for improvement. It is an ideal way to learn from other companies who are more successful in certain areas. Additionally, benchmarking can

eliminate waste and help to improve a company's market share (Allan, 1997; http://www.spinet.org/legeth.html, 2/19/97).

Total quality management ensures the participation of everyone in Kenyan energy sector in the decision making process through activities such as quality cycles and team work. The effective implementation of TQM will increase customer satisfaction with the service offerings (Omachonu and Ross, 1994). Quality enhances customer loyalty through satisfaction; this in turn can generate repeat business and lead to the attraction of new customers through positive word of mouth. The word of mouth communication will help in cost reduction. This Omachonu and Ross (1994), noted will provide competitive edge to the company. The improvement in quality will result in increased market share and profitability. Implementation of TQM further ensures that organizations change how they perform activities so as to eliminate inefficiency, improve customer satisfaction and achieve the best practice (Porter, 1996)

Also the findings of the study shows the Kenya energy sector ensures that the green supply chain management is intergraded in environmental thinking into supply chain management including product design, material resourcing and selection, manufacturing process, delivery of the final product to the consumer hence creates the competitive edge. This achieved through the reduced operational costs and enhanced reputation making it more attractive to suppliers and customers. The strategic alliances allow companies to avoid controls on importation and overcome barriers to commercial penetration. Alliances can also be a way to respect the bonds posted by the "host" country regarding value added local content and participation in the capital of local businesses. This shows that energy sectors use this practice to eliminate unnecessary competition. The supply collaboration ensures sharing of information that enhances knowledge across the chain that allows the organization to achieve quicker decision making.

Table 4.8: Best practices

Best practices	Mean	Std. Deviation
	Statistic	Statistic
The firm does internal benchmarking	1.9048	88909
The firm does external benchmarking	1.7619	.76842
The firm does total quality management	1.7143	.78376
The firm does supply collaboration	1.8571	.85356
The firm does green supply chain management	1.8571	1.01419
The firm use technology	1.3333	.65828
The firm does strategic Alliances	2.0000	1.04881

Source: Research data, (2015)

4.4 The impacts of the implementation of the SCM practices on performance

On a scale of 1 to 5 where, (1) very high influence (2) high influence (3) moderate influence (4) low influence where (5) no influence, the respondents were asked to indicate the impact of the implementation of supply management practices on performance using the selected key performance indicators. The findings from the Table 4.3 shows that the improved performance is reflected mainly through organization achieves its market oriented goals and financial goes through reduction of wastes, good customer relation had led to increase in market share, relationship with suppliers leads to better quality of raw materials, profit margin on sales, information sharing's brings new ideas necessary for innovation, repairs and reuse of major components lead to cost reduction, outsourcing of none core activities improve on time to market, and quality of information processed enhances financial performance as indicated by the respondents. This indicates Kenyan energy sector drives out inefficiencies from business processes. The findings agree with the literature reviews as this practices improves the performance of the energy sector. According to Towiland Christopher, (cited in Thatte, 2007), the end customer in the marketplace today determined by the success of failure of supply chains management practices. They stated that getting the right product, at the right price, at the

right time to the customer is not only improved competitive success but also the key to survival. The growth of supply chain aims to improve profitability, customer response and ability to deliver value to the customer's and also to improve the interconnection and interdependence among firms. Due to market expanding from domestic market to global market increase customer demands, for instance demanding lower prices, faster delivery, higher quality products or services and increase the variety of items (Braunscheidel, 2005).The Energy sector, just like any other organization that practices sound supply chain practices as was reflected in the literature review, has grown and sustained its competitive edge, no wonder its market leadership position in the region. Energy sector continuously reviews these practices for relevance given the rapidly changing business environment and diversification and growth strategies.

Table 4.9: The impacts of the implementation of the SCM practices on performance

Performance	Mean	Std. Deviation
	Statistic	Statistic
Organization achieves its market oriented goals and financial goes through reduction of wastes necessary for innovation	2.0952	.88909
Good customer relation had led to increase in market share	2.1905	1.07792
Relationship with suppliers leads to better quality of raw materials	1.9048	.83095
Profit margin on sales	2.4762	1.36452
Information sharing's brings new ideas	1.7143	.90238
Repairs and reuse of major components lead to cost reduction	2.0952	.94365
Outsourcing of none core activities improve on time to market	2.4286	1.32557
Quality of information processed enhances financial performance	2.0000	.89443

Source: Research data, (2015)

4.5 Challenges faced in adoption of SCM practices

In examining the possible challenges the Kenyan energy sector experiences when implementing the SCM practices, the respondents were asked to rate some possible limitation on a scale of (1) to a very high influence (2) to a high influence (3) to moderate influence (4) to a low influence where (5) no influence. The challenges pointed out by the respondents when implementing SCM practices to a high influence include; high cost of training with a mean of 2.38 and prohibitive government policies with a mean of 2.23.

Table 4.10: Challenges faced in adoption of SCM practices

challenges	Mean	Std. Deviation
	Statistic	Statistic
There is lack of industry standards	2.7143	1.14642
Employees resistance to change	2.8571	1.19523
There is great lack of management support	2.6190	1.28360
There is high costs of training	2.3810	1.24403
There is lack of staff commitment	2.7619	1.26114
Lack of capital investment	2.8571	1.45896
Inability to manage suppliers effectively	2.8571	1.19523
Insufficient Skilled resources	3.0000	1.34164
Rapid technological changes	2.6190	1.20317
Lack of environmental responsiveness	2.8571	1.10841
Sourcing competition due to globalization	2.6667	1.19722
Prohibitive government policies	2.2381	1.22085
Lack of availability of financial and skilled human resources	3.0000	1.41421
Rapid climatic changes	3.5714	1.24786

Source: Research data, (2015)

This shows that employee training is very expensive and time consuming and prohibitive government policies also hinders to acquire the necessary tools required. Other challenges include lack of management support and lack of staff commitment as they do not participate and share necessary information to implement the SCM practices. According to Muraguri (2010) lack of commitment and focus from the top management to give their energy and express loyalty to the implementation process hence guidance of the rest of the employees through the strategy plan with ease while providing solutions and explanations to unclear issues.

Employees resistance to change is another challenge as indicated by the respondents due fear of change connected to difficulties of interpretation, the complexity involved, and the underlying business logic with its clear focus on financial aspects, all contribute to the inertia in reaching adoption of technology (Abbasi and Nilsson, 2012). Lack of availability of financial and skilled human resources indicates that the implementation the SCM practices will fail. According to David (2005), nothing could be more detrimental to implementation and to organizational success than for resources to be allocated in ways not consistent with priorities indicated by approved objectives. In the absence of skills, appropriate ethics are not applied and hence become a challenge in applying the SCM practices (Farrington *et al*., 2012).

4.6 Pearson Correlation Analysis

The Karl Pearson's coefficient of correlation (simple correlation) is a measure of the degree of relationship between two variables and is denoted by r. Basically, a Pearson product-moment correlation attempts to draw a line of best fit through the data of two variables, and the Pearson correlation coefficient was conducted to examine the relationship between variables, r, indicates how far away all these data points are to this line of best fit (how well the data points fit this new model/line of best fit).

The Pearson correlation coefficient, r, can take a range of values from +1 to -1. A value of 0 indicates that there is no association between the two variables.

Table 4.11: Pearson Corrélation Coefficients Matrix

Pearson Correlation	Competi-tiveness	SSM	CRM	IS	QIS	Postponement	Outsourcing	LP	GSM
Competitiveness	1.000	.604	.527	.713	.516	.326	.459	.711	.609
SSM	.604	1.000	.725	.456	.743	.561	.611	.631	.591
CRM	.527	.725	1.000	.632	.478	.700	.534	.415	.614
IS	.713	.456	.632	1.000	.484	.618	.662	.500	.701
QIS	.516	.743	.478	.484	1.000	.444	.557	.614	.523
Postponement	.326	.561	.700	.618	.444	1.000	.576	.356	.426
Outsourcing	.459	.611	.534	.662	.557	.576	1.000	.537	.451
LP	.711	.631	.415	.500	.614	.356	.537	1.000	.612
GSM	.609	.591	.614	.701	.523	.426	.451	.612	1.000

***. Correlation is significant at the 0.01 level (2-tailed).*

Source: Research data, (2015)

As cited in Wong and Hiew (2005), the correlation coefficient value (r) range from 0.10 to 0.29 is considered weak, from 0.30 to 0.49 is considered medium and from 0.50 to 1.0 is considered strong. However, according to Field (2005), correlation coefficient should not go beyond 0.8 to avoid multi co-linearity. The results show that there is high correlation between lean practices and competitiveness with a value of 0.711, green supply chain management and competitiveness with a value of 0.609 and information sharing and competitiveness with a value of 0.713.

The correlation coefficients on the main diagonal are always 1.0, because each variable has a perfect positive linear relationship with itself.

4.7 Regression Analysis

The regression analysis is concerned with the distribution of the average value of one random variable as the other variables which need not be random are allowed to take different values. A multivariate regression model was applied. The regression model specifically connects the average values of y for various values of the x-variables. A

regression equation is in no way a mathematical linking two variables but serves as a pointer to questions to be answered. Basically, the regression analysis is used in two distinct ways; (1) as a means of considering data taking into account any other relevant variables by adjustment of the random variable; and (2) to generate mathematical forms to be used to predict the random variable from the other (independent) variables. The regression model was as follows:

$y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + ę$

Where:

Y = Competitiveness

β_0 = Constant Term

β_1= Beta coefficients

X_1 = Strategic Supplier Management

X_2 = Customer Relationship

X_3 = Information Sharing

X_4 = Quality of Information Sharing

X_5 = Postponement

X_6 = Outsourcing

X_7= Lean practices;

X_8= Green Supply Chain management

ε= error term

Table 4.12: Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.931[a]	.866	.982	.345	.931	42.212	14	53	.000	2.101

a. Predictors: (Constant), Strategic Supplier Management, Partnership Management, Information Sharing, Quality of Information Sharing, Postponement, Outsourcing, Lean practices, and Green Supply Chain management

Source: Research data, (2015)

The model summary is presented in Table 4.4. The model summary was highly significant (p=0.000) showing that the model was functional. The model had an R square value of 0.866 indicating that the percentage of the dependent variable variance that was explained by the independent variables was 86.6%. The P- value of 0.000 (Less than 0.05) implies that the model of competitiveness is significant at the 5 per cent significance. R is the correlation coefficient which shows the relationship between the study variables, from the findings shown in the table above there was a strong positive relationship between the study variables as shown by 0.931. Durbin-Watson is number that tests for autocorrelation in the residuals from a statistical regression analysis. The Durbin-Watson statistic is always between 0 and 4. Values close to 2 means that there is no autocorrelation in the sample; values approaching 0 indicate positive autocorrelation, while values toward 4 indicate negative autocorrelation. The findings shows that Durbin-Watson value is 2.101 hence no autocorrelation in the sample. The Standard Error of the Estimate is the standard deviation of the data about the regression line, rather than about the sample mean. This statistic is used with the correlation measure, the Pearson *R*. It is used to construct a confidence interval within which the true population correlation will fall. The computations derived from the r and the standard error of the estimate can be

used to determine how precise an estimate of the population correlation is the sample correlation statistic.

ANOVA findings (P- value of 0.00) in Table 4.5 show that there is correlation between the predictor's variables and response variable. An F ratio is calculated to represent the variance between the groups, divided by the variance within the groups. A large F ratio indicates that there is more variability between the groups (caused by the independent variable) than there is within each group, referred to as the error term (Pallant, 2005). Therefore, this is an indication of a better the predictor model. A significant F test indicates that we can reject the null hypothesis which states that the population means are equal. The F value of 14.496 indicates that the overall regression model is significant hence it has some explanatory value. This indicates that there is a significant relationship between the predictor variables Strategic Supplier Management, Partnership Management, Information Sharing, Quality of Information Sharing, Postponement, Outsourcing, Lean practices, and Green Supply Chain management and competitiveness. At 95 percent confidence interval i.e. P–value ($p=0.00<0.05$) it implies that all the independent variables combined do influence the decisions to impact competitiveness.

Table 4.13: Analysis of variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.801	8	1.725	14.496	.043[a]
	Residual	2.134	18	.119		
	Total	15.935	26			

a. Predictors: (Constant), Strategic Supplier Management, Partnership Management, Information Sharing, Quality of Information Sharing, Postponement, Outsourcing, Lean practices, and Green Supply Chain management

b. Dependent Variable: Competitiveness

Source: Research data, (2015)

Table 4.14: Coefficients

	Un-standardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B		Co-linearity Statistics	
Model	B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
1(Constant)	.740	.016		.012	.547	.443	.904		
SSM	.429	.100	.181	4.29	.000	.231	.627	.293	3.411
CRM	.230	.114	.157	.026		.112	.268	.768	.302
IS	.401	.186	.227	.075	.005	.568	.411	.448	2.231
QIS	.257	.260	.159	.067	.007	.361	.239	.919	1.088
Postponement	.095	.123	.331	.012	.049	.427	.434	.856	5.031
Outsourcing	.479	.234	.267	.338	.035	.189	.514	.600	4.021
LP	.541	.178	.176	.096	.018	.112	.315	.528	1.18
GSCM	.339	.126	.234	.043	.003	.213	.237	.412	3.71
					.013				

a. Dependent Variable: Competitiveness

Source: Research data, (2015)

From the table 4.6, the variable had no multi collinearity since the variance inflation factors (VIF) were less than 10. The established multiple linear regression equation becomes:

$Y = .740 + .429\ X_1 + .230\ X_2 + .401X_3 + .257X_4 + .095\ X_5 + .479\ X_6 + .541\ X_7 + .339\ X_{8,}$

Where:

β_0 = 0.74, shows that if the level of independent variables are held at constant zero, competitiveness would be 0.74.
β_1= 0.429, shows that one unit change in strategic supplier management would results in 0.429units increase in competitiveness.

β_2= 0.040, shows that one unit change in partnership management would results in 0.23units increase in competitiveness.

β_3= 0.239, shows that one unit change in information sharing would results in 0.239units increase in competitiveness

β_4= 0.120, shows that one unit change in quality of information sharing would results in 0.120 units increase in competitiveness

β_5= 0.345, shows that one unit change in postponement would results in 0.345 units increase in competitiveness

β_5= 0.095, shows that one unit change in postponement would results in 0.095 units increase in competitiveness

β_6= 0.475, shows that one unit change in outsourcing would results in 0.475 units increase in competitiveness

β_7= 0.541, shows that one unit change in lean practices would results in 0.541 units increase in competitiveness

β_8= 0.339, shows that one unit change in green supply chain management would results in 0.339 units increase in competitiveness

The Standard Errors are the standard errors of the regression coefficients. They can be used for hypothesis testing and constructing confidence intervals. The Standardized coefficients (Beta) are what the regression coefficients would be if the model were fitted to standardized data, that is, if from each observation we subtracted the sample mean and then divided by the sample SD.

The t statistic tests the hypothesis that a population regression coefficient is β is 0, that is, H_0: β= 0. It is the ratio of the sample regression coefficient B to its standard error. The statistic has the form (estimate - hypothesized value) / SE. Sig. labels the two-sided P values or observed significance levels for the t statistics. The degrees of freedom used to calculate the P value is given by the Error DF from the ANOVA table. The P value for the independent variable tells us whether the independent variable has statistically significant predictive capability. From the table above the significance values are less than 0.05 hence the independent variables are significant.

95% Confidence Limit for B Lower Bound and Upper Bound, these are the 95% confidence Intervals for the coefficients. The confidence intervals are related to the p-values such that the coefficient will not be statistically significant if the confidence interval includes 0. These confidence intervals helps to put the estimate from the coefficient into perspective by seeing how much the value could vary.

CHAPTER FIVE: SUMMARY OF THE FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

Examining SCM practices defined as a set of activities undertaken in an organization to promote effective management of its supply chain. This chapter provides a summary of findings, challenges faced in the implementation of SCM practices, impacts of implementing SCM practices on competitiveness, adoption of SCM practices, conclusion, recommendations, implications of the study on policy, theory and practice, limitation of the study, and suggestion for further research.

5.2 Summary of the Findings

The study findings revealed clearly that Kenyan energy sector adopts specific SCM practices that are aligned to its corporate strategy in running its value chain function and these practices have significantly contributed to the performance and hence creating competitive edge in the very energy industry by focusing on operational effectiveness and efficiency. The findings concur with the literature review on other similar studies of other organizations. At this age of very uncertain, sporadic business environment and stiff competition coupled with a very knowledgeable customer, energy sectors are turning inward, tapping as much value from their core competencies to establish a sustainable competitive edge through operational effectiveness and efficiency to improve the organizational performance hence creating competitive advantage.

5.3 Conclusion

From the study findings the study concludes that the adoption of SCM practices improves the organizational performance and hence competitive advantage. The improved performance is reflected through organization achieves its market oriented goals and financial goals through reduction of wastes, good customer relation had led to increase in market share, relationship with suppliers leads to better quality of raw materials, profit margin on sales, information sharing's brings new ideas necessary for innovation repairs and reuse of major components lead to cost reduction, outsourcing of none core activities improve on time to market and quality of information processed enhances financial performance.

This shows that SCM practices was well customized process to suit the energy sector change needs as energy had very well defined SCM strategies and practices. This SCM practices would give the energy sector the higher success rate to the change process hence competitive advantage.

Based on the findings of the study and the forgoing discussions, it is clear that there exists very strong SCM practices and strategies that have contributed to good performance within the operation and supply chain and conversely impacting on the energy sector overall performance and its competitive strength in the challenging business environment. The SCM practices that were adopted includes strategic supplier partnership, customer relationship, level of information sharing, level of information quality, outsourcing, lean practices, and postponement and best practices.

From the study, findings the study concludes that the SCM practices being adopted Kenyan energy sector faced various challenges which hindered the effectiveness of the adoption process. The main challenges included; high costs of training, lack of management support and lack of staff commitment, employees resistance to change and prohibitive government policies. Therefore, the supermarkets faced diverse challenges that slowed down the SCM practices adoption process.

5.4 Recommendations

SCM practices need to be embraced to help the management team appreciates the direct impact of these practices and initiatives. Adoption of flexible SCM practices through appropriate research will help efficiently and effectively meet the business diverse yet drastic changing needs as well as address challenges arising from a dynamic global business environment. Management should embrace both qualitative and quantitative aspects in their decision making and more sustainable supply chain strategies integration across the group will yield synergies. This study is expected to make impacts on existing organizational policy, theory and practice. The SCM is a heavy matter as evident from the study, clearly reflecting how they marry with corporate strategy to yield improved performance and hence creating competitive advantage. To achieve effective adoption of the various SCM practices, it requires clear policies to be formulated, implemented and

monitored to ensure they remain relevant to the business. The study will as well enrich the existing literature on implementation of SCM practices as a strategy and its challenges and advance scholarly research on this subject. This study will enable firms to increasingly view SCM practices as a potential business strategy to enhance their efficiency and competitiveness. The theory as captured at the literature review stage is such that organization that adopt sound SCM practices outperform those that do not and indeed the gap keep widening as such energy sectors continue to innovatively implore fresh SCM practices targeting further and faster creation of value given immense competition and pressure from the stake holders such that sustainability of those that do not embrace such best strategies is at stake. The outcome of this study on SCM practices clearly supports this theory.

With the globalization and stiff competition, there is not much time left to slow copying energy sector, proactively and innovatively investing in appropriate technologies should be the core calling of top management if their supermarkets are to grow. In practice, the results of this study will aid energy sector and other firms by pointing out pitfalls and weakness often encountered in the implementation of SCM practices, pitfalls could be avoided and areas of weakness invigorated to ensure continuous growth of SCM practices. Energy sector management should also identify emerging challenges not cited in this study and set up mechanisms of dealing with those challenges.

5.5 Areas of further Research

The study sought to explore supply chain management practices and competitiveness of government agencies in the Kenya energy sector. The study recommends that an in-depth study should be accrued out on factors influencing adoption of SCM practices at energy sector in Kenya. Since this study explored the supply chain management practices and competitiveness of government agencies in the Kenya energy sector, the study recommends that; similar studies should be done in other sectors of the Kenyan economy for comparison purposes and to allow for generalization of findings on the SCM practices in Kenya.

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APPENDICES

Appendix I: Letter of Introduction

Dear Sir/ Madam,

RE: MBA RESEARCH

I am a student at The University of Nairobi (UON), pursuing a Master of Business Administration (MBA). I am undertaking a research project in partial fulfillment of the academic requirements My study is on "Supply chain management practices on competitiveness of government agencies in the Kenyan energy sector"

Your firm has been selected to form part of the study. I will be very grateful if you would spare sometime from your busy schedule, to respond to the questions listed on the attached questionnaire.

Your response will be treated with uttermost confidentiality. The findings of this research may be availed to you upon completion of the research if you so request.

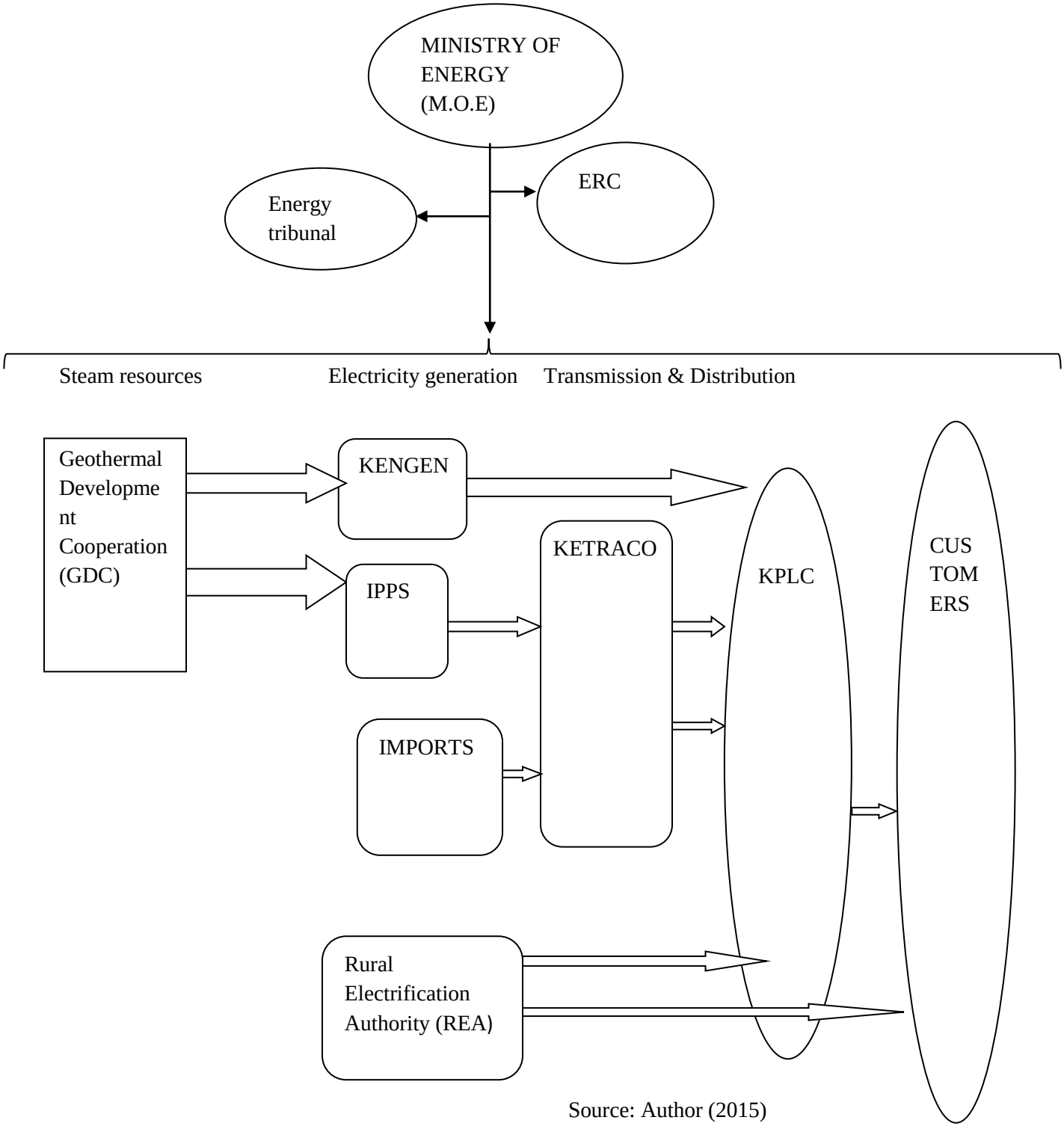
Your assistance and co-operation will be highly appreciated.

Yours faithfully,

Okulo Andrew Guya.

UON MBA STUDENT

Appendix II: Supply Chain Structure of Energy Sector in Kenya



Source: Author (2015)

Appendix III: List of Energy Sector

I. MINISTRY OF ENERGY (M.O.E)

II. ENERGY REGULATION COMMISION (E.R.C)

III. KENYA POWER AND LIGHTING COMPANY (KPLC)

IV. KENYA GENERATING COMPANY (KENGEN)

V. RURAL ELECTRIFICATION AUTHORITY (REA)

VI. KENYA ELECTRICITY TRANSMISSION COMPANY (KETRACO)

VII. GEOTHERMAL DEVELOPMENT COMPANY (GDC)

VIII. INDEPENDENT POWER PRODUCERS (IPPs)

Appendix IV: Questionnaire

Supply chain management practices and competitiveness of government agencies in the Kenya energy sector.

SECTION A: General Information

(Please tick or comment where appropriate)

1. Gender **:** Male ( ) Female ( )

2. Age group (Yrs): 18 -25 ( ) 26-30 ( ) 31-40( ) 41-50( ) 51-60( ) Above 61 ( )

3. Highest level of education: Diploma ( ) Degree ( ) others (specify)…….

4. Numbers of years worked for the company Below 1 year ( ) 2-5years ( ) 6-10 years( )11-15 years ( ) 16-20 years ( ) 21-25years ( ) 26-30years ( ) 31-35 years ( ) above 36 years( )

5. Indicate your job categories: Temporary contract union( ) Contract management ( ) permanent union ( ) Permanent management ( )

6. What duration company has been in operation? Less than 5 years ( ) 5-10years ( ) 11-15 years( ) above 15 years ( )

7. What is your position in this organization?

    a) Supply chain manager ( )

    b) Finance manager ( )

    c) IT manager ( )

Section B: Adoption of supply Chain management practices

On scale of 1-5 where 1= very high influence, 2= high influence, 3= moderate influence 4= low influence and 5= no influence, please indicate the extent to which supply chain management practices has been adopted by the government agencies in the Kenyan energy sector.

Strategic supplier partnership	**1**	**2**	**3**	**4**	**5**
The firm consider quality as number one criterion in selection of Suppliers					
The firm regularly solve problems jointly with suppliers					
The firm helped suppliers to improve their product quality					
The firm have continuous improvement programs that include key suppliers					
The firm include key suppliers in our planning and goal setting activities					
The firm actively involve key suppliers in new product development processes					

Customer relationship	**1**	**2**	**3**	**4**	**5**
The firm frequently interact with customers to set reliability responsiveness, and other standards					
The firm frequently measure and evaluate customer satisfaction					
The firm frequently determine future customer expectations					
The firm facilitate customer`s ability to seek assistance.					
The firm periodically evaluate the importance of relationship with customers					

Level of information sharing	**1**	**2**	**3**	**4**	**5**
The firm inform supply chain partners in advance of changing needs					
The firm supply Chain partners keep fully informed about issues that affect business					
The firm supply chain partners share business knowledge of core business					
The firm and supply chain partners exchange information that help establishment of business planning					
The firm and supply chain partners keep each other informed about events or changes that may affect the other partners					

Level of information quality	**1**	**2**	**3**	**4**	**5**
Information exchange between firm supply chain partners is timely					
Information exchange between firm supply chain partners accurate					
Information exchanged between firm and supply chain partners is complete					
Information exchanged between firm and supply chain partners is adequate					
Information exchanged between firm and supply chain partners is reliable					

Extent of outsourcing	**1**	**2**	**3**	**4**	**5**
The firm outsources information systems					
The firm outsources manufacturing					
The firm outsources transportation, distribution, customer care and warehousing					
The firm outsources after-sales support					
The firm outsources product design					

Lean practices	**1**	**2**	**3**	**4**	**5**
The firm continually improve their own performance with small incremental lean procurement improvements (Kaizen)					
Firm does not rely on inspecting products procured(six sigma)					
Firm buys products in smaller batches only when they are needed at the place where they are needed and exactly in the quantity required (Just in Time)					
Firm practices delayering, Downsizing and Outsourcing (Lean Thinking					

Postponement	**1**	**2**	**3**	**4**	**5**
The firm delay final product assembly activities until customer orders have actually been received					
The firm delay final product assembly activities until the last possible position in the supply chain					
The firm products are designed for modular assembly					

Best practices	**1**	**2**	**3**	**4**	**5**
The firm does Internal benchmarking					
The firm does External benchmarking					
The firm does Total Quality Management					
The firm does Supplier collaboration					
The firm does green supply chain management					
The firm use technology					
The firm does strategic Alliances					

Section C: The impacts of the implementation of the SCM practices on performance

On a scale of 1-5 where 1= very high influence, 2= high influence, 3= moderate influence 4= low influence and 5= no influence, please indicate the impact of the implementation of the SCM practices on performance by the government agenci**es** in the Kenyan energy sector.

Organization Performance	**1**	**2**	**3**	**4**	**5**
The organization achieves its market oriented goals as well as its financial goals through reduction of wastes					
Good customer relationship had led to Increase in market share					
Relationship with suppliers leads to better quality of raw materials					
Profit margin on sales					
Information sharing brings new ideas necessary for innovation					
Repairs and reuse of major components lead to cost reduction					
Outsourcing of none core activities improve on time to market					
Quality of information processed enhances financial performance					

Section D: Challenges faced in adoption of SCM practices

On scale of 1-5 where 1= very high influence, 2= high influence, 3= moderate influence 4= low influence and 5= no influence, please indicate the challenges faced when implementing the SCM practices in the government agencies in the energy sector.

Challenges	**1**	**2**	**3**	**4**	**5**
There is lack of industry standards					
Employees resistance to change					
There is great lack of management support					
There is high costs of training					
There is lack of staff commitment					
Lack of capital investment					
Inability to manage suppliers effectively					
Insufficient skilled resources					
Rapid technological changes					
Lack of environmental responsiveness					
Sourcing competition due to globalization					
Prohibitive government policies					
Lack of availability of financial and skilled human resources					
Rapid climatic changes					

Thank You for Your Co-operation

Appendix V : Letter of Authorization

UNIVERSITY OF NAIROBI
SCHOOL OF BUSINESS
MBA PROGRAMME

Telephone: 020-2059162
Telegrams: "Varsity", Nairobi
Telex: 22095 Varsity

P.O. Box 30197
Nairobi, Kenya

DATE 6TH Aug 2015

TO WHOM IT MAY CONCERN

The bearer of this letter OKULO ANDREW GUYA

Registration No. D61/70876/2014

is a bona fide continuing student in the Master of Business Administration (MBA) degree program in this University.

He/she is required to submit as part of his/her coursework assessment a research project report on a management problem. We would like the students to do their projects on real problems affecting firms in Kenya. We would, therefore, appreciate your assistance to enable him/her collect data in your organization.

The results of the report will be used solely for academic purposes and a copy of the same will be availed to the interviewed organizations on request.

Thank you.

PATRICK NYABUTO
MBA ADMINISTRATOR
SCHOOL OF BUSINESS

UNIVERSITY OF NAIROBI
SCHOOL OF BUSINESS
06 AUG 2015
P.O. Box 30197 - 00100, NAIROBI