SUPPLY CHAIN MANAGEMENT PRACTICES AND SUPPLY CHAIN PERFORMANCE OF PRIVATE UNIVERSITIES IN KENYA

BY

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DECLARATION

This management research project is my original work and has not been presented for any academic credit in this or any other university.

Signed…….. Date……

Linet Adhiambo Amollo

Reg. No. D61/74161/2014

This management research project has been submitted for examination with my approval as a University Supervisor

Signed……. Date……..

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DEDICATION

This work is dedicated to my husband Jacktone, my children, Ian, Doreen and Joram Joshua who stood by me during this period. Special dedication to my father Joram Amollo for his faith and encouragement in my work.

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ABSTRACT

The success of organizations in the current market place are largely determined by how efficiently a firm manages its supply chain, and the supply chain management practices that an organization is engaged in. Supply chain management practices that an organization implements are strategic tools in its performance. The study sought to investigate supply chain management practices in private universities in Kenya and how these practices impacted on the supply chain performance of the organizations under study. The study adapted a descriptive design and was based on the following objectives: to establish the supply chain practices that are carried out by private universities in Kenya, and to establish the impact of supply chain management practices on supply chain performance of private universities in Kenya. Primary data was utilized in the study and semi-structured questionnaires were administered to the respondents. A census approach was adopted and the census consisted of all the private universities in Kenya as listed from quoted source. A 5 –point likert scale was used to analyze output of each response received. Descriptive and inferential statistics were used in the analysis of the variables. The study established that all four supply chain management practices have been implemented in private universities in Kenya with lean practices and information technology sharing implemented to a large extent, while outsourcing of non-core services and strategic supplier partnerships to a moderate extent. On individual supply chain management practices, it was established that involvement of suppliers in planning for procurement of new items was the least practiced variable. On relationship between supply chain practices and supply chain performance, all four practices were found to have positive statistical relationship with most aspects of performance that were measured, however the relationships were found to be statistically insignificant at 5% confidence level. The study recommended that private universities in Kenya should aim to enhance the aspects of strategic supplier partnerships such as early supplier involvement in procurement of new items. The study was limited to private universities in Kenya; future studies can consider all private institutions including colleges and schools. Future research can also be done focusing on more performance variables to see how they would impact implementation of supply chain practices. In addition research can also be done on how implementation of supply chain management practices affects quantitative performance issues such as profitability.

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ABBREVIATIONS AND ACRONYMS

SCM	Supply Chain Management
IT	Information Technology
LIA	Letters of Interim authority
RDT	Resource dependence theory
RBV	Resource based view
NT	Network theory
JIT	Just- in- time
VIM	Vendor Managed Inventory
USIU	United States International University
MKU	Mount Kenya University
CUEA	Catholic University of Eastern Africa
AUA	Adventist University of Africa

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

In the current market place, competition between organizations both locally and globally is greater between their supply chains than within the firms themselves. For this reason, Supply Chain Management and the practices carried out by an organization have become critical success factors for any such firms to sustain leadership in the market place. An insight of supply chain management is now imperative for a firm to remain competitive in the global market and for improving profitability, (Li, Ragu, Rao, 2006). The success of organizations is therefore largely determined by how efficiently their supply chains are managed, and the kind of supply chain practices that these organizations implement.

University education has become key in most sectors of the Kenyan economy. The private universities complement the gaps that cannot be filled by the public sector, hence a study of their supply chain practices and how this impact their performance is crucial and of notable interest. Customers in the current business set up expect low cost along with high quality levels as well as responsiveness throughout the supply chain. According to Giunpero, Tsui and Zhang (2008), the importance of Supply chain management practices to organizations is supplemented by factors such as rising competition, globalization, diversity in production, outsourcing, shorter product life cycles, steady improvement in Technology and constantly changing consumer needs. The private Universities therefore present a viable source of study as they need to remain competitive while making profits in a sector that is expanding rapidly.

1.1.1 Supply Chain Management Practices

American Production and Inventory Control Society (APICS) dictionary (2016) defines Supply-chain management as the "design, planning, execution, control, and monitoring of supply chain activities with the aim value creation, constructing a competitive framework, influencing distribution, integrating supply with demand and mapping performance on a worldwide scale. Supply Chain Management is essentially about achieving low cost along with high quality levels as well as responsiveness throughout the chain.

Supply Chain Management involves organization and integration of the distribution of goods and services along the supply chain. For supply chain management to have a positive impact, organizations must team up on issues like demand forecasts, production plans, changes in production capacity, new market strategies, ultra modern product and service developments, modern technologies adopted, procurement plans, delivery and other aspects that have an effect on the firms procurement, production and logistical layouts , (Wisner, Tan and Leong ,2010). Many organizations have hence recognized that SCM is the major foundation for any firm to develop viable competitive edge for goods and services in the market place. Consistent among most definitions of SCM is the concept of regulating or integrating of a number of goods and service pertinent activities, mutually shared information, mutually shared risks and rewards, cooperation, building and maintaining of long term relationships.

Supply Chain management practices can be construed as those actions a firm engages in to further efficient management of its supply chain, (Solakivi, 2014). Supply chain management activities can be classified into one of the following initiatives: inventory management, management of suppliers, demand planning and forecasting, logistics and distribution planning, product and flexibility of processes, design for quality and production planning, (Tummala & Schoenherr , 2006).

Chen and Paulraj (2004) consider lean supplier base, strategic partnerships, interaction, inter departmental teams and vendor engagement to evaluate buyer-supplier relationships. SCM practices encompass multi-faceted concept which entails strategic supplier partnerships, customer relationship, extensive sharing of information and quality of the information shared and postponement. Li, et al.(2004). Spina et al. (2015) identified several supply chain practices alliances, demand and supply planning, Inventory, production distribution, transportation optimization among others and studied their effect on SCM performance. The current study will be based on the following SCM practices and how they influence SCM performance in private universities: strategic supplier partnerships, lean practices, information technology sharing and outsourcing.

1.1.2 Supply Chain Performance

Fawcett and Magnan (2008) define SCM performance as the total system's capability to meet end to end customer requirements through availability of product and observance of timeliness in delivery. Supply Chain Performance Measurement is also defined as the overall set of measures used to estimate both the competence and capability of the supply chain, (Kurien and Qureshi, 2011). Organizations should establish complete systems of concise performance measures to sustain competitiveness especially in management of the supply chain. It is vital to determine the performance metrics that will audit plans and carry out corrective actions if there is a disparity with planned outcome. Effective relationships can be established when partners in the supply chain have an insight in the performance standards they are being held accountable for, (Stuart & McCutchen 2008)

Performance measurement in the supply chain involves assessing the performance of several tiers of suppliers and customers and the range of relationships and interactions. The performance measures must be visible and should be communicated to all participating members in the supply chain to enable advance planning and creation of value as well as realization of benefits. Lysons and Farrington (2006) define purchasing performance as the quantitative and qualitative assessment over a given duration with an aim of achieving operational and corporate objectives linking purchasing economies and efficiency and effectiveness.

Performance measurement systems vary substantially from company to company. For example many firms' performance measures focus entirely on the organizations costs and profits. Supply chain initiatives are often carried out to boost accuracy and responsiveness of the supply chain other than just reduction of costs. The ultimate goal being to improve customer service levels (Brady 2006). Neely, Gregory and Platts, (1995) define performance measurement as the process of weighting the effectiveness and soundness of an activity. Effectiveness is the level to which a firm meets a customer's requirement while efficiency analyses the utilization of a firm's resources in meeting a certain degree of customer satisfaction in the most economical manner.

1.1.3 Private Universities in Kenya

In Kenya, universities are created through Acts of parliament like the universities Act 2012. This act provides for the establishment, accreditation , development of university education plus the

governance of these institutions. The rapid growth of university education in the country was as a result of the number of graduates from high schools increasing at unprecedented rates. The growth of private universities in Kenya can be attributed to an increase in qualified secondary school leavers triggered by massive expansion of primary education, (Onsongo 2007). There are 22 public universities, 14 private universities and 13 universities with letters of interim authority (LIA) in Kenya. Private universities in Kenya fall into three categories; chartered, registered and those operating on LIA, (Onsongo, 2007).

The economic impact of a college or university are numerous and can be considered in terms of knowledge creation, research and development, or based on direct and implied investment that arise as a result of the surrounding economy(Stokes and Coomes, 1998). The location of universities within a community great impact on both direct and indirect expenditure. Local businesses thrive due to increase in purchases by the university community. Private universities just like other institutions participate in community based programs, engage in life- changing research and foster a culture of volunteerism and community service. Universities build talents and skills in the students they train and hence are a major contributor to the nation's future workforce. Research what differentiates universities from other tertiary institutions. Through research fresh knowledge is generated, refined and utilized for socio-economic betterment of the society. It plays an important role in rural and industrial shift, growth of economies and generation of employment opportunities, (Bailey, Cloete and Pillay, 2010).

1.2 Research Problem

Many organizations have realized the strategic role played by supply chain management in the achievement of the organization's performance within the industry of operation. Organizations in both private and public sector are therefore compelled to upgrade their standards of performance with a view to creating value for money in the production of goods and services. Lambert and Cooper (2000), explains that sustaining an integrated supply chain needs continuity with the end result of the information flow being measuring and reacting to performance.

Private universities play an important role in absorbing a large number of students who qualify to attend university education in Kenya, but cannot do so due to the limited vacancies available in public universities. Nearly 20% of Kenyan university undergraduates are enrolled in private

universities, (Mwiria, Ngethe, Ngome, 2007). Notably enrollment to private universities is affected by the students' ability to pay for their accommodation as well as their education, (Onsongo, 2007). According to a study done by Bailey, et al (2010) private university share of total student enrolment dropped to 11% from a level of 20% after the onset of self sponsored (module II) students in public universities. Hence from such studies it is clear that private universities now face competition in a segment that was previously predominantly their market, from a reforming public sector in provision of university education. Since SCM is a key driver in competitiveness of any industry, the study of SCM practices in the private universities and how they impact performance is thus an important concept to study.

Sundram, Ibrahim and Govindaraju (2011) studied supply chain management practices in the electronics industry in Malaysia and consequences for supply chain performance .The study concluded that six aspects of SCM practices have a visible positive role on Supply chain performance. Green, Zelbst, Meacham, and Bhadauria (2012) measured the impact of Green supply chain management practices on performance. Findings concluded that implementation of green supply chain management practices by organizations in manufacturing can impact performance of the environment this in turn changes economic performance as well as operational performance. Chang, Tsui and Hsu (2013) examined E-procurement and supply chain performance. The paper found that partner relationships, information sharing and supply chain integration can represent the processes through which e-procurement contributes to supply chain performance. Okongwu, Brulhart, and Moncef (2015) discussed the causal linkages between supply chain management practices and performance: A balanced scorecard strategy map perspective. The study revealed that there are many strategic paths of different types that connect supply chain management practices and other intangible assets to financial performance.

Locally, Mwilu (2013) considering supply chain practices and performance among public research institutions, found out that while a number of SCM best practices had been adopted and implemented to a great extent by public research institutions, quite a number were not in place and concluded that there was a strong statistical relationship between SCM and firm performance in logistics, lean suppliers and information Technology. Oketch Shimuli (2014) examined supply chain performance and performance of manufacturing pharmaceutical firms in Kenya. Her study

revealed that the firms concentrated investment in e-supply chain. According to this study, this improved the process inventory management among these firms in Kenya and reduced follow up and ordering time. Mahulo (2015) examined supply chain management practices and performance of cement companies in Kenya found out that there was a near perfect positive relationship between supply chain management practices and the organizational performance said organizations.

While past studies have discussed the way in which supply chain management practices impact performance, none has focused on addressing the interconnection between supply chain practices and how they affect performance in private universities in Kenya. This study sought to answer the following questions: What are the supply chain management practices among private universities in Kenya? What impact does SCM practices have on SC performance of the private universities?

1.3 Research Objectives

i. To establish the supply chain management practices that are carried out in private universities in Kenya.
ii. To establish the impact of supply chain management practices on Supply chain performance of private universities in Kenya.

1.4 Value of the Study

The study is expected to enable private universities to improve on management of their supply chain practices and evaluate their performance in order to achieve efficiency in their supply chains. The study will highlight the weaknesses in the supply chains and enable managers in the private universities to develop measures to improve performance in their supply chains. The study will act as a basis for public universities to borrow best practices from the private sector to enhance their performance. The study will enable an assessment to be done on how service levels can be improved with proper measurements in place. The academic community will gain from the findings since it will act as a source point on empirical data on SCM practices, and will also identify areas for further study.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviews the how Supply Chain Management practices impact organizations including private universities. It looks at Supply Chain performance and provides a summary of major issues and identifies the knowledge gap. The chapter also outlines the conceptual framework that shows the interrelationship between SCM practices and supply chain management performance.

2.2 Theoretical Literature Review

This section will explore existing concepts and theories in SCM that might be of relevance to best practice SCM and organizational performance. The framework of the current study will be based on the following theories: the Resource dependence theory (RDT), the network theory (NT) and the resource-based view (RBV).

2.2.1 Resource Dependence Theory

Resource dependence theory explains how resources from outside given firms impact on organizational operations. It was developed by Jeffrey Pfeffer and Gerald Salancik in 1978. The basic argument of RDT is that organizations depend on resources which originate from the environment, made up of various organizations. The resources one organization needs are held by another organization. Resources are the basis of power and therefore legally independent organizations rely on multidimensional resources and may unable to come up with alternative initiatives for multiple resources hence organizations may adopt strategies to integrate vertically or horizontally with other firms.

RDT depicts organizations reliance on each other's resources such as raw materials, goods; services, finance, and knowledge, to enable facilitate their success. The theory assumes that buyers and vendors are interconnected in a network by Resource dependence and the interrelationships are characterized by swapping of currently owned resources and co-creation of new ones, Sanderson, Lonsdale and Mannion, (2015). RDT supports the concept of outsourcing which is one of the areas that the current study covers. Firms have different competencies and through outsourcing they are therefore able to gain access to resources that are within the

environment. The concept will enable firms in the supply chain to review their activities and decide which should be done within the firm and which should be outsourced, the positions, roles and responsibilities that participants in the supply chain would play, and finally whether there should be incentives between the participants in order to further outcomes, Halldorson, Kotzab, Mikkola and Larsen, (2007).

2.2.2 Network Theory

Performance of organizations in terms of excellence is dependent on how efficiently they cooperate with their partners and how well they are run internally. A network is not a world of single and isolated transactions. It is a result of complex interrelations between organizations that relate over a period of time (Ford, Hakansson and Snehota, 2003). NT can be used as a basis for conceptual analysis of reciprocity in cooperative relationships Oliver (1990).Partnerships between firms enable them to combine resources and the end result is a higher achievement of objectives in comparison if the functions were done individually. The value of a resource is derived from its combination with other resources, which is why organizational linkages become important, (Halldorsson et al.,2007).The NT has made huge contributions in understanding the dynamics of inter-organizational relations and build up of trust as a result of positive long- term relations. Links between firms in a network develop through two separate but closely linked types of transaction: exchange processes (information, goods, services) and adaptation processes (technical, legal),(Johnson and Mattson, 1987)

NT outlines the value of individual buyer-supplier relationships as part of interacting with a wider network of relationships. The focus is both on the structure and dynamics of the relationships and networks. Lysons and Farrington (2006) define a network as a array of partnerships that organizations form with suppliers, manufacturers and distributors to produce and market a product. Networks make it possible for firms to consolidate resources for long term purposes, cut costs and improve quality without huge expenses that characterize investing in specialized resources, research design and technology. The strategic supplier partnerships are directly impacted by this theory. Networks can be internal where firms own most of their assets associated with the business, stable where assets are owned by several firms or dynamic where there is extensive outsourcing. Organizations must build proper networks with linkages that encourage free flow of information with their suppliers.

2.2.3 Resource Based View

A resource- based view justifies an organization's ability to gain competitive advantage when the end product is not easily duplicated by competitors enabling the firm to create a competitive barrier, (Mahoney and Pandian, 1992). The Resource based view is a model that views resources as main drivers to superior firm performance. Efficiency may not only be explained in terms of productivity or operational measures, but also in terms of the possibility to gain access to another firm's core competencies through collaborative arrangements as an alternative to developing such competencies in house, (Haankansson and Snehota, 1999). The RBV therefore can guide firms while making outsourcing decisions. Organizations can make arrangements to acquire such competencies through cooperation with other firms.

In the current global environment sustainability of organizations has shifted from organizational focus to competition between their supply chains, collaboration between organizations thus enables them to create sustainability in resource availability that would not be possible without the collaboration. Kay (1997) argues that competitive advantage is developed by creation of distinctive and exploitative capabilities which are not easy to build, maintain make copies or emulate. The resources developed through integration in supply chain are more valuable than an individual firm's resources. Therefore companies engaged in resource integration gain more benefits, (Halldorsson, et al., 2007).According to Cox (1996) in his model on supplier relationships, he proposes the following models that can be derived from RBV: arms length relationships which can be associated with low supplier competencies i.e. can easily be bought off the shelf, internal contracts associated with high asset specificity and competencies and lastly partnership relationships that can be associated with complementary competencies provided by external suppliers.

2.3 Supply Chain Management Practices

Despite the fact that literature on SCM practices varies in terms of perspective and approaches used, the common element in most of the studies is the expectation of improved supply chain performance when an organization employs good practices. Various researchers have looked at SCM practices from different points of view and most common four elements that appear in most of the studies are strategic supplier partnerships, lean practices, information technology sharing and outsourcing.

The main reason for selection of the four SCM practices is because they are closely interlinked and any organization is likely have the greatest impact on performance with a combination of all four. For instance strategic partnership with suppliers implies that there must be information technology sharing both within the firm and with its stakeholders to achieve meaningful gains. On the other hand, organizations that carry out lean practices tend to outsource those which do not constitute the firm's core competencies. Similarly such firms must be closely linked technological to enable efficiency of the outsourced services. The practices to be discussed next are: strategic supplier partnerships, lean practices, information technology sharing and outsourcing

2.3.1 Strategic supplier partnerships

Organizations form strategic partnerships with their suppliers to increase shared benefits and enhancement of participation in the main strategic areas such as technology, products and markets. The concept of partnering refers to a range of collaborative relationships. According to Lambert, Emmelhaing, and Gardner ,(1996) there are three types of partnering : type one has limited interactions, type two firms have a longer time view of the relationship, while in type three organizations share a significant operational and strategic integration and each firm views the other as an extension of its own firm. Strategic partnerships are mostly for long term durations and encourage joint planning and problem solving. Li et al (2004) define strategic supplier partnership as the long term association between firms and their suppliers. These types of relationships enable organizations to work more effectively with a leaner base of important suppliers who are willing to invest and apportion accountability in product development and innovation.

Organizations that engage in collaboration and early supplier engagement in product development, supplier appraisals and evaluation are able to mitigate supply chain risks and improve performance of their suppliers, whilst at the same time ensuring commitment to quality and on time delivery, (Lysons & Farrington, 2006). Increased collaboration between organizations in the supply chain reduces risk and improves efficiency. Supply chain adeptness thus relies majorly on successful long-term interrelationships in which information is shared and there is collective solving of problems and trust is a key success factor (Hugo, 2004).

2.3.2 Lean Practices

Leanness means a value chain that aims at eliminating all waste, including time and to enable a level schedule , (Naylor, aim and Berny , 1999) .Lean philosophy is method of waste reduction in the production process, through elimination of excess inventory, reduction of set up times and inactivity (Chavez et al., 2012; Li et al.,2005). JIT an aspect of the lean concept seek to reduce inventory levels, maintain quality of product and ensure equipment soundness (Cigolini, Cozzi and Perona 2004). Organizations can employ the lean concept in a variety of ways, they can have products on framework contract and buy Just-In-time, they can reduce the supplier base and deal with a leaner supplier source, and they can reduce inventory levels, and establish stringent quality systems for their products. The use of any of the above lean techniques will no doubt reduce production or acquisition costs and the long term effect is improved profit margins especially where these costs have a direct substantial impact on the total cost incurred by the organization.

Vendor Managed Inventory (VMI) is an aspect of JIT technique and it involves inventory replenishment decisions being centralized with upstream manufacturers or distributors. According to Lysons and Farrington (2006) VMI is normally based on hypothesis that the customer has entered into a synergetic or partnership agreement with a distributor who then stocks a specified range of items and meet specified service levels.

2.3.3 Information Technology Sharing

Lysons and Farrington (2006) defines E-supply chain management (e-SCM) as concerned with streamlining and optimizing the whole supply chain by means of internal applications, with the aim of enhancing increase of sales at the lowest possible cost. Due to increased competitiveness in the market place, the speed at which information must be passed within the supply chain and the accuracy of the information has become critical success factor for many firms. Organizations invest in modern software that can manage inventory, trigger orders to the suppliers, track shipments, provide real time information on product availability and enable firms to engage in collaborative planning.

Childhouse and Towill (2003) reveal that simplified material flow, including streamlining and making highly visible all information flow throughout the chain is key to an effective and

integrated supply chain. Information technology has created new possibilities for improving firm performance more so if the information can be shared with the intended partners. Wu, Kim, Cavusgil,(2006) considered that alignment and advancement of IT are positively connected to supply chain abilities, which in turn are linked to both an organization's marketing and financial performance.

2.3.4 Outsourcing

Outsourcing may be defined as a management strategy by which functions that are not core to the organization are assigned external providers that have specialization in the field of concern. Reilly and Tamkin (1996) mention that the possibility of loss of competitive advantage in areas of staff expertise and less investment internally, as well as loss of expertise to a firm's suppliers as a limitation of outsourcing. Lacity and Hirschem (1995) indicate that outsourcing may fail where a firm requires unique knowledge or when services are customized or where there is division among the employee ranks. Beulen et al., (1994) outline the five main drivers of outsourcing as: quality, cost, finance, core business and collaboration.

However various forms of organizational benefits have been related to outsourcing. Jennings, (2002) and Linder et al (2002) noted that possible benefits of outsourcing included profits, and various other advantages. Some of the notable benefits of outsourcing include gain of access to world class capabilities, improvement of organizational focus, making available of capital funds. Other benefits include improving of efficiencies, improvement of employee morale and productivity, creation of a more positive corporate image since an organization is focused on its core competencies.

2.4 Empirical Literature Review

Sundram et al., (2011) explored the impact of various supply chain management practices on supply chain performance in the electronics industry in Malaysia. The survey was carried out across 125 firms in Malaysia. The empirical results showed that six of the seven aspects of SCM practices have a significant positive effect on Supply chain performance. Agreed vision and goals showed a greater impact than other dimensions of SCM practices. However it should be noted that the study focused solely on the electronics segment of the manufacturing industry, in

addition geographical it was based on a different setting with different market dynamics which can be quite different with those in the local arena.

Green et al.,(2012) examined Green supply chain management practices: impact on performance. Data was collected from 159 manufacturing managers .Findings of this study were when green SCM practices are adopted, manufacturing firms are able to improve environmental, economic performance and be extension operational performance. Limitations of this study are that the research used 159 managers across various firms not in one setting. The study also analyzed only the effect of green SCM practices on the selected firms. It did not determine the extent to which the other SCM practices contributed to the improvement in performance that was mentioned in the findings.

Chang, Tsui, Hsu, (2013) examined E-procurement and supply chain performance. The study was done across 108 Taiwanese enterprises. According to the study, e-procurement contributes to supply chain performance through information sharing, supply chain integration and partnership. Mainly focused on e-procurement as the main independent variable. The other SCM practices were looked at in this study as processes through which e-procurement could impact SCM instead of being studied independently. The study was also limited to firms in a different geographical setting and hence a study has to be done locally to test whether the findings would change in a different set up.

Mwilu (2013) carried out a study on supply chain practices and performance among public research institutions. A sample size of thirty six was selected for the survey. The independent variables in the study were: green supply chain management practices, Long-term supplier relationships, Information technology, Lean suppliers, outsourcing services and logistics. The researcher concluded that while a number of SCM best practices had been adopted and implemented majority had been implemented to a moderate level. Notably involvement of suppliers in planning had been implemented to a small extent. Green SCM and long term relationships were found to be statistically weak. He also concluded from his findings that there was a strong statistical interrelation between SCM and firm performance in logistics, lean suppliers and information Technology.

Oketch Shimuli, (2014) examined supply chain performance and performance of manufacturing pharmaceutical firms in Kenya. Her study revealed a high investment in E-supply chain by the

pharmaceutical firms in Kenya. According to this study, this improved inventory flow among pharmaceutical firms in Kenya and reduced follow up and ordering time. The study also established that most pharmaceutical firms in Kenya had production rates that were sufficient to meet unexpected demand, which was attributed to the firms' suppliers delivering the materials in the right quantity and at the required time. The research was limited in that it focused only in one industry pharmaceuticals; in addition it was biased on the contribution of e-supply chain with no mention of the other supply chain practices and their impact on performance of these firms.

Mahulo (2015) examined supply chain management practices and performance of cement companies in Kenya. The study was carried out in six cement firms in Kenya. Findings of the study were that only 60% of the cement firms had adopted SCM practices to some extent. The study also concluded that there was a near perfect positive relationship between supply chain management practices and the organizational performance of the cement firms in Kenya. This study had limitations in that a small number of organizations were studied, and these were mainly from one sector of the economy. There is a possibility that with a larger number of firms and a different industry there could be different results.

2.5 Summary of Literature Review and Knowledge Gaps

The section summarized empirical review by scholars globally and locally. It contains the title of the study, major findings and knowledge gaps as summarized in table 2.1

Table 2.1 Summary of the Literature Review and Knowledge gaps

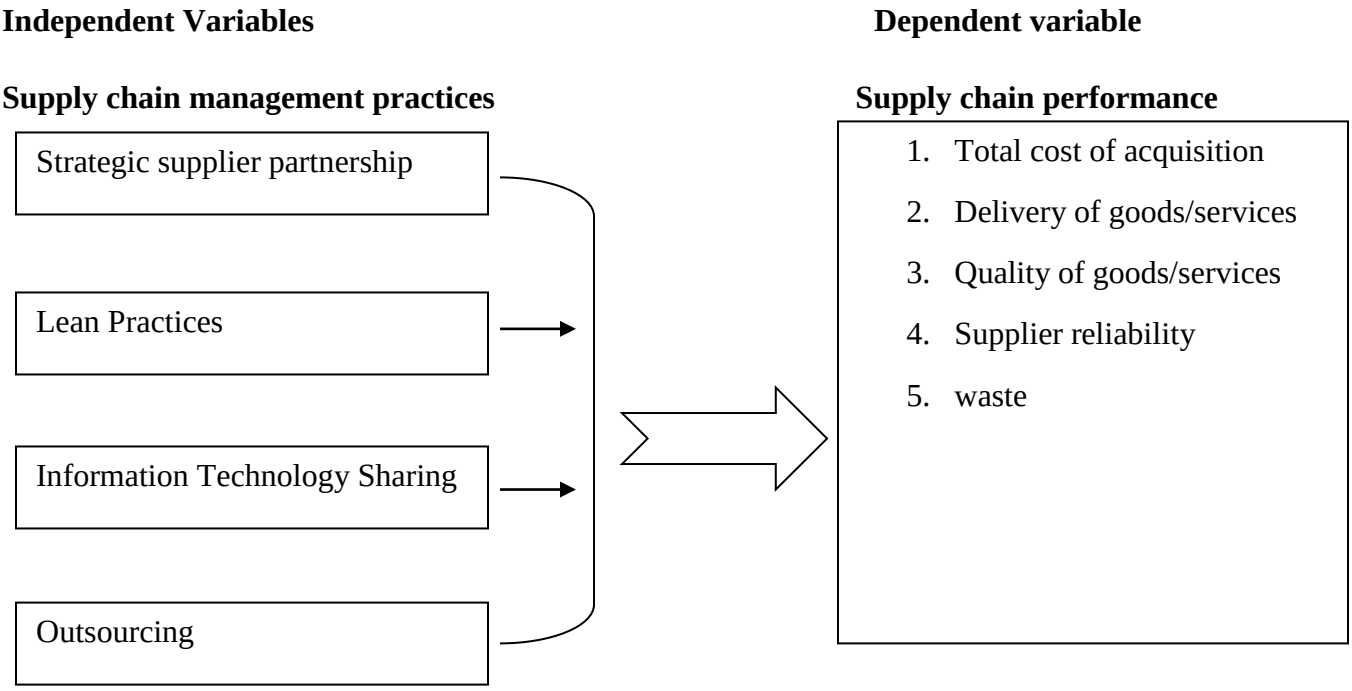
Scholars	Study	Major Findings	Knowledge gaps
Sundram et al., (2011)	Supply chain management practices in the electronics industry in Malaysia: consequences for supply chain performance.	Six out of the seven dimensions of SCM practices have a significant positive impact on SCM performance.	The study was limited to the electronics industry and based in a different geographical setting
Green et al., (2012)	Green supply chain management practices: impact on performance	It revealed that when green SCM practices are adopted, manufacturing firms are able to improve environmental, economic performance and by extension operational performance.	The study was limited to the impact of Green SCM on SCM performance. In addition the study is based in a different geographical and economic set up.
Chang et al.,(2013)	E- Procurement and supply chain management performance.	According to the research, e-procurement contributes to SCM performance through interrelationships, information sharing and integration.	The study was limited to E-procurement as the independent variable, a detailed study of how the other SCM practices impact performance was not done. The study was carried out under different geographical and economic setting in Taiwan.
Mwilu(2013)	Supply chain management practices and performance among public research institutions in Kenya.	There was a strong statistical relationship between SCM and firm performance in logistics, lean suppliers and information technology. Green SCM and early supplier planning had a weak relationship.	The study was limited to public research institutes only.
Oketch Shimuli(2014)	Supply chain management performance and performance of manufacturing pharmaceutical firms in Kenya.	Pharmaceutical firms had invested in e-supply chain to leading to improved monitoring of inventory flow and hence reduced follow up time. The study also concluded that firms were able to meet unexpected demand and supplier's delivered their products on time.	The study was limited to pharmaceutical firms only, and impacts of other SCM practices were not fully explored.
Mahulo (2015)	Supply chain management practices and performance of cement companies in Kenya.	60% of cement firms had adopted SCM practices to some extent and there was a positive interrelationship between SM practices and organizational performance of cement firms in Kenya.	The study was limited to the cement industry and the number of firms examined only six.

Source: Author (2016)

2.6 Conceptual Framework

The conceptual framework adopted for this study proposes that SCM practices will impact on organizational performance in private universities. SCM practices are conceptualized in four dimensions: strategic supplier partnership, lean practices, information technology sharing, outsourcing. The SCM practices are the independent variables while performance in private universities is the dependent variable.

Figure 2.1 Dependent and independent variables



Source: Author (2016)

Research Hypotheses

The conceptual framework developed in this study proposes that SCM practices have a direct impact on the overall supply chain performance of a firm. In accordance with the assumptions below is the hypothesis:

Firms that implement SCM practices to a great extent will have high levels of supply chain performance in terms of timelines in service delivery and quality of services offered.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter focuses on; the research design, study population, sampling frame and sample size, data collection methods, and data analysis methods that were used in the study.

3.2 Research Design

A descriptive research was used to carry out the study. A descriptive research investigates relationships between variables and for the purposes of this study the relationship between SCM and firm performance of private universities. Descriptive studies present data in a logical form thus helping to explain the characteristics of a given group in a given situation, (Kerlinger, 1999). A descriptive survey is applied in laying more emphasis in determining the frequency with which the variables are implemented or the extent to which the variables co-vary, (Kothari, 2004).

3.3 Study Population

The population of interest in this study comprised all twenty nine (29) private universities in Kenya (see Appendix 2). The study used a census survey since the population was small.

3.4 Data collection

The study used primary data collected through semi- structured questionnaires. The questionnaire is a quick method of obtaining data as compared to other instruments, (Mugenda and Mugenda 2003). The use of questionnaires the collection of a large amount of information from many people in a short duration at a minimum cost. The questionnaire consisted of three parts: part one covered questions about the general information of the organization being studied; the second section had questions regarding SCM practices carried out by the organization while part three captured the relationship between the SCM practices and SCM performance in each organization. The questionnaires were administered on a “drop and pick later” technique. A five point Likert scale was used for the closed ended questions as it was simple to design and easy for the respondents to read, comprehend and respond in the right manner to the statements put across. The respondents were the head of supply chain management from each organization or their equivalent.

3.5 Data Analysis

Both descriptive and inferential statistics was used to evaluate the variables numerically. The first objective of the study which was to establish SCM practices carried out in private universities in Kenya was analyzed using descriptive statistics. The second objective which was to establish the impact of SCM practices on performance on private universities in Kenya was analyzed using regression analysis.

The regression model was used for determining the relationship between SCM practices and performance in private universities in Kenya. The regression model consisted of several variables: the independent SCM practices (strategic supplier partnerships, lean practices, information technology sharing and outsourcing) and the dependent variable (SC performance of private universities) as provided in the model below

$Y= a+ b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 +e$

Where

Y = Supply chain performance

a = is the Y intercept when x is zero, b_1, b_2, b_3, b_4 are regression weights attached to the variables.

$X_1 \ldots\ldots X_n$ = coefficients

X_1 = strategic supplier partnerships

X_2 =lean practices

X_3 = information technology sharing

X_4= outsourcing

The table below gives a summary of how data collected was analyzed as per objectives of the study

Table 3.1 Summary of Data Collection and Data Analysis

Objectives	Data Collection	Data Analysis
General Information	Section A	Descriptive statistics
Objective 1	Section B	Descriptive statistics
Objective 2	Section C	Regression and correlation Analysis

Source: Researcher (2016)

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND INTERPRETATION

4.1 Introduction

This chapter consists of the analyzed data and findings that were obtained from primary data sources using a semi-structured questionnaire. Data analysis was done in line with the objectives of the study which sought to establish the supply chain management practices that are carried in private universities in Kenya, and to establish the impact on the supply chain management practices on performance of the private universities.

4.2 Response Rate

Out of the 29 questionnaires that were given out, 19 were filled successfully. This represents a response rate of 66% .According to Mugenda and Mugenda (1999), a 50% response rate is sufficient for analysis , a rate of 60% is acceptable, while that over 70% is considered excellent. In line with this assertion therefore, the response rate was considered sufficient to make generalizations on the SCM practices and supply chain performance of private universities in Kenya.

4.3 General Information

This section analyzed the demographic attributes of the respondents, including their level of education, employment duration in the organization and category of management whether top, middle or low. The aim was to evaluate whether the respondents were qualified to give reliable information in line with the objectives of the study.

4.3.1 Gender Information

The respondents were asked to state their gender. The table shows the responses

Table 4.1 Distribution of respondents by gender

	Frequency	Percent
Male	10	53%
Female	9	47%
Total	**19**	**100%**

Source: Research Data (2016)

From the table out of the nineteen (19) respondents, nine were female and ten were male, representing 47% and 53% respectively. This shows an even distribution of gender among those managing supply chain management in the private universities.

4.3.1 Level of Education

The study aimed at establishing the level of education of the respondent, to determine whether they had a clear understanding of supply chain practices and how these practices contributed to supply chain performance of private universities. The findings are presented in figure 4.1 below

Table 4.2 Respondents level of education

	Frequency	Percent
Diploma	4	21%
Bachelors Degree	13	68%
Masters	2	11%
Total	**19**	**100%**

Source: Research Data (2016)

From the findings in table 4.2, 11% had masters' education, 68 % had a Bachelors degree, and 21% had a diploma. The findings therefore concluded that the people involved in supply chain management in these organizations had requisite training to enable them participate adequately in the study.

4.3.2 Duration of Employment in the Organization

The study sought to establish the duration of the respondents employment in the organization. This was intended to determine whether the respondents had the relevant working experience in supply chain management and in the particular university being studied. The findings are presented in figure 4.3.2 below

Table 4.3 Respondents duration of employment in organization

	Frequency	**Percentage**
1-5 years	7	37%
6-10 years	8	42%
11-15 years	2	2%
Over 15 years	2	2%
Total	**19**	**100%**

Source: Researcher (2016)

From the findings in figure 4.3, 37% had worked in their organizations for between 1-5 years, 42% had worked for 6-10 years, and 11% had worked for 11-15 years while 11% had worked for over 15 years. The findings therefore concluded that the people involved in supply chain management in these organizations had adequate knowledge of the organizations where they were working and were able to give realistic information of the supply chain practices and how they affected performance.

4.3.3 Position of the respondents in management

The respondents were asked to indicate the position that they served to find out if they were qualified to give information with regard to supply chain management practices and performance in private universities in Kenya. The findings are presented in table 4.4 below.

Table 4.4 Respondents Management Level

	Frequency	**Percent**
Top	2	5%
Middle	16	84%
Low	1	11%
Total	**19**	**100%**

Source: Research Data (2016)

From the findings 11% were in low level management, 84% of the respondents in middle level management, while 5% in top level management. The findings therefore conclude that most of the respondents were in positions that allowed them to authoritatively comment on supply chain management practices in their organizations.

4.4 Extent of Supply chain management practices implementation

The study sought to determine the first objective which was to establish the supply chain management practices that are carried out in private universities in Kenya. The respondents were asked to rate the extent to which their organizations had adopted the four supply chain management practices that the study focused on namely: strategic supplier partnerships, lean practices, Information technology sharing and outsourcing. The questions adopted a 5 likert scale where 1= very small extent, 2= small extent, 3= moderate, 4= large extent, 5 = very large extent.

A summary of the four supply chain management practices and the extent to which the respondent organizations had carried them out was analyzed and results are presented in table 4.5 below

Table 4.5 Extent of implementation of supply chain management practices

Practices	Mean	Std.Deviation
Outsourcing	3.03	0.89
Strategic supplier partnerships	3.26	1.087
Information technology sharing	3.63	0.911
Lean practices	3.93	1.164

Source: Research Data (2016)

From the findings in table 4.5 above, the following SCM practices have been implemented to a large extent: lean practices (mean 3.93), Information technology sharing (3.63). Strategic supplier partnerships and outsourcing have all been moderately implemented in the private universities in Kenya with a mean of 3.26 and 3.03 respectively. These findings are consistent with previous research done, Mahulo (2015) in his study of supply chain practices and firm performance of cement companies in Kenya concluded that 60% of the cement firms in Kenya had adopted SCM practices to some extent. The findings are also consistent with those of Mwilu (2013) in his study of SCM practices among public research institutions in Kenya, where he concluded that while a number of SCM best practices had been adopted and implemented majority had been implemented to a moderate level.

4.5 Establishing the relationship between supply chain management practices implementation and supply chain management performance

The second objective of the study was to establish the impact of supply chain management practices on supply chain performance of private universities in Kenya. The aspects of supply chain performance that the study looked at included total cost of acquisition, delivery time of goods and services, quality of goods and services, supplier reliability and waste. A regression model was used to establish the relationship between the supply chain management practices and how they impacted on each of the aspects of the supply chain performance. SPSS package version 21 was used to analyze the data and the resulting regression coefficients have been used to interpret the magnitude and direction of the relationship.

4.5.1 Relationship between supply chain management practices and impact on total cost of acquisition of goods and services

Table 4.6 supply chain management practices and total cost of acquisition of goods and services

Variables	β	s.e	t value	p value
Constant	11.664	3.390	3.441	0.004
Strategic supplier partnerships	0.043	0.137	0.316	0.757
Lean practices	0.364	0.186	1.961	0.07
Information technology sharing	-0.264	0.344	-0.769	0.455
Outsourcing	0.470	0.361	1.302	0.214

F=1.654 R=0.566 R squared=0.321 p value=0.216 Source: Research Data (2016)

The resulting equation was as follows:

Y= 11.664 + 0.043SSP + 0.364LP – 0.264ITS + 0.470 OS

Where Y = Supply chain performance, SSP- strategic supplier partnerships, LP = lean practices, ITS = information technology sharing, OS= outsourcing

From the table above, strategic supplier partnerships has a weak positive relationship with performance in terms of total acquisition of goods and services , the relationship is not statistically significant at 5% confidence level since p =0.757 > 0.05. Information technology sharing has a negative relationship with this aspect of performance but the relationship is not statistically significant at 5% since p = 0.455 >0.05. Lean practices and outsourcing practices have a strong positive statistical relationship with performance however the relationships are not statistically significant at 5% since p = 0.07 and 0.214 respectively both greater than 0.05.

The coefficient of multiple determination (R^2 Square) is 0.321 implying that SCM practices account for only 32.1% of variability in performance in terms total cost of acquisition of goods and services.

Table 4.7 ANOVA (total cost of acquisition of goods and services)

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	25.876	4	6.469	1.654	.216[b]
	Residual	54.755	14	3.911		
	Total	80.632	18			

Source: Research Data (2016)

The table above indicates that the F static value was 1.654 with a significant change of 0.216. The p values are greater than the critical value ($p \geq 0.05$) which means that the impact of supply chain management practices is not significant on performance in terms of cost of acquisition of goods and services at 5% confidence level.

4.5.2 Supply chain management practices and delivery time of goods and services

Table 4.8 supply chain management practices and delivery time of goods and services

Variables	β	s.e	t value	p value
Constant	12.702	3.817	3.327	0.005
Strategic supplier partnerships	-0.010	0.155	-0.066	0.948
Lean practices	0.179	0.209	0.855	0.407
Information technology sharing	-0.144	0.387	-0.373	0.715
Outsourcing	0.587	0.406	1.444	0.171

F=0.692 R=0.406 R squared=0.165 p value =0.609 Source: Research Data (2016)

The resulting equation was as follows:

Y= 12.702 -.010SSP + 0.0179LP – 0.144ITS + 0.587 OS

Where Y = Supply chain performance, SSP- strategic supplier partnerships, LP = lean practices, ITS = information technology sharing, OS= outsourcing

From the table above, strategic supplier partnerships and information technology sharing have a negative relationship with performance in terms of delivery time of goods and services; however

the relationships are not statistically significant since p> 0.05 at 0.948 and 0.715 respectively. Lean practices has a weak positive relationship with this aspect of performance the statistical significance of the relationship insignificant since p= 0.407 >0.05, though outsourcing has a strong statistical positive relationship with performance in terms of timely delivery of goods and services the relationship is still not significant at 5% statistical confidence level (p =0.171 > 0.05).

The coefficient of multiple determination (R^2 Square) is 0.165 implying that SCM practices account for only 16.5% of variability in performance in terms delivery time of goods and services.

Table 4.9 ANOVA (delivery time of goods and services)

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.733	4	3.433	.692	.609[b]
	Residual	69.425	14	4.959		
	Total	83.158	18			

Source: Research Data (2016)

The table above indicates that the F static value was 0.692 with a significant change of 0.609. The p values are greater than the critical value ($p \geq 0.05$) which means that the impact of supply chain management practices is not significant on performance in terms of timeliness in delivery of goods/services at 5% confidence level.

4.5.3 Supply chain management practices and quality of goods and services

Table 5.0 supply chain management practices and quality of goods and services

Variables	**β**	**s.e**	**t value**	**p value**
Constant	13.841	4.106	3.371	0.005

Strategic supplier partnerships	-0.186	0.166	-1.121	0.281
Lean practices	0.208	0.225	0.925	0.371
Information technology sharing	0.199	0.416	0.479	0.639
Outsourcing	0.113	0.437	0.259	0.799

F=0.798 R= 0.431 R squared=0.186 p value=0.546 **Source: Research Data (2016)**

The resulting equation was as follows:

Y= 13.841 – 0.186SSP + 0.208LP + 0.199ITS + 0.113 OS

Where Y = Supply chain performance, SSP- strategic supplier partnerships, LP = lean practices, ITS = information technology sharing, OS= outsourcing

From the table above, all the supply chain management practices have relationships with performance that is not statistical significant at 5% since p in all the four cases is greater than 5%.

The coefficient of multiple determination (R^2 Square) is 0.186 implying that SCM practices account for only 18.6% of variability in performance in terms quality of goods and services.

Table 5.1 ANOVA*(quality of goods and services)*

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18.321	4	4.580	.798	.546[b]
	Residual	80.311	14	5.736		
	Total	98.632	18			

The table above indicates that the F static value was 0.798 with a significant change of 0.546. The p values are greater than the critical value ($p \geq 0.05$) which means that the impact of supply chain management practices is not significant on performance in terms of quality of goods at 5% confidence level.

4.5.4 Supply chain management practices and supplier reliability

Table 5.2 supply chain management practices and supplier reliability

Variables	β	s.e	t value	p value
Constant	10.065	3.089	3.258	0.006
Strategic supplier partnerships	-0.068	0.125	-0.540	0.598
Lean practices	0.304	0.169	1.799	0.094
Information technology sharing	0.037	0.313	0.117	0.909
Outsourcing	0.404	0.329	1.227	0.204

F=2.312 R= 0.615 R squared = 0.379 p value=0.131 **Source: Research Data (2016)**

The resulting equation was as follows:

Y= 10.065 – 0.068SSP + 0.304LP + 0.037ITS + 0.404 OS

Where Y = Supply chain performance, SSP- strategic supplier partnerships, LP = lean practices, ITS = information technology sharing, OS= outsourcing

From the table above, strategic supplier partnerships ,lean practices, information technology sharing and outsourcing all have relationships that are not statistically significant at 5% confidence level since the value of p in all four cases is greater than 0.05.

The coefficient of multiple determination (R^2 Square) is 0.379 implying that SCM practices account for only 37.9% of variability in performance in terms of supplier reliability.

Table 5.3 ANOVA (supplier reliability)

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27.695	4	6.924	2.132	.131[b]
	Residual	45.463	14	3.247		
	Total	73.158	18			

Source: Research Data (2016)

The table above indicates that the F static value was 2.132 with a significant change of 0.131. The p values are greater than the critical value ($p \geq 0.05$) which means that the impact of supply

chain management practices is not significant on performance in terms of supplier reliability at 5% confidence level.

4.5.5 Supply chain management practices and waste

Table 5.4 supply chain management practices and waste reduction in usage and storage

Variables	β	s.e	t value	p value
Constant	11.288	5.683	1.925	0.073
Strategic supplier partnerships	0.145	0.237	0.611	0.551
Lean practices	0.414	0.320	1.291	0.216
Information technology sharing	-0.575	0.582	-0.988	0.339
Outsourcing	0.718	0.608	1.180	0.256

F=0.781 R= 0.415 R squared= 0.172 p value=0.555 **Source: Research Data (2016)**

The resulting equation was as follows:

Y= 11.288 + 0.145SSP + 0.414LP - 0.575ITS + 0.718 OS

Where Y = Supply chain performance, SSP- strategic supplier partnerships, LP = lean practices, ITS = information technology sharing, OS= outsourcing

From the table above, information technology sharing has a negative relationship with performance in terms of waste reduction in usage and storage, however the relationship is not statistically significant since p = 0.339>0.05. From above analysis, strategic supplier partnerships has a moderate influence on usage and storage with p = 0.551 > 0.05 hence not statistically significant at 5% confidence level. Lean practices and outsourcing have a large positive relationship with performance, however this is also not statistically significant since p = 0.216 and 0.256 respectively both greater than 0.05.

The coefficient of multiple determination (R^2 Square) is 0.172 implying that SCM practices account for only 17.2% of variability in performance in terms of usage and storage.

Table 5.5 ANOVA (waste reduction in storage and usage)

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	36.711	4	9.178	.781	.555[b]
	Residual	176.239	15	11.749		
	Total	212.950	19			

Source: Research Data (2016)

The table above indicates that the F static value was 0.781 with a significant change of 0.555. The p values are greater than the critical value ($p \geq 0.05$) which means that the impact of supply chain management practices is not significant on performance in terms of usage and storage at 5% confidence level.

From the above findings, though all the SCM practices have strong positive relationship in most cases with the variables that were used to measure SCM performance, the results are not statistically significant at 5% confidence level. These findings contradict those by Mahulo(2010) in his study of SCM practices and performance of cement companies in Kenya who concluded that there was a near perfect fit in the relationship between SCM practices and performance in cement companies in Kenya.

CHAPTER FIVE: SUMMARY, DISCUSSIONS, AND RECOMMENDATIONS

5.1 Introduction

This study sought to explore the extent to which the private universities in Kenya practiced the four supply chain management practices: (strategic supplier Partnerships, lean practices, information technology sharing and outsourcing) and how the implementation impacts supply chain performance of these institutions. The objectives of the research were: to establish the supply chain management practices that are carried out in private universities in Kenya: to establish the impact of supply chain management practices on supply chain performance of private universities in Kenya. This chapter gives the discussion findings, conclusions, recommendations and suggestions for further research.

5.2 Summary of Findings and Discussions

The following were the findings from data analysis: on SCM practices, all four supply chain practices have been implemented to some extent, with strategic supplier partnerships and outsourcing having been implemented to a moderate extent, while lean practices and information technology sharing having been implemented to a large extent. On the analysis of the individual SCM practices, under strategic supplier partnerships involvement of suppliers in planning for new items had the lowest mean (2.40). On outsourcing, it can be concluded that most of the private universities studied did not have an outsourcing policy since the mean was lowest in this practice at 2.75. VMI is the least practiced lean practice with mean of 3.35.

Regarding relationship between SCM practices and supply chain performance of the private universities in Kenya, four variables were used as the indicators of the performance in the supply chain namely total cost of acquisition, quality of goods and services, delivery time of goods and services and supplier reliability were measured to assess the impact of supply chain practices. According to the findings, all the four SCM practices were found in many instances to have a positive statistical relationship with the aspects of performance that were measured. However the regression models showed that the relationships were not statistically significant at 5% confidence level. The coefficient of multiple determination (R^2 Square) derived from the

model also can be used to conclusively confirm that though the impact in supply chain performance in private universities can be explained by implementation of SCM practices, there are other factors that contribute a significant proportion of variations in SCM performance . These findings contradict those by Mwilu (2013) in his study of SCM practices among public research institutions in Kenya, where he found that the implementation of SCM practices accounted for 63.7 % variability in performance.

5.3 Conclusions

To summarize the findings, all the four SCM practices have been implemented in private universities in Kenya, with information technology sharing and lean practices implemented to a large extent, while outsourcing of non- core services and strategic supplier partnerships are implemented to a moderate extent

The research established that there was a positive statistical relationship between implementation of outsourcing and lean practices on supply chain performance. In addition all four SCM practices generally had positive statistical relationships with the aspects of performance that were being measured. However, all the relationships were not statistically significant at 5% confidence level since the value of $p > 0.05$. This therefore means that the variables were not good predictors of SCM performance and there were other factors that influenced performance in the supply chain besides the SCM practices. The results that were shown by the R^{2}-square showed that other variables not in the study were responsible for variability in SCM performance. There is possibility that if the numbers of variables are increased, the findings could then be statistically significant at 5% confidence level.

5.4 Recommendations from the study

Based on the results of the study, an aspect of strategic supplier partnerships namely early involvement of suppliers in planning had a very low mean indicating it was practiced to a low extent. The private universities in Kenya should therefore aim to develop strategic supplier partnerships by involving suppliers in early supplier development. From the findings of the study the significance level of the impact of implementation of SCM practices on SCM performance variables used in the study were not at 5% confidence level. A similar study can be done with more predictor variables to determine how implementation of SCM practices impact performance in private universities in Kenya.

5.5 Limitations of the Study and Suggestions for Further Research

There were limitations in terms of time and resources for this study since the private universities are spread across the country. Some of the firms were reluctant to participate in the study, whilst others were very busy and sparing time to fill in the questionnaires was a challenge. In addition balancing between a full time job and carrying out this research posed challenges to the researcher as sufficient time could not then be allocated to both.

The study is limited to only private universities in Kenya, with more resources and time a survey of more private institutions, including colleges and schools would give a broader result of these concepts.

The present study focused only on private universities in Kenya, a future study can be done to analyze SCM practices and performance of private colleges and schools. The study focused on SCM performance without analyzing quantitative details of the performance, future research can be done to analyze quantitative aspect of performance such as changes in profits among others. It would also be interesting to study how evaluation of the impact of variables would affect supply chain performance in private universities in Kenya.

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APPENDICES

Appendix 1: Questionnaire

This study aims at investigating the impact of supply chain management practices on performance among private universities in Kenya. The information provided will be used for academic purposes only and will be treated with maximum confidentiality.

PART A: Demographic Profile

1. Name of your organization? _____

2. Specify your Gender
   Male ( ) Female ( )

3. Education level (*Please tick where appropriate*)
   College/ Diploma ( ) Bachelors Degree ( ) Masters ( ) PHD ( )

4. How long have you been an employee in the organization?
   1-5years ( ) 6-10 years ( ) 11-15 years ( ) Over 15 years ( )

5. Please indicate the category you fall under
   Management level Top ( ) Middle ( ) Low ( )

PART B: Supply Chain management practices

Please indicate to what extent the following supply chain management practices are practiced in your organization. Use the scale 1-5 where 1 = Very small extent, 2= small extent 3= moderate, 4 = Large extent, 5 = very large extent.

Strategic supplier partnerships						
		1	2	3	4	5
	Suppliers are involved in the organization's procurement planning for new items.					
	There is early Supplier involvement in the development of specifications					
	There is an approved or preferred supplier list.					
	The organization has formal partnerships with suppliers					
	Supplier appraisal carried out at least once a year.					
	Supplier development is done for new suppliers.					
	The organization maintains a lean supplier base					
	Supplier awards are held at least once annually.					
Lean Practices						
		1	2	3	4	5
	The organization uses Just-In-Time techniques in its supply chain processes.					
	Vendor Managed Inventory of all or selected goods has been implemented in the organization.					
	There is a process of product development for any new items being sourced.					
	The organization has framework contracts of selected items.					

Information technology sharing						
		1	2	3	4	5
	There is free flow of information within the organization.					
	There is use Electronic data interchange (EDI) to manage supply chain management processes.					
	The organization uses intranet and extranet in its supply chain functions.					
	There is use supply chain management and inventory management software					
	Email and other aspects of information technology are used in supply chain operations.					
Outsourcing						
		1	2	3	4	5
	Services that are not core to the organization are outsourced.					
	There is existence of an outsourcing policy that the organization adheres to.					
	There is a monitoring mechanism for quality of outsourced services by the organization.					

Any other? Please state……

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PART C: Supply Chain management practices and performance

Please rate the impact of the given Supply chain management practices on the following listed aspects of supply chain performance Use the scale 1-5 where 1 = Very small extent, 2= small extent 3= moderate, 4 = Large extent, 5 = very large extent.

Strategic supplier partnerships						
		1	2	3	4	5
	Total cost of acquisition of goods and services is reduced					
	Timeliness in delivery of goods/services is improved.					
	Qualities of goods/services are mostly as per specification.					
	There is supplier reliability in delivery timelines and quality of goods being sourced.					
	There is reduction of waste in terms of usage and storage.					
Lean Practices						
		1	2	3	4	5
	Total cost of acquisition of goods and services is reduced					
	Timeliness in delivery of goods/services is improved.					
	Qualities of goods/services are mostly as per specification.					
	There is supplier reliability in delivery timelines and quality of goods being sourced.					
	There is reduction of waste in terms of usage and storage.					
Information technology sharing						
	Total cost of acquisition of goods and services is reduced					

	Timeliness in delivery of goods/services is improved.					
	Qualities of goods/services are mostly as per specification.					
	There is supplier reliability in delivery timelines and quality of goods being sourced.					
	There is reduction of waste in terms of usage and storage.					
Outsourcing		1	2	3	4	5
	Total cost of acquisition of goods and services is reduced					
	Timeliness in delivery of goods/services is improved.					
	Qualities of goods/services are mostly as per specification.					
	There is supplier reliability in delivery timelines and quality of goods being sourced.					
	There is reduction of waste in terms of usage and storage.					

Any other? Please state……

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Thank you very much for your participation.

Appendix 2: List of chartered private universities in Kenya

University Name	University Status (Acquired)
United States International University Africa(USIU-Africa)	1970
Mount Kenya University (MKU)	2006
University of Eastern Africa, Baraton	1992
Daystar University	1992
Africa Nazarene University	1994
Scott Christian University	1997
Kabarak University	2001
Strathmore University	2002
Zetech University	2014
Kiriri Women's University of Science and Technology	2001
Catholic University of Eastern Africa (CUEA)	1992
Pan Africa Christian University	2006
Kenya Methodist University	2006
Adventist University of Africa	2006
Gretsa University	2006
Great Lakes University of Kisumu	2006
Presbyterian University of Africa	2007
St. Paul's University	2007
KCA University	2007

Africa International University	2011
Riara University	2012
Nairobi International university	1981
The East Africa school of Theology	1979
Lukenya university	LIA
International University of Professional studies	LIA
Pioneer International university	LIA
Kenya Highlands Evangelical University	
Umma University	
International Leadership University	
Management University of Africa	

Source: n http://keadmissions.com/list-private-universities-kenya/, date 25th September 2016