

**THE EFFECT OF INVENTORY MANAGEMENT CONTROL ON THE
PERFORMANCE OF THE PROCUREMENT FUNCTION OF SOUTH NYANZA
SUGAR COMPANY**

BY

ROGO JULIUS GAD

**A RESEARCH REPORT SUBMITTED IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS
ADMINISTRATION (PROCUREMENT OPTION)**

DEPARTMENT OF MANAGEMENT SCIENCE

MASENO UNIVERSITY

© 2017

DECLARATION

I declare that this research report is my own work and has never been presented for any award.

Rogo Julius Gad
(MBA/BE/6004/2014)

Sign

Date

This research report has been submitted for examination with my approval as the university supervisor

Dr. Obura John Mark
Department of Management Science
Maseno University

Sign

Date

ACKNOWLEDGEMENT

I acknowledge the assistance from my parents, wife, children and supervisor.

DEDICATION

I dedicate this work to my loving wife Abigael Achieng Gad, children Darryl, Handel and Beverly Janet who gave me time and their endurance to achieve my masters degree.

ABSTRACT

Performance of procurement function in sugar companies has been an issue with the amount of raw material required at any given time not known. Analysis of cane stock at South Nyanza Sugar Company Limited indicated that at times there is idle cane lying at the yard. These causes pile up at the yard creating congestion, loss of cane tonnage and quality. On the contrary, there are times when there is no cane and hence stoppage of factory operations. This scenario is very expensive due to wastage and factory downtime. Effective inventory management in the supply chain of sugar companies is one of the key factors for their success. The challenge in managing inventory is to balance the supply of inventory with demand. Despite having put in place inventory management control, South Nyanza Sugar Company Limited still experience procurement performance challenges. This research therefore was designed to determine the effect of inventory management controls on the performance of the procurement function of South Nyanza Sugar Company. Specifically the study sought to assess the influence of a lean inventory system, establish the influence of strategic supplier partnerships and determine the influence of information technology adoption; on the performance of the procurement function of South Nyanza Sugar Company Limited. The study was guided by a conceptual framework where the dependent variable was performance of procurement function and independent variable was inventory management controls. Correlational research design was adopted. A census sampling was carried out on a population of 120 staff members of procurement department. Data was collected through research questionnaires. Reliability of the instrument was ascertained through test-retest method that gave over 70% consistency in responses while validity was gauged through expert's opinion. Regression analysis indicated that Lean Inventory ($\beta_1 = -0.164$, $p < 0.05$) was negative but significant predictor of performance of procurement function. Strategic supplier partnership ($\beta_2 = 0.031$, $p > 0.05$) and Information Technology adoption ($\beta_3 = 0.095$, $p > 0.05$) were positive but not significant predictors of performance of procurement function. Besides, the value of R^2 of 1.1% indicated that 1.1% variance in performance of procurement function was accounted for by the three inventory management controls. It was recommended that organizations should not invest much on lean inventory since it negatively influences performance of the procurement function; organizations should put in place measures to monitor implementation of Strategic supplier partnerships and Information Technology adoption since they influences performance of the procurement function. Future researchers can adopt other inventory control indicators.

TABLE OF CONTENTS

TITTLE PAGE	i
DECLARATION.....	ii
ACKNOWLEDGEMENT	iii
DEDICATION.....	iv
ABSTRACT.....	v
TABLE OF CONTENTS	vi
LIST OF TABLES	viii
LIST OF FIGURES	ix
ABBREVIATIONS AND ACRONYMS.....	x
OPERATIONAL DEFINATION OF TERMS	xi
CHAPTER ONE: INTRODUCTION	1
1.1 Background of the Study	1
1.2 Statement of the problem	4
1.3 Objectives of the study	5
1.4 Research Hypotheses.....	5
1.5 Justification of the study	6
1.6 Scope of the Study.....	6
1.7 Conceptual Framework	6
CHAPTER TWO: LITERATURE REVIEW	9
2.1 Theoretical literature	9
2.2 Empirical Literature	12
CHAPTER THREE: METHODOLOGY.....	20
3.1 Research Design	20
3.3 Target population	20
3.4 Sampling Frame	20
3.5 Data Collection.....	20
3.6 Data Analysis	21

CHAPTER FOUR: RESULTS AND DISCUSSIONS

4.1 Introduction.....22

4.2 Data Sources and Description..... 22

4.3 Descriptive Statistics.....22

4.4 Results of Regression Equation.....23

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS..... 29

5.1 Summary of Findings..... 29

5.2 Conclusion 29

5.3 Recommendations of the Study 30

REFERENCES..... 32

APPENDICES 34

Appendix 1: General Questionnaire..... 34

Appendix II: Questionnaire For Head of procurement department 34

Appendix III: Work plan 39

LIST OF TABLES

Table 4. 1: Descriptive Statistics of the Study Variables	22
Table 4. 2: Correlation Results of the Study Variables.....	23
Table 4. 3: Model Summary	24
Table 4. 4: ANOVA Results	24
Table 4. 5: Regression Results.....	25

LIST OF FIGURES

Figure 1: Conceptual Framework	7
---	---

ABBREVIATIONS AND ACRONYMS

MRP	-	Materials Requirements Planning Systems
JIT	-	Just – In – Time
EPOS	-	Electronic Point Of Sale
PSA	-	Product And Service Agreements
RDT	-	Resource Dependency Theory
GSCM-	-	General Supply Chain Management
ROA	-	Return Of Assets
SPSS	-	Statistical Package For Social Sciences
SCM	-	Supply Chain Management
EABL	-	East African Breweries Limited
ICT	-	Information Communication Technology

OPERATIONAL DEFINATION OF TERMS

Inventory Management - It is the process that ensures product availability while reducing investment costs for a company or institution.

Performance - It is the ability to gauge procurement function.

CHAPTER ONE: INTRODUCTION

This chapter highlights the background of the study statement of the problem study objectives and conceptual framework

1.1 Background of the Study

Inventory Management encompasses processes that ensure product availability while reducing investment costs for most companies, there are two forms of inventory: Physical and Logical. Physical inventory includes all the materials that are tangible and required to fabricate the final product. Inventory management involves identifying the most effective source of supply for each item in each stocking location. Forecasting and replenishment are also integral to inventory management. (Krautter, 2009; Schroeder, 2000 and Toomey, 2000)

The main purpose of the procurement function is to manage the process used for the purchase of goods and services by the organization. Inventory alone accounts for as much as 30% of the organization invested capital. (Lysons, 2012; Dobler and Burt 2006)

Sugar manufacturing companies do not manage and control their inventory holding, resulting in under stocking of the cane causing the company to stay off production and stock outs of the sugar thereby resulting to poor performance of the procurement function. This therefore creates relationship problems between inventory management and the performance of the procurement function. (Lysons, 2012)

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) and Materials Requirements Planning systems (MRP). Just-In-Time refers to a collection of practices that eliminate waste. These organization wide practices encompass the entire supply chain. JIT can lead to dramatic improvements in a manufacturing organization's return on investments, quality and efficiency. It emphasizes that production should create items that arrive when needed, neither earlier nor later. MRP system is defined as product- oriented

computerized technology aimed at minimizing inventory and maintaining delivery schedules. Lean inventory system therefore eliminates waste and minimizes inventories and maintains delivery schedules. (Lysons and Gillingham, 2003).

Though efforts have been made to adopt lean inventory system not much has been done to assess its influence on performance of a procurement function and hence the study was to assess the influence of a lean inventory system on the performance of the procurement function of South Nyanza Sugar Company limited.

Inventory control systems have been of concern for many years to business firms worldwide. Inventory control systems play a crucial role in enhancing effectiveness and efficiency in handling inventory of sugar. Companies have continually been in search for sources of sustainable competitive advantage in their operations. Therefore, there is need for business enterprises to embrace effective inventory management practices in order to improve their competitiveness. (Rajeev, 2008)

Strategic Supplier partnerships in inventory management affect the performance of the procurement function of a sugar manufacturing company. Supplier relationship management is the process that defines how a company interacts with its suppliers. Just as a company needs to develop relationships with its customers, it also needs to foster relationships with its suppliers. A Product and Service Agreements (PSA) is negotiated with each key supplier that defines the terms of the relationship. For segments of less critical suppliers, the PSA is not negotiable. Supplier relationship management is about defining and managing these PSAs. Long-term relationships are developed with a small core group of suppliers. (Lambert, 2006)

Supplier relationship management is the process that defines how a company interacts with its suppliers. Just as a company needs to develop relationships with its customers, it also needs to foster relationships with its suppliers. As in the case of customer relationship management, a company will forge close relationships with a small subset of its suppliers, and manage arm-length relationships with them. (Lambert, 2006)

Companies which are able to manage their long term business relationship by crafting mutually beneficial supply chains normally have high global volume, regular and standardized (predictable) demand, supply requirements and low switching costs. This reinforces long term business relationship and brand building. The primary objective of supply chain management is to fulfill customer demands through the most efficient use of resources, including distribution capacity, inventory, labour and by companies carefully selecting among all the options (rapid response, capacity adjustments, least cost approach and a combination of all these).

Objective of supply chain management is to provide a high velocity flow of high quality, relevant information that will enable suppliers to provide an uninterrupted and precisely timed flow of materials to customers. There is still more research required on how strategic supplier partnerships in inventory management affect the performance of the procurement function of a sugar manufacturing company. (Otieno, 2011 and Zinn, W; 2002)

Though supplier partnership has been embraced in most organizations, little is known on its relationship with the performance of the procurement function. This study was therefore to establish the influence of strategic supplier partnerships on the performance of the procurement function of South Nyanza Sugar Company limited.

Information technology is key in inventory management on the performance of the procurement function of a sugar manufacturing company. Computers assist in stock control in calculating the optimum amount of stock to hold and dispatch in order to satisfy the user requirements. The computer does this by comparing inventory variables (stock levels, demand and delivery dates). (Jessop, 2006).

Electronic point of sale, EPOS is another technology used in inventory management. EPOS scans and captures information relating to goods sold. An EPOS system verifies, checks and provides instant sales reports, charges transactions and sends out intra- and inter- stores messages. The EPOS technology allows substantial cost savings and gives “real time” information on sale of goods, patterns of stores traffic, and popularity and profitability of every line carried. Information technology brings potential benefits in form of reduced paper work,

greater accuracy of information, reduced staff costs and shorter lead times arising from instantaneous communication. (Lysons, 2012)

It is clear that information technology has been adopted by many organizations though not much has been conducted to determine how it influences performance of procurement function. This study was therefore designed to determine the influence of information technology adoption on the performance of the procurement function of South Nyanza Sugar Company limited.

1.2 Statement of the problem

Performance of procurement function in sugar companies has been an issue with the amount of raw material like cane required at any given time not known. Analysis of the stock of cane maintained at South Nyanza Sugar Company Limited cane yard that serves the factory indicated that many at times there is a lot of idle cane (4,000 tonnes of cane) lying at the yard awaiting crushing. This causes pile up at the cane yard which creates congestion, loss of cane tonnage, cane quality deteriorates and also the mills are interfered with. On the other hand there are times when the factory has no cane for milling and hence there is stoppage of factory operations due to lack of cane for milling. This scenario is generally very expensive to the Company because of the wastage and the factory downtime. Effective inventory management in the supply chain of sugar companies is one of the key factors for their success. The challenge in managing inventory is to balance the supply of inventory with demand. An organization does not want to have too much inventory staying on hand because of the carrying cost. 'Enough but not too much is the ultimate objective' For example, in the long run poor inventory management leads to litigation cases where farmers are compensated heavily because of harvesting their cane late and also taking a while before transporting it to the factory. Cane transporters get dissatisfied with poor offloading thereby influencing go slows to paralyze operations and their concerns heard. Despite all these, South Nyanza Sugar Company Limited has put in place inventory management control. This research therefore was designed to determine the effect of inventory management control on the performance of the procurement function of South Nyanza Sugar Company

1.3 Objectives of the study

The general objective of the study was to assess the effect of inventory management on the performance of the procurement function of South Nyanza Sugar Company Limited, Kenya.

The Specific objectives of the study are to:

- i. To assess the influence of a lean inventory system on the performance of the procurement function of South Nyanza Sugar Company Limited.
- ii. Establish the influence of strategic supplier partnerships on the performance of the procurement function of South Nyanza Sugar Company Limited.
- iii. Determine the influence of information technology adoption on the performance of the procurement function of South Nyanza Sugar Company Limited.

1.4 Research Hypotheses

i) Lean inventory system does not influence the performance of the procurement function of South Nyanza Sugar Company Limited.

ii) Strategic supplier partnerships does not influence the performance of the procurement function of South Nyanza Sugar Company Limited.

iii) Information technology adoption does not influence the performance of the procurement function of South Nyanza Sugar Company Limited.

1.5 Justification of the study

Researcher hopes that the study would help South Nyanza Sugar Company Limited (Sony) identify areas where costs can be reduced while ensuring overall efficiency in the factory is maintained. It would also propose to the management of Sony the current inventory management systems to implement in order to reduce costs associated with inventory management without reducing the service level while improving efficiency at the same time. The study could be used as basic information for procurement practitioners and inventory management staff to develop friendly policies and procedures for procurement.

1.6 Scope of the Study

The study was designed to assess the effect of inventory management on the performance of the procurement function of South Nyanza Sugar Company Limited, Kenya. It was conducted in South Nyanza Sugar Company Limited, which is located in Migori County in the Southern Part of Nyanza region.

1.7 Conceptual Framework

Conceptual framework brings forth independent and dependent variables. Independent variables influence the dependent variable. They help in predicting the amount of variation that occurs in the dependent variable. Value of the dependent variable depends on the independent variables. Independent variables include: lean inventory system, strategic supplier partnerships and information technology in sugar manufacturing companies. Dependent variable is the performance of the procurement function of sugar manufacturing companies. Relationship between independent variables and the dependent variable is of profound importance as it clearly stipulates the effect of inventory management on the performance of the procurement function of the sugar manufacturing companies.

Independent Variable

Dependent Variable

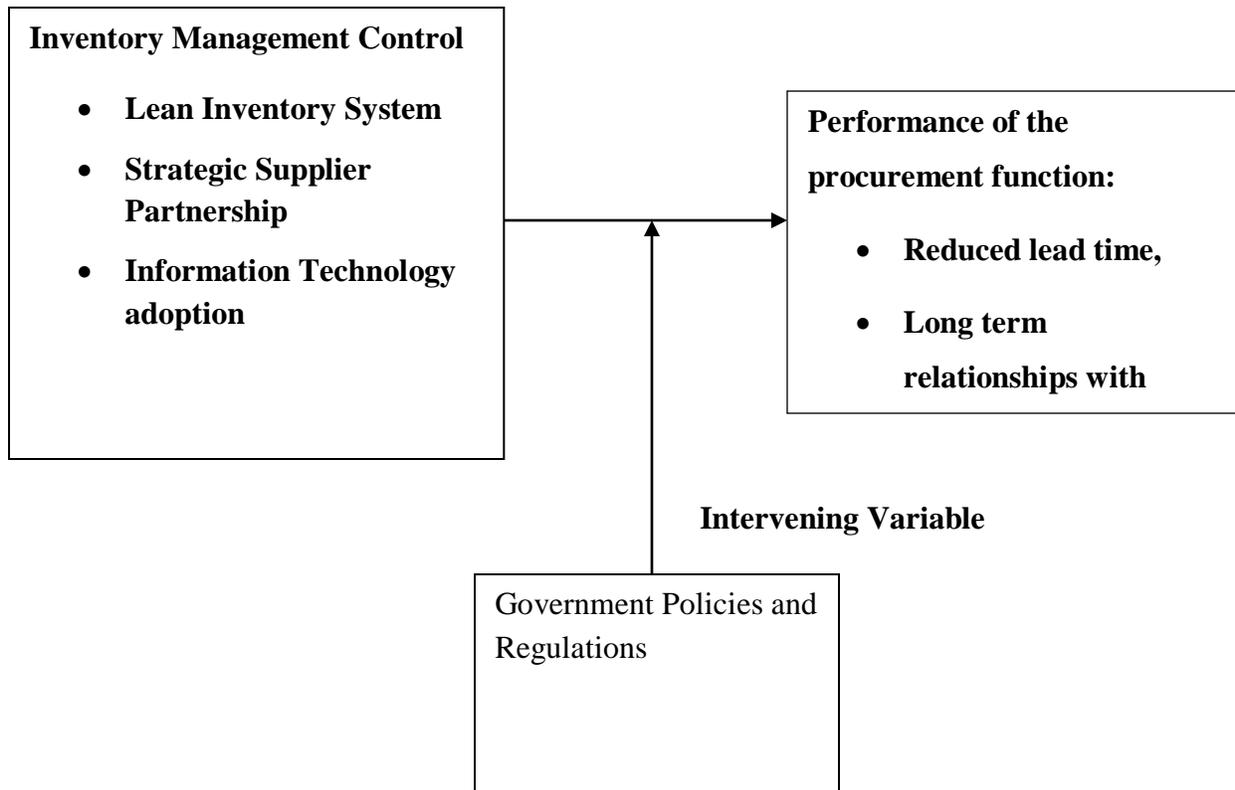


Figure 1: *Conceptual Framework*

Source: Self Conceptualization (2016)

Inventory Management control is very vital in the performance and growth of the procurement function in a sugar manufacturing company. The entire profitability of an organization is tied to the volume of products sold which has a direct relationship with the quality of the product. The procurement function does a lot to present a good company to the public in terms of quality production. Good inventory management control in any manufacturing organization saves the organization from poor quality production, disappointment of seasoned customers, loss of profit and good social responsibility. This is done by ensuring timely delivery of raw materials to the factory and distribution of finished goods. If inventory management control is not adequately maintained, production cannot meet the aspirations of customers which is a loss of revenue to the organization. Right from procurement to the time of processing, quality of raw material is the chief determinant of the productive efficiency of any manufacturing concern.

The performance of the procurement function encompasses the financial performance and market performance. Business profitability is a justification of its good performance and loss is a justification of poor performance. Profits are an indication of good performance. A higher percentage of the return on assets shows how profitable a company's assets are generating revenue.

CHAPTER TWO: LITERATURE REVIEW

This chapter reviews both theoretical and empirical literature on inventory management control and performance of procurement function.

2.1 Theoretical literature

2.1.1 The Concept of Inventory Management

An important factor in inventory management control relates to production scheduling. Continuous process manufacturers often produce a mix of products, one at a time, using the same equipment and facilities. Each time a different product is to be produced, it is necessary to stop the production process and make adjustments before proceeding. The costs of shutdown and adjustments, which are referred to here as changeover costs, can be rather high. Production time is lost while the facilities are closed down, and labor costs must be expended to make the necessary adjustments. As a consequence of the changeover costs, businesses try to find ways to minimize the number of changeovers. One of the principle ways of achieving this goal is through the use of inventory. Simply, a company can choose to make many short production runs on each product in the mix, thereby incurring many changeovers and having smaller lots in inventory or it can opt for long production runs and very few changeovers and increasing inventory lots, (Ritzman *et al*, 2003)

Inventory management has been well incorporated globally like for example Just-In-Time, which is a collection of practices, has been used well to eliminate waste in Japan. In Africa much is being done but not to the expectation. Kenya is yet to embrace inventory management in the local industries. Very few industries have adhered to inventory management.

Inventory management control entails holding an appropriate amount of inventory. Too much inventory consumes physical space, creates a financial burden, and increases the possibility of damage, spoilage and loss. On the other hand, too little inventory often disrupts business operations, and increases the likelihood of poor customer service. Inventory as an asset on the balance sheet of companies has taken on increased importance because many companies are applying the strategy of reducing their investment in fixed assets, like plants, warehouses, equipment and machinery, and so on, which even highlights the significance of reducing inventory. Changes in inventory levels affect return on assets (ROA), which is an important

financial parameter from an internal and external perspective. Reducing inventory usually improves ROA, and vice versa if inventory goes up without offsetting increases in revenue. (Coyle et al; 2003)

Lean production/manufacturing is also an important consideration in improving the performance of the procurement function. Lean production is also expected to improve the performance of the firms through good housekeeping practices, such as general waste reduction and minimizing hazardous wastes. (Sanchez and Ferez (2001))

Resource Dependency Theory (RDT) is another theory that seeks to reduce uncertainty and manage dependence by purposely structuring companies' supplier partnerships, establishing formal and semiformal linkages with other companies. Through interdependence, companies can synergistically combine their own resource sets with the complementary resources of their partners and thus develop a resource bundle that is unique and hard to imitate. By cultivating such partnerships-specific capabilities that become superior to what the organizations may possess on their own companies can obtain sustainable competitive advantage and improved procurement performance. In this aspect, RDT is a relevant theory to supply chain management because it can help elaborate organization-environment boundary spanning activities, implying that a single firm can hardly achieve sustainable growth. Therefore, firms need to depend on the buyer-supplier relationship which helps improve cooperation and coordination among supply chain members. (Sambhanya & Banerji, 2006; Pautraj & Chen 2007; Dyer, 2000)

For supply chain management to be strategic in nature, it is imperative that buyer firms adopt strategic supplier initiatives, that is, implementation of general supply chain management (GSCM) practices that foster an effective relationship to provide mutual benefits. In the context of GSCM, inter-organizational collaboration is even more important for managing the internal and external coordination and cooperation to have the system successfully implemented throughout the whole supply chain developed a decision model to measure environmental practice of suppliers using a multi-attribute utility theory approach which proposed the multiple attribute utility theory method for assessing a supply chain including re-use and recycling throughout the life cycle of products and services. (Zhu et al; 2010)

In adaptive structuration theory, it intends to determine the effects of information technology on inventory management. Structuration theory was first proposed to attempt to reconcile social systems and the micro/macro perspective of organizational structure. It was borrowed to propose AST and the rise of group decision support systems. AST provides the model whereby the interaction between advancing information technologies, social structures, and human interaction is described, and which social structures, rules, and resources provided by information technology (IT) as the basis for human activity. AST is a viable approach in studying how IT affects inventory management because it examines the change from distinct perspectives.

AST is relevant in today's inventory management practice due to the expanding influence that advancing technologies have had with regard to the human- interaction aspect of AST and its implication on socio-biologically inspired structuration in security software applications. AST theory presents specific advances in information technology that are driving organizational changes in the areas of business alignment, IT planning and development shows that AST is used as a driving force of effective management within organizations. This theory can be used to investigate how complexity of inventory management is influenced by Information Technology. In conclusion AST's appropriation process might be a good model to analyze the utilization and penetration of new technologies in organizations. Adaptive structuration theory is applicable to a proposal of effects of inventory management on the performance of the procurement function of a sugar manufacturing company. It therefore explains adaptive structuration theory in respect to information technology in inventory management on the performance of the procurement function. (Ramakrishna, 2005)

Lean production/manufacturing is also an important consideration in improving the performance of the procurement function. This proposal also looks at the link between lean production practices in manufacturing organizations and resultant enhanced competitiveness. Lean production is also expected to improve the performance of the firms through good housekeeping practices, such as general waste reduction and minimizing hazardous wastes. In conclusion, lean production is a complementary to improvements in the performance of the procurement function and it often lowers the marginal cost of pollution reduction thus enhancing competitiveness.

2.1.2 The Concept of Performance of Procurement Function

In 1880 there was a change in manufacturing practice from companies with relatively homogeneous lines of products to horizontally integrated companies with unprecedented diversity in processes and products. Those companies (especially in metal working) attempted to achieve success through economies of scale which are the gains of jointly producing two or more products in one facility. The managers now needed information on the effect of product-mix decisions on overall profits and therefore needed accurate product-cost information. A variety of attempts to achieve this were unsuccessful due to the huge overhead of the information processing of the time. However, the rapidly increasing need for financial reporting after 1900 created unavoidable pressure for financial accounting of stock and when management was required to cost manage products then it was overshadowed. In particular, it was the need for audited accounts that sealed the fate of managerial cost accounting. The dominance of financial reporting accounting over management accounting remains to this day with few exceptions, and the financial reporting definitions of 'cost' have distorted effective management 'cost' accounting since that time. This is particularly true of inventory.

2.2 Empirical Literature

2.2.1 Lean Inventory System and Performance of the procurement function.

Macharia 2014, sought to establish the lean procurement practices used in Safaricom Limited. This research study used a case study design. The quantitative data in this research was analyzed by descriptive and inferential statistics using Statistical Package for Social Sciences (SPSS version 20). Descriptive statistics includes mean, frequency, standard deviation and percentages. Data was then presented in tables, charts and graphs. Content Analysis was used in processing of qualitative data results were presented in prose form. Regression analysis was also used to establish the relationship between lean procurement and supply chain performance at Safaricom Limited. The study established that there is a positive significant relationship between lean procurement and supply chain performance. The study also established that Safaricom was lean procurement practices like involvement and empowerment of employees, supplier-firm relationship, pull system, total quality management, continuous improvement, e-procurement and 5S. The study recommends that telecommunication companies in Nairobi should ensure that they

engage services of qualified individuals who have the required expertise in the implementation of lean procurement practices that can assist in making informed lean procurement. In addition, the government of Kenya should also formulate policies to improve e-procurement.

Azman *et al*, 2010 explained the extents of lean supply chain practices and lean performances towards lean supply chain performances as experienced by Electrical and Electronics firms in Malaysia. The analysis approach that has been used in this study are simple regressions and multiple regressions in order to determine whether it's have the statistically significant to the existence of extensions between the set of variables to be tested for several defined groups that are directly involve in lean supply chain. The finding from this analysis revealed that cheaper cost towards internal waste lead and cycle time reduction were the most influential extended factors on lean supply chain performances, followed by better quality and faster throughput towards supplier engagement and collaboration. Whereas, demand signal component shows that there no direct influences through lean performances and lean supply chain performances. These are to say that not the demand signal factor doesn't contributed enough to the lean supply chain performances but it seems like the organizations giving less attentions to the demand signal activities. One of the limitations of this study is that the conclusion drawn from the survey was principally due to the variety of interpretations of what the term and concepts of "lean supply chain performances" actually means. Since, this is a newly concept that need to adapt, it's possible that the lean practitioners should have a solid knowledge before they implement it. It's a waste of multiple of resources if doing it wrongly. From practical implications point of views, attention should be given to improve employee participation and lean department should play a proactive role in practicing the lean supply chain as a strategic tool. Hence, the knowledge and information can be utilized to promote the acceptance and implementation of lean supply chain practices. Government bodies can therefore focus on related factors for further development of lean supply chain as a total improvement. Related government bodies for manufacturing and operation such as FFM, SME Corp and MPC can therefore focus on these factors for further research development of lean supply chain practices and performances. These organizations can organize more training and seminars to smaller manufacturing companies to expose the concept of lean supply chain upfront, as the concept can consider new, limits to insufficient resources

Keitany *et al* 2014 sought to assess the effects of lean production on organizational performance. The study was designed determine the elements of lean production, effect of lean production systems on product quality, strategies for waste reduction and the challenges of adopting lean production. The study adopted a descriptive research design. Data The study found out improving management style and involving all employees at all levels, as well as better inventory management leads to a more efficient practice of lean production. Material management and physical distribution are positively related and are therefore critical determinants of successful lean production practice within the organization. With a response rate of 75% the study concluded firms should adopt the use of lean production system as a means to improved performance.

2.2.2 Supplier Partnership and performance of the procurement function.

In Kenya, Mairura *et al*, 2015 on the effects of procurement practices on the performance of commercial state owned enterprises in Nairobi County. They adopted a descriptive design and found that buyer – supplier relationships had a strong impact on the performance of manufacturing companies. Also recommends that all commercial manufacturing companies must implement efficient procurement practices in order to become more efficient in their operations and overall service delivery.

Ngugiet *al*, 2014 determined how suppliers perceive the buying firm's supplier evaluation communication process and its impact on suppliers' performance. Therefore, understanding strategic buyer supplier alliance will have an impact on procurement performance. The main objective of the study was to examine the influence of strategic buyer supplier alliance on procurement performance in a private sector organization. A case study design was used for this study and targeted 100 management staff of Glaxo Smithkline. Descriptive statistics were used to summarize data and results presented using frequency distribution and tables. The findings of the study revealed that strategic buyer supplier alliance influences procurement performance. The study indicated that governance structure was the main factor in the relationship between procurement performance and strategic buyer supplier alliance

Kepher *et al*, 2015 evaluating the role of supplier management on procurement performance in manufacturing companies a case of East African breweries. Theories relevant to the study include: Deming's theory, network governance theory and social capital theory which all shows how the variables link up with the mentioned theories. Study variables were discussed under the conceptual framework there after operationalize. The study adopted a descriptive design with the population being the employees of East African breweries and their suppliers. Pilot test was also carried done on 5 employees (1.25%) before the actual data was collected to ensure validity and reliability of the research instruments. Data was edited, coded and analyzed by use of statistical package for social sciences (SPSS version 21) and presented through tables and graphs. The study findings indicated that 81% of change in procurement performance at EABL can be explained by four variables namely buyer supplier integration, Supplier quality management, Supplier collaboration, and Supplier Training. Supplier performance management is key to procurement performance as suppliers are integrated into organizations activities. EABL has a strong collaborative relationship with its suppliers and undertakes measures to train them. This has improved procurement performance to great extent (94.6%). However supplier integration and to be specific shared technology has not properly been achieved. EABL should focus more on integration and to maintain or improve on supplier collaboration and supplier training.

Ngunyi 2014, established effects of procurement practices on organizational performance of parastatals in Kenya. The research adopted a descriptive research design. The finding of the study was that procurement is both a driving force to competitive strategy selection and an important resource to achieving improved organizational performance. It was found that if procurement practices are employed effectively, and then is expected to improve firm-customer relationship, preserve the environment, motivate and improve the coordination of staff. One limitation of the study is that the researcher measured only the operational side of procurement and considering the early stages of procurement implementation on the organizations. Further research could extend on measuring the strategic level of procurement and analyze the impact of electronic procurement at the strategic level.

Rao *et al*, 2004 conceptualizes and develops five dimensions of supply chain management SCM practice (strategic supplier partnership, customer relationship, level of information sharing,

quality of information sharing, and postponement) and tests the relationships between SCM practices, competitive advantage, and organizational performance. Data for the study were collected from 196 organizations and the relationships proposed in the framework were tested using structural equation modeling. The results indicate that higher levels of SCM practice can lead to enhanced competitive advantage and improved organizational performance. Also competitive advantage can have a direct, positive impact on organizational performance.

2.2.3 Information Technology and Performance of the procurement function.

In Kenya, Wanjiruet *al*, 2014 mapped the effects of ICT adoption in procurement processes using Total Kenya limited case. The study used stratified sampling technique; the strata's was derived from the various employment levels that are top, middle and low level management. The study used a proportion of 15% from each stratum to select 45 respondents. The study relied on primary as well as secondary data. The study revealed that the impact of ICT adoption on procurement processes mainly refers to time reductions and quality improvements, rather than cost reductions as reported by many authors. The old view that ICT applications are associated with cost reductions is contested in this research. We found that company is likely to realize improvements in cycle time reductions and process quality. In terms of ICT adaptability, this study found that the company had not adopted more complicated e-business applications. From the study it is also clear that the adoption of ICT applications is not exclusively a matter of resources on the contrary, operational compatibility and the level of supply chain collaboration are two of the factors that play a determinant role in increased ICT adoption and impact assessment. The research was limited to a multinational company and thus the researcher recommends for further study in the topic of ICT adoption among the SME's sector and an analysis of the challenges experienced.

In Kenya, Mardia *et al*, 2016 sought to assess the information technology practices in procurement that influence organizational performance. The study used a descriptive survey design. Descriptive statistics and inferential statistics were used to analyze quantitative data. Information technology in procurement was established to positively and significantly influence organizational performance. The study concluded that information technology in procurement is a significant contributor to organizational performance in improving service delivery, efficiency, effectiveness, continuous Quality improvement, reduction in purchase price and transparency.

This study recommends that organization should prioritize information technology in procurement to improve its organizational performance. The government should emphasize adoption of information technology in procurement by public sector organizations.

Kamotho, 2014 focused on e-procurement practices and performance in state corporations and the study objectives were to establish the extent of e-procurement adoption among state corporations in Kenya, the challenges facing the adoption of e-procurement among state corporations in Kenya and the relationship between e-procurement and procurement performance among state corporations in Kenya. The target population of the study was all the state corporations in Kenya totaling two hundred and ten (210). A sample of 42 state corporations was taken out of this sampling frame. Data was collected through questionnaires. Analysis of the data was done using frequency and percentage tables to analyze the demographic information provided regarding the respondents and the organization, mean and standard deviation was used to analyze the various e-procurement practices adopted by the state corporations, data on challenges facing adoption of e-procurement was analyzed using means, standard deviation and factor analysis, whereas regression, means and standard deviation was used to analyze relationship between e-procurement and procurement performance among state corporations. The study found out that state corporations have adopted various e-procurement procurement practices to enhance their procurement performance. The regression analysis conducted revealed that the respective e-procurement practices adopted by state corporations have had a significant impact on their procurement performance. The study recommends that; the national government through line ministries should put an effort to bring the remnant state corporations to adopt e-procurement. The study reiterates the need for the relevant government organs to address the various challenges outlined in the study in order to make the goals of the e-procurement project feasible, and the need for more investments into research in critical success factors for successful adoption of e-procurement among state corporations in Kenya.

Ngombo *et al*, 2015 examine the effects of information technology on Logistic firm's performance in Nairobi Kenya to realize its significant impact on their operations in order to guarantee their profitability and growth. The target population was logistic firms within Nairobi County. Data was collected from 10 firms in the logistic industry suppliers in Nairobi. A set of

items, based on the research model, was developed, and aggregated into four scales for measuring the use of IT in company, and three scales for measuring the company performance. The data was analyzed using SPSS and result presented in form of tables and charts. The respondent rate was 93%. On the demographic data, the researcher sought to investigate the age of respondent, 10% of the respondents were aged between 18 to 26 years and 27 to 35 years of age respectively, 20% of respondent were aged between the ages of 36 to 45. On the ownership of the firms, majority 70% followed by other firms 20%, foreign firms was 10% while government does not own any logistic firms. On the extent to which the Information and Technology, the findings reveals over (50%) of the firms are not using IT in their departments and service delivering indicating low level of IT usage among logistic firms in Nairobi County. This shows that the factors that are not covered amount only to 20.9%. It is therefore, means the four factors have a big role to play on the performance of logistic firms in Nairobi County. The ANOVA result for all variables indicates that there was a highly significant relationship between the variables at $F = 2.729$ and $P = 0.000$. This implies that there is a strong relationship between the four variables and the performance of logistic firms in Nairobi County

Muhia *et al*, 2015 determined Role of E-procurement strategies in enhancing procurement performance in state corporations in Kenya with reference to Kenya Revenue Authority. The researcher adapted a descriptive research design as there are variables which cannot be quantified but can only be described in descriptive statistics. Through random stratified sampling method the researcher selected 45 respondents out of total of the 90 population of the staff from relevant Departments and will stratified into procurement management staff, Stores management staff, Operations and management Department staff in the organization. In addition, 20 suppliers were purposively selected to participate in the study. Findings of the study indicate that electronic communication positively influenced procurement performance in Kenya Revenue Authority as it leads to instant responses and real-time information. The findings also indicate that self-invoicing on behalf of clients can add to the bottom-line, month-end reconciliation can end the problem of the wrong items being ordered or the wrong price being offered as business processes have been streamlined and all are working off the same catalog. The internet, via e-procurement, has made procurement more effective and efficient in the sense that purchasing of

goods and services by organizations is made easier, faster and cheaper. Level of customer service influenced procurement performance in Kenya Revenue Authority.

2.3 Summary of Literature Gap

Contextually from the reviewed literature, it was clear that most researchers dwell on education sector and commercial state owned enterprises. None of the studies concentrated on sugar manufacturing companies, which the present study adopted.

Conceptually, most authors used lean supply, lean production and Just In time as a measure of inventory management control. While in the current study inventory management control was clearly used as a measure of lean practices, supplier partnerships and information technology adoption.

Further they used firm performance, industry performance, Just in Time (JIT) as a measure of organizational performance while the present study used performance of procurement function.

CHAPTER THREE: METHODOLOGY

This research chapter explains the research design, the target population, the sampling frame, sample size and the respondents of the study. It also summarizes the procedures for collecting both primary and secondary data, the techniques that was adopted for analyzing the data and the validity and reliability testing.

3.1 Research Design

The study adopted correlational design. Correlation design simply aims to determine the relationship between two or more variables, as well as how strongly these variables relate to one another.

3.2 Study Area

The study was conducted in South Nyanza Sugar Company Limited. The company was established in 1976 and is located in south western Kenya in Migori County

3.3 Target population

Population refers to an entire group of persons or elements that have at least one thing in common. Population also refers to the larger group from which a sample is taken Orodho & Kombo, (2002). A population can also be defined as including all people or items with the characteristic one wish to understand. The study population was 120 staff in procurement department in South Nyanza Sugar Company Limited as per the company records as at December 2015. These were staff that are on permanent and contract employment. They were in general stores, administration, and warehousing divisions.

3.4 Sampling Frame

Due to the small size of the population, saturated sampling of all the 120 staff was adopted.

3.5 Data Collection

3.5.1 Sources of Data

Both primary and secondary data was used in this study.

3.5.2 Data Collection Procedure

Primary data was collected through research questionnaires. While secondary data was obtained through review of company documents.

3.5.3 Data Collection Instrument

The study developed and used research questionnaire for collecting primary data.

3.5.4 Reliability Tests for data collection instrument

Reliability is a measure of the degree to which the research instrument yields consistent results or data after repeated trials and it is influenced by random errors. A measure is reliable to the extent that repeated application of it under the same condition by different researchers' gives consistent results. In this study, the reliability of the instrument was ascertained through the use of test-retest reliability method which gave over 70% consistency in responses.

3.5.5 Validity Test for Data Collection Instrument

Borg and Gall (1996) has defined validity as the degree to which a test measures what it purports to measure. Validity of the research instrument was gauged through expert opinion.

3.6 Data Analysis

Data was analyzed using inferential statistics like Pearson correlation analysis and regression analysis.

Regression model below was adopted:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

Where:

- Y- Procurement Performance
- $\beta_0, \beta_1, \beta_2, \beta_3$ are constants to be determined
- X_1 - Lean inventory system
- X_2 - Strategic Supplier partnering
- X_3 - Information technology adoption
- e- error term assuming a normal distribution and constant variance.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

This chapter presents the results and discussions of the findings.

4.1 Introduction

This chapter starts by examining the data sources and descriptions. The chapter then reports on the results of the effect of inventory management control on the performance of the procurement function of South Nyanza Sugar Company

4.2 Data Sources and Description

This study used primary data collected from 120 staff members of procurement department sources.

4.3 Descriptive Statistics

Table 4. 1: Descriptive Statistics of the Study Variables

	N	Minimum	Maximum	Mean	Std. Deviation
LI	120	2	5	3.48	.907
SSP	120	1	5	2.91	1.243
ITA	120	1	5	3.15	1.261
PPF	120	2	5	3.51	.953
Valid N (listwise)	120				

The mean of all the variables were positive with the highest being 3.51 and lowest being 2.91. The variables were not very highly dispersed from the mean as seen from the standard deviations with the highest standard deviation being 1.261 and lowest being 0.907.

From the correlation statistics presented in Table 4.2, performance of procurement function was found to have a weak negative but significant correlation with lean inventory ($r=-0.165$, $p<0.05$), a weak positive but not significant correlation with strategic supplier partnership ($r=0.025$, $p>0.05$) and a weak positive but not significant correlation with Information Technology adoption ($r=0.09$, $p>0.05$)

The finding that performance of procurement function was found to have a weak negative but significant correlation with lean inventory ($r=-0.165$, $p<0.05$) contradicts the findings by

Macharia 2014, who established that there is a positive significant relationship between lean procurement and supply chain performance.

The finding that performance of procurement function was found to have a weak positive but not significant correlation with strategic supplier partnership ($r=0.025$, $p>0.05$) supports those of Mairura *et al*, 2015 who found that buyer – supplier relationships had a strong impact on the performance of manufacturing companies. It further supports the findings by Ngugiet *al*, 2014 who revealed that strategic buyer supplier alliance influences procurement performance

The finding that performance of procurement function was found to have a weak positive but not significant correlation with Information Technology adoption ($r=0.09$, $p>0.05$) supports those by, Mardia *et al*, 2016 who concluded that information technology in procurement is a significant contributor to organizational performance in improving service delivery, efficiency, effectiveness, continuous Quality improvement, reduction in purchase price and transparency

Table 4. 2: Correlation Results of the Study Variables

	LI	SSP	ITA	PPF
LI	1			
SSP	-.050*	1		
ITA	.003	-.141	1	
PPF	-.165	-.025	-.090	1

*. Correlation is significant at the 0.05 level (2-tailed).

Dependent variable; PPF

Source: Research data, 2016

4.4 Results of Regression Equation

To establish the effect of inventory management control on the performance of the procurement function of South Nyanza Sugar Company, linear regression analysis was conducted. As shown from the ANOVA table presented in Table 4.3, the observed R^2 was slightly different from zero and the linear regression equation could predict performance of the procurement function.

Results presented in Table 4.4 which displays the model summary show that Lean inventory, Strategic supplier partnership and Information technology adoption together explained 1.1% of the variance in performance of the procurement function (Adj. $R^2=.011$).

Table 4. 3: Model Summary

Model	R	Adjusted	Std. Error
	R Square	R Square	of the Estimate
1	.191 ^a	.036	.947

a. Predictors: (Constant), lean inventory, Strategic supplier partnerships, information technology adoption
Source: Research data, 2016

As shown from the ANOVA table presented in Table 4.5, the F-test was highly insignificant ($F_{0.05; 3, 119}=1.458, p>0.05$). This indicates that the hypothesized linear regression model was statistically adequate but there are some variables which may contribute to the performance of the procurement function.

Table 4. 4:ANOVA Results

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	3.924	3	1.308	1.458	.230 ^a
Residual	104.067	116	.897		
Total	107.992	119			

Predictors: (Constant), lean inventory, Strategic supplier partnerships, information technology adoption

Dependent Variable: Performance of procurement function

Source: Research data, 2016

Table 4.4 presents results of the regression analysis in which performance of the procurement function was regressed on Lean inventory, Strategic Supplier Partnership and Information Technology Adoption.

Table 4. 5: Regression Results

Model	Unstandardized		Standardize		
	Coefficients		Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3.813	.478		7.972	.000
LI	-.172	.096	-.164	-1.795	.075
SSP	.023	.071	.031	.332	.741
ITA	.072	.070	.095	1.029	.306

a. Dependent Variable: Performance of procurement function

Source: Research data, 2016

Table 4.5 indicates that Lean Inventory ($\beta_1 = -0.164$, $p < 0.05$) was negative but significant predictor of performance of procurement function. Strategic supplier partnership ($\beta_2 = 0.031$, $p > 0.05$) and Information Technology adoption ($\beta_3 = 0.095$, $p > 0.05$) was positive but not significant predictors of performance of procurement function.

Besides, the value of R^2 indicates the prediction power of the proposed model. Consequently, 1.1% of the variance in performance of procurement function was accounted for by the three inventory management controls used.

4.4.1 Influence of a lean inventory system on the performance of the procurement function

Objective one sought to assess influence of a lean inventory system on the performance of the procurement function of South Nyanza Sugar Company Limited. The regression equation showed that a unit standard deviation increase in Lean Inventory was likely to decrease performance of procurement function by 0.164 i.e Lean Inventory ($\beta_1 = -0.164$, $p < 0.05$) was negative but significant predictor of performance of procurement function.

This finding contradicts those of Macharia, 2014 who sought to establish the lean procurement practices used in Safaricom Limited and established that there is a positive significant relationship between lean procurement and supply chain performance. The study also established that Safaricom was lean procurement practices like involvement and empowerment of employees, supplier-firm relationship, pull system, total quality management, continuous improvement, e-procurement and 5S. The study recommends that telecommunication companies

in Nairobi should ensure that they engage services of qualified individuals who have the required expertise in the implementation of lean procurement practices that can assist in making informed lean procurement. In addition, the government of Kenya should also formulate policies to improve e-procurement.

The findings further disagrees with Azman *et al*, 2010 who explained the extents of lean supply chain practices and lean performances towards lean supply chain performances as experienced by Electrical and Electronics firms in Malaysia. The study revealed that cheaper cost towards internal waste lead and cycle time reduction were the most influential extended factors on lean supply chain performances, followed by better quality and faster throughput towards supplier engagement and collaboration.

Finally the results contrasts that of Keitany *et al* 2014 who sought to assess the effects of lean production on organizational performance and found out improving management style and involving all employees at all levels, as well as better inventory management leads to a more efficient practice of lean production. Material management and physical distribution are positively related and are therefore critical determinants of successful lean production practice within the organization.

4.4.2 Influence of strategic supplier partnerships on the performance of the procurement function

Objective two sought to establish the influence of strategic supplier partnerships on the performance of the procurement function of South Nyanza Sugar Company Limited. The regression equation showed that a unit standard deviation increase in strategic supplier partnerships was likely to increase performance of procurement function by 0.031 i.e Strategic supplier partnership ($\beta_2=0.031$, $p>0.05$) was positive but not a significant predictor of performance of procurement function.

This finding concur with those of Mairura *et al*, 2015 on the effects of procurement practices on the performance of commercial state owned enterprises in Nairobi County and found that buyer –

supplier relationships had a strong impact on the performance of manufacturing companies. The findings supports those of Ngugiet *al*, 2014 who determined how suppliers perceive the buying firm's supplier evaluation communication process and its impact on suppliers' performance and revealed that strategic buyer supplier alliance influences procurement performance.

The results further supports those of Ngunyi 2014 who established the effects of procurement practices on organizational performance of Parastatals in Kenya and found that if procurement practices are employed effectively, and then is expected to improve firm-customer relationship, preserve the environment, motivate and improve the coordination of staff. Finally the results supports those of Rao *et al*, 2004who conceptualized and developed five dimensions of supply chain management SCM practice (strategic supplier partnership, customer relationship, level of information sharing, quality of information sharing, and postponement) and tests the relationships between SCM practices, competitive advantage, and organizational performance. The results indicated that higher levels of SCM practice can lead to enhanced competitive advantage and improved organizational performance.

4.4.3 Influence of information technology adoption on the performance of the procurement function

Objective three sought to determine the influence of information technology adoption on the performance of the procurement function of South Nyanza Sugar Company Limited. The regression equation showed that a unit standard deviation increase in Information Technology adoption was likely to increase performance of procurement function by 0.095 i.e Information Technology adoption ($\beta_3 = 0.095$, $p > 0.05$) was positive but not significant predictor of performance of procurement function.

The findings concur with those of Wanjiruet *al*, 2014 who mapped the effects of ICT adoption in procurement processes using Total Kenya limited case. The study revealed that the impact of ICT adoption on procurement processes mainly refers to time reductions and quality improvements, rather than cost reductions as reported by many authors. The study further agrees with Mardia *et al*, 2016who sought to assess the information technology practices in procurement that influence organizational performance. The study concluded that information technology in procurement is a significant contributor to organizational performance in

improving service delivery, efficiency, effectiveness, continuous Quality improvement, reduction in purchase price and transparency.

The findings further supports those of Kamotho, 2014 who focused on e-procurement practices and performance in state corporations and found out that state corporations have adopted various e-procurement procurement practices to enhance their procurement performance.

Finally the results concur with those of Muhia *et al*, 2015 who determined Role of E-procurement strategies in enhancing procurement performance in state corporations in Kenya with reference to Kenya Revenue Authority and indicated that electronic communication positively influenced procurement performance in Kenya Revenue Authority as it leads to instant responses and real-time information.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter summarizes the results of the study, reports the conclusions drawn and provide recommendations

5.1 Summary of Findings

The purpose of this study was to determine the effect of inventory management control on the performance of the procurement function of South Nyanza Sugar Company. The summary of findings therefore focuses on the following objectives of the study.

Objective one sought to assess the influence of a lean inventory system on the performance of the procurement function of South Nyanza Sugar Company limited. The study revealed that Lean Inventory had a significant negative influence on performance of procurement function

Objective two sought to establish the influence of strategic supplier partnerships on the performance of the procurement function of South Nyanza Sugar Company Limited. The study revealed that strategic supplier partnerships had insignificant positive influence on performance of procurement function.

Objective three sought to determine the influence of information technology adoption on the performance of the procurement function of South Nyanza Sugar Company Limited. The study revealed that Information Technology adoption had insignificant influence on performance of procurement function.

5.2 Conclusion

Objective one sought to assess the influence of a lean inventory system on the performance of the procurement function of South Nyanza Sugar Company limited. The finding that Lean Inventory had a significant negative influence on performance of procurement function led to the rejection of null hypothesis that Lean inventory system does not influence the performance of the procurement function of South Nyanza Sugar Company Limited.

Objective two sought to establish the influence of strategic supplier partnerships on the performance of the procurement function of South Nyanza Sugar Company Limited. The finding that strategic supplier partnerships had insignificant positive influence on performance of procurement function led to the rejection of the null hypothesis that Strategic supplier partnerships does not influence the performance of the procurement function of South Nyanza Sugar Company Limited.

Objective three sought to determine the influence of information technology adoption on the performance of the procurement function of South Nyanza Sugar Company Limited. The finding that Information Technology adoption had insignificant influence on performance of procurement function led to the rejection of the null hypothesis that Information technology adoption does not influence the performance of the procurement function of South Nyanza Sugar Company Limited.

5.3 Recommendations of the Study

In the light of the findings which are informative, the following recommendations from the study were made:

Based on the conclusion of objective one that Lean inventory system negatively influences the performance of the procurement function of South Nyanza Sugar Company Limited, the study recommends that organizations should not invest much on lean inventory since it negatively influences performance of the procurement function.

Based on the conclusion of objective two that Strategic supplier partnerships positively influences the performance of the procurement function, the study recommends that organizations should put place measures to monitor implementation of Strategic supplier partnerships since it influences performance of the procurement function.

Based on the conclusion of objective three that Information Technology adoption positively influences the performance of the procurement function of South Nyanza Sugar Company Limited, the study recommends that organizations should put much of the investments on

Information Technology adoption since it positively influences performance of the procurement function.

REFERENCES.

- Borgatti, S.P. & Foster, P.C. (2003). The Network Paradigm in Organizational Research: A Review and Typology. *Journal of Management*.
- Child, J., (1972) "Organizational structure, environment, and performance: the role of strategic Choice". *Sociology*.
- Dobler and Burt. (2006). *Purchasing management. (6th Ed.). McGraw hill international Edition.*
- Douglas M. Lambert, (2006). *Supply Chain Management: Processes, Partnerships, Performance, Supply Chain Management Institute.*
- Kros, J. F., Falasca, M., & Nadler, S. S. (2006). Impact of JIT inventory systems on OEM suppliers. *industrial management and data systems*, 106, 224-241.
- Ketchen Jr., G., & Hult, T.M. (2007). "Bridging organization theory and supply chain management: The case of best value supply chains". *Journal of Operations Management*, 25(2) 573-580
- Kandampully, J. (2003). B2B Relationships and Networks in the Internet Age, *Journal Management Decisions*.
- Nagurney, A. (2010). Optimal Supply Chain Network Design and Redesign at Minimal Total Cost and with Demand Satisfaction, *International Journal of Production Economics*.
- Lysons, K., and Farrington, B., (2012). *Purchasing and Supply Chain Management*, Prentice Hall. London
- Lyson, K. (2006). *Purchasing and Chartered Institute of Purchasing and Supply*, London: *Pitman Publishing*.
- Eroglu, C., & Hofer, C. (2011). Lean, leaner, too lean? The inventory -performance link revisited. *Journal of operations management*, 356-369.
- Green, K. W., & Inman, R. A. (2005). Using a JIT selling strategy to strengthen supply chain linkages. *International journal of production research*, 43, pg 3437-3453.
- Keitany, P., Riwo, Abudho, (2014). M. Effect of lean production on organizational performance.
- Otieno (October 2011) ' *International Journal of Biodiversity and Conservation Vol. 3 11* , pp. 610-617,

- Rajeev, N. (2008). an evaluation of inventory management in indian machine tool SMEs: An exploratory. 4th IEEE international conference on management of innovation and technology (pp. 1412-1417). Bank, Thailand: bank.
- Ramakrishna, R. V. (2005). material management. profit centre-Indian Institute of material management knowledge bank.
- Salawati, S., Tinggi, M., & Kadri, N. (2012). inventory management in Malaysian construction firms: impact on performance. SIU Journal management, 2, 59-60.
- Schroeder, R.G. (2000). Operations Management Contemporary Concepts and Cases.USA: *International Edition*.
- Sylvia .C. Wanyonyi and Willy Muturi,. (2015). *Study factors affecting performance of procurement function among public technical training institutions in Kisumu County, Kenya*.
- Schroeder, R.G., 2000. Operations Management- Contemporary Concepts and Cases.USA: International Edition.
- Toomey, J. (2000). Inventory Management principles concepts and Techniques, Kluwer Academic Publisher: Boston
- Wagner, (2002), Creating and Appropriating Value in Collaborative Relationships, Journal of Business Research.

APPENDICESE

Appendix 1: General Questionnaire

- 1) What are the effects of inventory management system in an organization?
- 2) When inventory management control systems are implemented what are their impacts to an organization?
- 3) What impact does strategic supplier partnership have to an organization?
- 4) If information technology is key to inventory management control, how do they relate?
- 5) What role does Just in Time play to an organization?
- 6) How would you explain the relationship between inventory management control and procurement performance?

Appendix II: Questionnaire For Head of procurement department

“Please note that the information to be provided here will be handled in strict confidence”

Please answer the question according to the instructions provided.

Part 1 The institutions background Information

1. What is your rank in organization
2. Do you play any role in the purchasing of items in your institutions?
3. Is purchasing and supplies department considered to be a key department in your institution? Yes or No?
4. How would you rate the effectiveness and adequacy of supply department in delivery of supplies such as cane, equipments and consumables?

5. i) Do you understand what decentralized/ centralized purchasing is?

If yes, then answer the next question.

ii) Buying goods and services should be decentralized to enable facilities buy for themselves what they need, explain.

6. To discharge its responsibility adequately, stores department must actively cooperate with other department not only to provide services but to give and receive information.

7. Most of the times the goods that are purchased for your department do not meet the standards and as such we end up spending more money to cover for the shortfall.

Part II Information Technology Adoption

8. Indicate your level of agreement to the following statements in regard to Information Technology Adoption. Use key 1-5 where:

1 Undecided-- 2 Strongly disagree.-- 3 Disagree -- 4 Agree 5--Strongly agree

	1	2	3	4	5
a. Level of Information system implementation					
b. IT adoption has helped improve the procurement process					
c. IT adoption has led to efficiency					
e. IT adoption has led to efficient inventory management					
f. IT adoption has improved procurement function					

Part III Strategic Supplier Partnership

9. Indicate your level of agreement to the following statements in regard to strategic supplier partnership. Use key 1-5 where:

1 Undecided-- 2 Strongly disagree.-- 3 Disagree -- 4 Agree 5--Strongly agree

	1	2	3	4	5
a. Planning of trainings with suppliers					
b. holding joint meetings with suppliers					
c. Getting feedback from suppliers					
d. partnering with suppliers has improved procurement processes					
e. supplier partnership is key to procurement performance					

Part IV Lean Inventory

10. Indicate your level of agreement with the following statements with regard to lean inventory is from the following statements. Use key 1-5 where: *1 very small extent—2 small extent—3 moderate extent—4 large extent –5 Very large extent*

	1	2	3	4	5
a. Inventory levels need not to be high in an your institution.					

b. Inventory carrying costs are high when a lot of inventory is kept in the stores.					
c. Inventory carrying cost is a key contributor to the overall running costs in the institution.					
d. Management of reorder levels and warehouse space usage coupled with timely transport is key to reducing inventory levels and inventory costs					

Part V Performance of Procurement Performance

11 a.) Is your performance level good enough given the environment in which your organization operates? Yes or No

b.) Indicate your level of agreement to the following statements in regard to service deliveries; Use key 1-5 where:

1 strongly agree --2 agree--3 indifferent-- 4 disagree--5 strongly disagree

	1	2	3	4	5
a. The Public Procurement and Disposal act of parliament 2005 has contributed to efficiency in supply of goods and services					
b. In your organization majority of goods bought from suppliers are used well so that none of the supplier expires or become obsolete.					
c. Most of the times the goods that are purchased for your department do not meet the standards and as such you end up spending more money to cover for the shortfall.					
d. One single department will rarely provide customer’s entire needs. Across functional linkage of different departments and activities is more effective					

<p>e. Centralization of supply chain (that is buying from head quarters) has contributed to gross inefficiency and delayed deliveries of supplies to the district Hospitals.</p>					
<p>f. The central financing of district hospitals management is done adequately and in time and managers have flexibility of maximizing usage of the finances located to the hospitals.</p>					

Appendix III: Work plan

Month	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	JAN	FEB
Activity											
Draft Proposal writing and presentation											
Presentation and correction of draft report											
Defence											
Correction and refinement											
Data collection											
Data entry and analysis											
Compilation Project											
Final submission of Report											

Appendix III: Research Budget

No	Item	Kshs.
1 .	Preliminaries	5,000.00
2.	Transport	20,000.00
3.	Assistants allowances	10,000.00
4.	Stationary	2,000.00
5.	Data entry and analysis	20,000.00
6.	Photocopying service	10,000.00
7.	Binding	5,000.00
8.	Miscellaneous	6,000.00
	Total	78,000.00