

**COLLABORATIVE PUBLIC PROCUREMENT AND
PERFORMANCE AMONG STATE CORPORATIONS IN
KENYA**

BY:

NYANGWESO WILLIAM BORAYA

**A Management Research Project submitted in partial fulfilment of the degree
of Master of Business Administration of the School of Business, University of
Nairobi.**

NOVEMBER, 2013

DECLARATION

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

NYANGWESO WILLIAM BORAYA

D61/63890/2011

Signed.....

Date.....

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

Signed.....Date.....

Signed..... Date.....

MR. P. MAGUTU
Lecturer,
Department of Management Science,
School of Business, University of Nairobi.

AKELO E. O
Lecturer,
Department of Management Science,
School of Business, University of Nairobi.

ACKNOWLEDGEMENTS

I owe my gratitude to all the people who contributed tremendously towards the completion of this Research Project. Special thanks go to my supervisors, Mr. P. Magutu and Akelo E.O for their material and moral support. They are outstanding, easy to work with lectures with whom I shared a fundamental outlook rather than differ considerably in their approach from the beginning up to the end of the project.

It is a pleasure to acknowledge my elder brother, Fredrick Nyamweya for financing the entire MBA program. In the same breadth, I appreciate the input of the rest of the Maisha Family.

Special thanks to my wife, Gladys Mumbi, for her patience, understanding and support during the whole period of my studies. I extend my gratitude to my loyal friend and colleague, Mr. John Mose for his material and moral support during the period. Special appreciation to Obat and family for their encouragement and material support in the final stages of this paper.

Lastly to God for his love that endures forever.

DEDICATION

This project is dedicated to my ailing mother, Philomena Osebe. Thank you for your prayers, love and constant encouragement throughout the time. To my little angels; Melissa, Bridget and Redemptor.

ABSTRACT

Against the backdrop of the immense challenges that have been facing state corporations since independency, the government is pushing for public procurement reforms in a bid to ameliorate their competitiveness. The study sought to establish the relationship between collaborative public procurement and performance among state corporations in Kenya. A descriptive survey was used to answer the research questions on the current status of the subject of the study and in reference to the objectives of the study. The target population of the study was all the state corporations in Kenya totaling two hundred and ten (210). A sample of 45 state corporations was taken out of this sampling frame. Questionnaires were used to collect primary data from the respondents. The data was quantitatively and qualitatively analyzed and presented as frequency and percentage tables. The study found out that state corporations have adopted various collaborative public procurement practices to enhance their competitiveness. This response has been necessitated by the dynamic nature of the now liberalized market. The study focused on the following collaborative public procurement practices: the agency's involvement in information flow along the supply chain; the agency's involvement in the exploitation of complementary skills; the agency's involvement in sharing in design process collaboratively; and the agency's endeavor to access capabilities crucial to its competitiveness. According to the study 78.9% of state corporations have adopted collaborative public procurement strategies in tandem with the government's procurement policy. The regression analysis conducted revealed that various collaborative public procurement strategies adopted by state corporations have not had a significant impact on their performance over the last five years as indicated by the low coefficient of multiple regression (0.200). This postulates that only 20% of the procurement performance of the state corporations can be attributed to the collaborative public procurement practices they have adopted. The study recommends that relevant authorities provide impetus to encourage all the state corporations to participate in collaborative public procurement to tap into the economies associated with collaborative procurement. According to the research there is need for more investments into research in challenges facing collaborative public procurement among state corporations in Kenya. The study was limited by cost and time.

TABLE OF CONTENTS

DECLARATION.....	ii
ACKNOWLEDGEMENTS	iii
DEDICATION.....	iv
ABSTRACT.....	v
TABLE OF CONTENTS	vi
LIST OF TABLES	ix
LIST OF FIGURES	x
CHAPTER ONE: INTRODUCTION	1
1.1 Background	1
1.1.1 Public Collaborative Procurement	2
1.1.2 Procurement Performance	3
1.1.3 State Corporations in Kenya	4
1.2 Statement of the Problem.....	5
1.3 Research Objectives.....	7
1.4 Value of the study	7
CHAPTER TWO: LITERATURE REVIEW	8
2.1 Introduction.....	8
2.2 Public Collaborative Procurement	8
2.3 Benefits of Collaborative Public Procurement	9
2.3.1 Increased Procurement effectiveness in the Supply chain	9
2.3.2 Increased Efficiency in the Procurement Process.....	10
2.3.3 Access to Resources in the Supply Chain	10
2.3.4 Coordination and Seamless learning along the Supply Chain.....	11
2.4 Critical Success Factors in the Implementation of Public Collaborative Procurement	11
2.4.1 Investments in Relation-Specific Assets.....	12
2.4.2 Knowledge-Sharing Routines	13

2.4.3 Complementary Resources/ Capabilities.....	13
2.4.4 Effective Governance.....	14
2.5 Procurement Performance.....	15
2.5.1 Measures of Procurement performance.....	16
2.6 Summary of Literature Review.....	17
2.6.1 Conceptual Frame work of the study.....	18
CHAPTER THREE: RESEARCH METHODOLOGY.....	20
3.1 Introduction.....	20
3.2 Research Design.....	20
3.3 Population and Sample Size.....	20
3.4 Data Collection.....	20
3.5 Data Analysis.....	21
CHAPTER FOUR: DATA ANALYSIS, FINDINGS AND DISCUSSIONS.....	22
4.1 Introduction.....	22
4.2 Demographic Information.....	22
4.2.1 The age of the state corporations.....	22
4.2.2 The Ministry/Sector under which the state corporations fall.....	23
4.2.3 Participation in Collaborative Procurement.....	24
4.3 Collaborative Public Procurement.....	25
4.3.1 Collaborative Practices.....	26
4.3.2 Benefits of Collaborative Procurement.....	31
4.3.3 Critical success Factors in the implementation of Collaborative Public Procurement.....	35
4.3.4 Procurement Performance of State Corporations.....	40
4.4 The relationship between Collaborative Public Procurement and performance.....	43
4.4.1 Establishing the link between collaborative procurement and performance.....	43
CHAPTER FIVE : SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.....	48
5.1 Introduction.....	48
5.2 Summary of the findings.....	48

5.3 Conclusion	49
5.4 Recommendations.....	50
5.5 Limitations of the study	50
5.6 Suggestions for further Research	50
REFERENCES.....	51
APPENDIX I: Letter of Introduction	53
APPENDIX – II: The Questionnaire.....	54
APPENDIX- III: State Corporations in Kenya.....	59

LIST OF TABLES

Table 4.1 The age of the state corporations	22
Table 4.2 Distribution of the state corporations	24
Table 4.3 Participation in Collaborative Procurement.....	25
Table 4.4 Collaborative practices	26
Table 4.5 Collaborative practices standard variances	28
Table 4.6 Collaborative practices - Principal Component Analysis.....	29
Table 4.7 Benefits of collaborative practices.....	31
Table 4.8 Benefits of collaborative public procurement - Component Matrix ^a	33
Table 4.9: Benefits of Collaborative procurement - Variance	34
Table 4.10 Critical success factors – Descriptive analysis	36
Table 4.11 Critical success factors - Component Matrix ^a	38
Table 4.12 Critical success factors -Total Variance	39
Table 4.13 Average Procurement Performance	41
Table 4.14 Model Summary ^b	44
Table 4.15 ANOVA ^b	44
Table 4.16 Collaborative procurement – model Coefficients ^a	45

LIST OF FIGURES

Figure 1: Conceptual model of the study	19
Figure 2 Scree plot	30
Figure 3 Average Procurement Performance.....	42

CHAPTER ONE:

INTRODUCTION

1.1 Background

The procurement function directly affects corporate competitiveness and the company's ability to innovate and develop competitive advantages. The purchasing function contributes in a significant way to company performance and competitive advantage, not only due to its capacity to reduce costs, but also as a tactical function that needs to adjust itself to changes in the market and to contribute to innovation (Albrecht et al., 2005). An efficient procurement process is essential to the success of government's programmes; it provides the link between policy and delivery. Thus, getting procurement right is a greater priority now for government than it has been in the past.

Forming collaborative procurement arrangements is an increasing trend in purchasing and supply (Carter et al., 2000; Walker et al., 2003). As the number of purchasing departments increases more information becomes available which help reduce uncertainty. Thus the degree of lateral involvement in purchasing increases, as the purchase process becomes less uncertain and risky (Dawes et al., 1992). Firms working together in a supply chain pool their talents, skills, and resources to achieve higher levels of market and financial performance than possible without such unity in their actions (Kim et al., 2006; Wu et al., 2006).

Lack of collaborative supply chains and mechanisms for supply chain performance improvement has been the main obstacle in public procurement in Kenya and the developing world at large. One of the ways in which governments try to reduce system inefficiencies is by stimulating and/or enforcing more collaborative public procurement. This means that many public organizations are increasingly encouraged to pool or share purchasing volumes, information, and/ or resources (Schotanus et al., 2011). In this context collaborative and integrated supply chain practices in public procurement has provided the main avenue for procurement reforms over the last two decades. This explains the emergence of a new organizational structure for public procurement; that of procurement as a shared service.

1.1.1 Public Collaborative Procurement

According to Weele (2010), procurement is the acquisition of goods or services. It entails the steps that are used in the acquisition of goods and services and it is the most significant aspect characterizing an organization's supply chain as well as the aspect of supply chain management which provides some of the most value-added benefits to the organization. Collaborative public procurement is about achieving value for money for the public sector through partnership working between buying organisations, Centres of Expertise (CoEs) and suppliers. Collaborative procurement draws on expertise across the public sector to leverage volumes and secure benefits from economies of scale through harnessing combined sector purchasing power (Scottish Government, 2013).

Dyer and Singh (1998) adopts a relational perspective which assumes that the sources of competitive advantage may span firm boundaries, just as interdisciplinary and cross-functional strengths lead to a competitive advantage within the firm. They further argue that inter-firm networks may be more efficient arrangements for achieving a resource-based advantage than single firms. In public collaborative procurement, the concept of competitive advantage is substituted with that of relational rent. The concept of relational rent is defined as an advantage generated collaboratively in an exchange relationship that cannot be generated by either organization in isolation and can be created only through the joint idiosyncratic contributions of the specific collaborating organizations (Walker et al., 2013).

According to Dyer and Singh (1998), Critical Success Factors (enablers) in the implementation of collaborative public procurement include: Investments in relation-specific assets; Substantial knowledge exchange including exchange that results in joint learning; Combining complementary but scarce resources or capabilities, which results in the joint creation of unique new products, services, and/or technologies; and Effective governance mechanisms resulting in lower transaction Costs. Walker et al., (2013) argue that organizations may benefit more by collaboration than by acting alone because of economies of scale, process, and/or information. Collaboration may reduce waste in the procurement system, achieve better outcomes for taxpayers, and, hence, improve the overall socioeconomic position. Specific benefits of

Collaborative public procurement include: increased efficiency (Parker and Hartley, 1997); access to resources (Al-Kahlifa et.al, 1999) and coordination and seamless learning (Greer, 2002).

Two primary motives for collaboration have been recognized: the improvement of effectiveness and efficiency (Jost et al., 2005). For the first, collaboration is sought when single organizations do not have the knowledge, resources or capabilities. The second is about realizing economies of scale, reduced transaction costs, better development of products/services, or accessing markets and/or technologies, etc (Leenders and Fearon , 1997; Johnson, 1999).

1.1.2 Procurement Performance

Procurement performance involves measuring and evaluating: quality, effectiveness, and efficiency by using output and outcome indicators. Purchasing performance can be considered as the extent to which the purchasing function is able to realize its predetermined goals at the sacrifice of a minimum of the organization's resources. Hence, the four dimensions which measurement and evaluation of purchasing activities can be based on are: a price/cost dimension; a product/quality dimension; a logistics dimension and an organization dimension (Cavinato and Kauffman, 1999).

In order for an organization to achieve its goals to satisfy its customers, the two most fundamental dimensions of performance are efficiency and effectiveness. According to them, efficiency measures how successfully the inputs have been transformed into outputs while, effectiveness measures how successfully the system achieves its desired output (Kotter, 1978).

Measurement areas of purchasing Efficiency include: Purchasing organization structure e.g. personnel, management, procedures and policies and information system. In order to measure procurement performance, three main considerations are proposed: representation of the supply link; efficiency of the supply link and effectiveness of the supply link. The representation of the supply link is described in terms of its environment and structure, and what activities and flows take place in the supply link. Finally, generic performance indicators of the supply link in terms

of time, quality, flexibility and cost are used to measure efficiency and effectiveness. The efficiency in the supply link explains how well the resources are utilized. The effectiveness of the supply link explains how well the objectives are achieved (Kumar et al., 2005).

1.1.3 State Corporations in Kenya

A State Corporation is a legal entity created by the government to undertake commercial activities on its behalf. In Kenya there are two hundred and ten state corporations which fall under established ministries in which they work collaboratively to achieve the overall goals of the respective ministries. The volume of public procurement was established at 3.64 billion USD which was approximately 9% of the GDP (Independent Procurement Review Kenya, May 2005). Procurement in the state corporations is governed by the Public Procurement and Disposal Act 2005 and the Public Procurement and Disposal Regulations 2006 which facilitates the standardization of procurement practices across all procuring entities in Kenya (Public Procurement and Disposal General Manual, 2009).

The Public Procurement Oversight Authority (PPOA) is charged with the responsibility of oversight and regulation of public procurement. According to Erridge and Greer (2002), pursuit of regulatory goals is directed towards ensuring that procurement activities and contracts meet the requirements of propriety and transparency thus encouraging a risk avoidance culture in respect of transparency. Procurement in Kenya's State corporations has been dogged by; corruption, political patronage, procurement system inefficiency, lack of sound procurement policy guidelines and lack of a genuinely open and competitive system of procurement amongst other shortcomings.

Collaborative public procurement among state corporations may encounter significant barriers. Two categories of organizational integration barriers: specialization barriers; and political barriers. Specialization may be a barrier due to different perspectives concerning goals or frame of reference differences among organizational units, and political barriers can create conflicts

and power misaligned goals and objectives, poor information systems, short-term as opposed to long-term focus, and supply chain complexity issues (Barki and Pinsonneault, 2005).

A collaborative approach in public procurement will address the following key issues: promotion of sound public finance management in general and sound procurement practice in particular; promotion of transparency and accountability and the reduction of corruption incidences in public procurement practices; encourage the embracing of planning in public procurement and budgeting; selection of the correct method of procurement and adherence to the prerequisite control procedures (Public Procurement and Disposal General Manual,2009).

1.2 Statement of the Problem

The focus of the collaborative public procurement reforms in tandem with project management practice has traditionally been to identify and search for new and better methods for fulfilling two primary objectives: to meet specified performance within cost and on time (Meredith and Mantel, 2002) and achieve one contentious objective of eradicating corruption in procurement process (Mawenya, 2008).

State corporations play a critical role in service delivery. They are both service and commercial agencies through which the government delivers certain services and generate revenues. Cost effectiveness through public procurement is important in this endeavor and their operations. The Public Procurement and Disposal Act, 2005 is a new phenomenon hence the need to check on how collaborative procurement can be used to improve the agencies 'procurement performance.

A number of studies have been carried out on collaborative public procurement. Murray and Geere (2008), in their study found out that; procurement as a shared service is an additional structural option for public procurement. They further argue that procurement as a shared service has the potential to maximize the benefits of both the intra-organizational hard core/soft core model and inter- organizational consortia participation. Their study however, falls short of establishing the link between collaborative public procurement and performance hence the current study.

Schotanus et al. (2011) in their study found out that many public organizations are increasingly encouraged to pool or share purchasing volumes, information, and/ or resources. However, while there is a policy imperative for collaborative Procurement, public organizations often experience difficulties in forging and sustaining inter-organizational relationships in the form of purchasing collaborations. While they appreciate the presence of barriers to collaborative procurement, they fail to establish any solutions to overcoming the barriers. By establishing the impact of collaborative public procurement, this study will provide a vital approach to eradicating barriers to procurement integration hence procurement performance.

Simiyu (2011) in his study found out that lack of inbuilt incentive mechanisms for procurement officials has increased the divergence between the interests of procurement officials (as agents of government) and the goals of the government (the principal). The study therefore does not offer any option to mitigate the said problem. The current studies postulate the option of collaborative public procurement as a remedy to narrowing the gap between the goals of government and procuring entities and ultimately enhance procurement performance.

Hassan (2012) found out that while state corporations have put significant efforts in implementing public procurement reforms, they are unable to address the issue of risk management in the procurement process. His study thus fails to explore ways of managing risk in the public procurement process. This study will use risk management as an indicator in collaborative public procurement while testing its effects on procurement performance.

While past studies have unraveled the impact of sound public procurement policy, most of them have not exhaustively investigated the impact of collaborative public procurement on public procurement performance improvement. It is against this backdrop that this study set to establish the link between collaborative public procurement and performance among state corporations in Kenya.

The study sought to answer the following questions: What are the benefits of using public collaborative procurement among state corporations in Kenya?; What are the critical success factors in the implementation of public collaborative procurement in state corporations in Kenya?; What is the relationship between collaborative public procurement and performance among state corporations in Kenya?

1.3 Research Objectives

The objectives of the study were;

1. To determine the benefits of Collaborative public procurement among state corporations in Kenya.
2. To determine the critical success factors in the implementation of collaborative public procurement among state corporations in Kenya; and
3. To establish the relationship between collaborative public procurement and performance among state corporations in Kenya

1.4 Value of the study

The findings of the study will be of importance to policy makers and stakeholders in the public procurement supply chain in Kenya. By establishing the relationship between collaborative public procurement and performance, the findings of the study will be a key ingredient in the; planning, designing and implementation of a sound public procurement system that will align itself to the overall economic strategy.

The study addressed output indicators that can be used in measuring and evaluating the quality, efficiency, and effectiveness of the award and administration activities of a procuring entity both in public or private. In this context it will equally benefit private enterprises that are interested in building sound procurement practices. The study will fill the existing literature gap on the impact of collaborative public procurement on performance among state corporations in Kenya. Thus the findings of the study will be beneficial to future researchers.

CHAPTER TWO:

LITERATURE REVIEW

2.1 Introduction

This chapter reviews theoretical and empirical literature from past studies on the subject of collaborative public procurement. The chapter focuses on the following issues: collaborative public procurement; benefits of collaborative public procurement; critical success factors in the implementation of collaborative public procurement and procurement performance.

2.2 Public Collaborative Procurement

McClellan (2003) refers to supply chain collaboration as a win-win arrangement that is likely to provide improved business success for both parties. It may even be considered a pre-requisite for future competitive performance. Through the governance of integration, the supply chain becomes a network where a series of relationships form to ensure that the end customer receives value from efficient and effective processes that deliver the best products and service to market (Fawcett and Magnan, 2004).

The objective of integration is to achieve operational efficiencies and strategic effectiveness in the supply chain through collaboration. Achieving this objective requires purposeful commitment and coordination with another firm's functional areas and processes (Stank et al., 2001). In other words, external interdependencies must be realized while, at the same time, firms strive to protect internal self-interest.

Supply chain collaboration involves integrating cross-functional business processes within a firm, as well as integrating processes among key members of the supply chain (Lambert et al., 2005). Selenandand Soliman (2002); and Langabeer (2001), argue that Procurement collaboration is considered an essential part of demand chain management. Supply chain collaboration calls for an extension of the view of operations from a single business unit or a company to the whole chain (Vollmann et al., 2000). Thus from this perspective, supply chain collaboration involves

integrating the real demand or customer perspective into supply chain thinking and requires a more holistic approach.

2.3 Benefits of Collaborative Public Procurement

According to Jost et al. (2005), there are two main advantages to collaboration. The first is increased effectiveness through learning from each other and a better use of resources. As purchasing is evolving into a more strategic function (Reck and Long, 1988) and demands more strategic skills, collaboration can be a way of accessing these skills or freeing up resources to develop them. The second main advantage is an improved efficiency through reduction of transaction costs and increased economies of scale through bundling of purchasing volumes (Leenders and Fearon, 1997; Johnson, 1999).

2.3.1 Increased Procurement effectiveness in the Supply chain

Effectiveness measures how successfully the system achieves its desired output. Effectiveness can be achieved through learning from each other and sharing of skills which leads to rational use of resources. Macbeth and Ferguson (1994) empirically examined partnering by associating with a number of collaborative activities such as shared design processes, open book costing, interchange of staff and involvement in joint improvement projects. Cannon and Perrault (1999) provide a descriptive categorization of such collaborative activities, including information exchange on products and processes, the creation of operational linkages, the development of cooperative norms through trust-building events, and investments in relationship-specific adaptations to products and processes.

Bounded rationality is rational decision making by buyers and sellers, but under conditions of uncertainty and therefore imperfect or asymmetric information. Opportunism is the incomplete or distorted disclosure of information and self-interest seeking with guile (Williamson1983). A combination of bounded rationality, uncertainty, and opportunism can result in a situation in which one party has more complete information than their opposite number about the nature of an exchange and is able to exploit that information advantage to earn a greater share of the gains

from trade. Collaboration is deemed to be the most cost efficient solution in these circumstances. It gives the buyer access to the economies of scale and scope associated with external supplier selection, but not available under hierarchy (Williamson 1985).

2.3.2 Increased Efficiency in the Procurement Process

Efficiency measures how successfully the inputs have been transformed into outputs. According to the empirical findings of Parker and Hartley (1997), the concept of surplus value, is synonymous with the notion of welfare gains from trade. In an arm's length relationship the available surplus value is fixed, but in a collaborative arrangement there is an expectation that the surplus will increase, either through a reduction in the supplier's costs or an increase in the buyer's utility function.

Discussions of the benefits of partnering are often framed in terms of transaction cost reasoning. Powell (1990); Williamson and Winters (1993) asserts that, partnering provides the best means of economizing on transaction costs. Sharing tasks in the form of lead-buying or sharing resources in the form of shared services can be chosen when uncertainty is low (dealing with standard products), frequency of demand is high and benefits are unclear. Setting up a separate organization would be inappropriate due to costs. Maloni and Benton, 2000; Richey et al. (2007) empirically found that: Collaborative planning, reduced inventories, lower distribution and transportation costs, improved cycle times, and customer service levels, are positive outcomes of properly governed relational integration.

2.3.3 Access to Resources in the Supply Chain

Forging external collaborations becomes a viable strategy to compete in a dynamic global environment (Al-Khalifa and Peterson, 1999; Morgan and Hunt, 1994; Simonin and Ruth, 1998) as it can increase a firm's capability-based efficiency through resource pooling, exploitation of complementary skills, and information sharing.

Previous empirical research shows that external integration has positive impact on supply chain performance. Kraljic (1983) argues from a Resource based view of the firm perspective.

According to him, third parties can be used for routine and leverage items. In this case a third party can be used when at a local level skills and capabilities do not need to be developed for that specific category of products or services.

(Walker and Weber, 1984; Parker and Hartley, 2003) suggests that organizations make sourcing decisions both on the basis of their capability endowments and needs and on transaction cost and scale considerations. Foss and Robertson (2000) concur by introducing the notion of capabilities, drawn from the resource-based view of strategy. According to them, partnering can be driven as much by a desire to gain privileged access to capabilities crucial to organizational performance or competitiveness as by a concern to economize on transaction costs.

2.3.4 Coordination and Seamless learning along the Supply Chain

Collaborative procurement facilitates the development of reputation and trust, which allow a more effective flow of information between buyer and supplier and act as a form of social capital (Sako, 1992; Erridge and Greer, 2002). Coordination and seamless learning leads to faster and better targeted product innovation driven by more effective learning and more extensive knowledge sharing at the design stage (Boddy et al., 1998; Dyer and Nobeoka, 2000; Bessant, 2004). Coordination equally leads to enhanced flexibility and responsiveness to changes in customer demand through a reduction in production and distribution lead times (Towill, 1996; Mason-Jones and Towill, 1999; Christopher, 2000).

2.4 Critical Success Factors in the Implementation of Public Collaborative Procurement

According to Dyer and Singh (1998), Critical Success Factors (enablers) in the implementation of collaborative public procurement include: Investments in relation-specific assets; Substantial knowledge exchange including exchange that results in joint learning; Combining complementary but scarce resources or capabilities, which results in the joint creation of unique

new products, services, and/or technologies; and Effective governance mechanisms resulting in lower transaction Costs.

The facilitators of integration embody governance mechanisms that allow partners to communicate operational and strategic needs in order to ensure consistent supply chain efficiency while satisfying customers' needs at a high level. Empirical findings by Frazier, (1999); and Heide, (1994) postulate Facilitators of Integration as having five organizational Dimensions: Aligned; Communicative; Structured; Quantified; and Interdependent

2.4.1 Investments in Relation-Specific Assets

Effective collaboration requires a high degree of commitment and trust between members (Doucette, 1997; Schotanus et al., 2010). At the organizational level, trust refers to the extent to which organizational members have a collectively held trust orientation towards the partner firm (Zaheer et al., 1998). This construct is regarded as more important than the other forms of trust (e.g. interpersonal trust) as a salient factor for the success of supply chain relationships.

In inter-firm exchanges, trust creates an environment where firms strive to exceed the minimum requirements of a relationship to increase the likelihood of mutual benefits (Panayides and Lun, 2009).

Being Interdependent is normally referred to as having a degree of influence on the other partner firm's attitudes and behavior (Frazier, 1999; Heide, 1994). Researchers in strategy and inter-organizational relationships have provided extensive study of interdependence as a way of fostering and maintaining relationships (Anderson and Narus, 1990; O'Donnell, 2000).

Interdependent strategy and processes make activities more efficient and effective and spread risks across firms. Here the goal is to create a win-win relationship. Indicators of being interdependent suggest the importance of the implementation of cross functional processes, the spending of resources to train employees regarding supply chain practices, the development of

cross-functional teams, and the inclusion of software to formalize interdependence. The inclusion of these issues may assist in increasing the strength of the firms' interdependence, and thus foster better relational integration (Golicic and Mentzer, 2005).

2.4.2 Knowledge-Sharing Routines

Cooperation and communication is critical in collaborative procurement. This approach leads to better understanding through collective learning (Tella and Virolainen, 2005; Schotanus et al., and Boer, 2010). Being Communicative represents the degree to which the organizations expect and engage in information sharing. A communicative approach strongly supports inter-firm relationships in supply chains and the growth of technological tools has increased the importance of being communicative (Jap and Mohr, 2002).

Effective communication fosters the flow of information between channel partners and counteracts the potential negative impacts of information safeguarding. For information to be communicated effectively across business partners, firms must formally recognize the importance of sharing technical expertise with customers and suppliers. This expertise represents a capability that can be transferred across firms, forming a transaction-specific resource investment that helps foster a relational governance bond (Barney, 1991; Olavarrieta and Ellinger, 1997). At a structural level, information exchange is embedded in standardized systems geared towards process integration. Ultimately, Proactive collaboration is achieved through joint planning and synchronization of business processes (Jagdev and Thoben, 2001).

2.4.3 Complementary Resources/ Capabilities

Organizations involved in collaborative procurement need to acquire and maintain appropriate resources like; training, IT, etc. (Erridge and Greer, 2002). Another key undertaking is the sharing of Complementary expertise, skills, and resources. In addition the members should establish standardized procedures and processes while encouraging joint selection of goods and services (Erridge and Greer, 2002; Essig, 2000).

Structured is examined in Transaction Cost Economics as an attempt to create a firm-specific linkage with the hope of buying market based capabilities (Williamson, 1981). Formation of relationships foster resource and process complementarity (Mouritsen and Thrane, 2006). In a supply chain perspective, firms must find ways to share risks and rewards, develop strategies to reduce the costs of interactivity, and develop normative guidelines for managing and selecting their partners (Mentzer et al., 2001; Sha and Che, 2006).

2.4.4 Effective Governance

Effective governance calls for top management support from each of the stakeholders. The members must also operate on agreed goals and performance measures while implementing appropriate structures to foster collaboration (Nollet and Beaulieu, 2003; Telgen and Boer, 2010). Thus, the members need to be aligned. Being aligned refers to the development and governance of roles and responsibilities across supply chain members (Simatupang and Sridharan, 2005). Alignments manifest in strategic initiatives like co-managed inventory and vendor managed inventory (VMI) (Holmstrom, 1998; Lee et al., 1997). In a strategic sense, alignment includes the development of goals directing co-performance evaluation, process improvement, and incentive sharing (Simatupang and Sridharan, 2005).

Such initiatives require a clear mission statement, common goals among supply chain members, and common operating procedures among supply chain members. The importance of being aligned is evident in the growth of collaborative planning systems or specifically, Collaborative Planning for Forecasting and Replenishment (CPFR). Being aligned is essential to relational collaboration as it creates system interconnectivity that fosters cohesion between the supply chain members (Piplani and Fu, 2005).

Quantified is referred to as expressing a numerical amount for a given task or process (Massy and Frank, 1965; Metters, 1997). Metrics related to this quantifying dimension are associated with the adoption of consistent performance measures, as well as the involvement of cross channel teams in moving from internal to supply chain perspectives (Lambert and Pohlen, 2001).

Swink, 2004). Halal (1977) suggests that Quantified outcomes let partner firms know where they stand, helps foster responsibility, and make it easier to assign equitable rewards across the extended enterprise. Lusch and Brown (1996) concur with the above notion by arguing that being quantified can help foster the governance of integration.

2.5 Procurement Performance

Kotter, (1978); Neely, (1999) argues that, in order for an organization to achieve its goals to satisfy its customer, the two most fundamental dimensions of performance are efficiency and effectiveness. Efficiency measures how successfully the inputs have been transformed into outputs while, Effectiveness measures how successfully the system achieves its desired output. According to Van Weele (2000) and Knudsen (1999), the performance measurement system must span the same part of the supply chain that the purchasing department has control over. This part of the supply chain, spanning from suppliers to internal customers, is labeled the supply link. The supply link consists of three main actors: Suppliers, the purchasing department and the internal customer / users.

Van Weele (2000) and Knudsen (1999) categorize purchasing measurement areas into two: those that are derived from purchasing effectiveness; and purchasing efficiency. Measurement areas of purchasing Effectiveness include: Purchasing material cost/prices e.g. material price/cost; Quality measures e.g. purchasing pre-design involvement and purchasing post-design measures; Purchasing Logistics measures e.g. adequate requisitioning, order inventory policy, and supplier delivery reliability.

Measurement areas of purchasing Efficiency include: Purchasing organization structure e.g. personnel, management, procedures and policies and information system. In order to measure procurement performance, three main considerations are proposed: representation of the supply link; efficiency of the supply link and effectiveness of the supply link. The representation of the supply link is described in terms of its environment and structure, and what activities and flows take place in the supply link. Finally, generic performance indicators of the supply link in terms

of time, quality, flexibility and cost are used to measure efficiency and effectiveness. The efficiency in the supply link explains how well the resources are utilized. The effectiveness of the supply link explains how well the objectives are achieved (Kumar et al., 2005).

2.5.1 Measures of Procurement performance

Kumal et al., (2005) combines the three components in the supply link collectively with the resources, procedures and output, to develop a procurement performance measurement model. The Components of measurement model include: Generic measures like: - the measurements of resources utilization (efficiency) and the degree of fulfilled objectives (effectiveness) are carried out in areas like time, quality, costs and flexibility; Environment & structure: - which has to do with the description of internal customer, suppliers and the purchasing department; and Procedures: - Which measures activities and objective flows of processes. Objectives must be closely aligned with the strategies of the organizations.

This model allows a study of the interactions among the measures and ensures that a minimum level of performance is achieved in the different areas. The measurement dimensions can be divided into: a description of the structure of the individual components in the supply link; a description of the guidelines to collect the data and the activities and flow of the purchasing department; and a measurement part comprising the generic measures to measure the varying dimensions of the procedures and their output. The relationships between the individual components of the supply links are also taken into consideration through measurement of the purchasing process and activities.

Kumar et al. (2005) proposes an expanded balanced scorecard model in establishing a set of the specific generic measures. The Proposed balanced scorecard has six perspectives including: customer; supplier; Process; IT system; learning & growth; and Overall. In the Customer perspective the outcome includes: Percentage of line items on back order to total line items (Average number of items on backorder/total number of line items); Cost per order per customer; and effectiveness of ordering time (Total expenditure of the department/Total IRF received);

Effectiveness of ordering time (Actual average cycle time/targeted average cycle time).The outcomes in Supplier perspective Include: Quality of delivery (Number of reject or early or late shipments/Total number of items delivered); Cost per order to suppliers (total expenditure of the department/ Total number of purchases); Effectiveness of delivery time (Actual average cycle time/Targeted cycle time); supplier evaluation (Number of supplier evaluations that meet objectives/ Total number of evaluations).

In the Process perspective the outcomes include: Solvability rate (No. of cases solved within 60 days/No. of cases reported); Stock take discrepancy (Total variance / total stock value); Supply chain costs (Total expenditure of department / Total purchase value); Effectiveness of process time (Actual average of cycle time / Targeted average cycle time); GPO participation rate (No. of items under GPO/Total No. of items); requisition completion rate (No. of IRFs completed/ No. of IRFs received). Outcomes in the IT perspective include: Efficiency of IT system (No. of IRFs / No of employees handling the system); Effectiveness of the IT system (Total number of projects, policies or procedures / no. of hours in operation).In the Learning and growth Perspective the outcomes include: Training utilization rate (No. of places utilized / Number of planned training); employee engagement index (No. of participants in the engagement survey/ Total No. of employees in the department).Outcomes in the overall perspective include: Effectiveness of the department (Total expenditure of the department/ Total budget of the department).

2.6 Summary of Literature Review

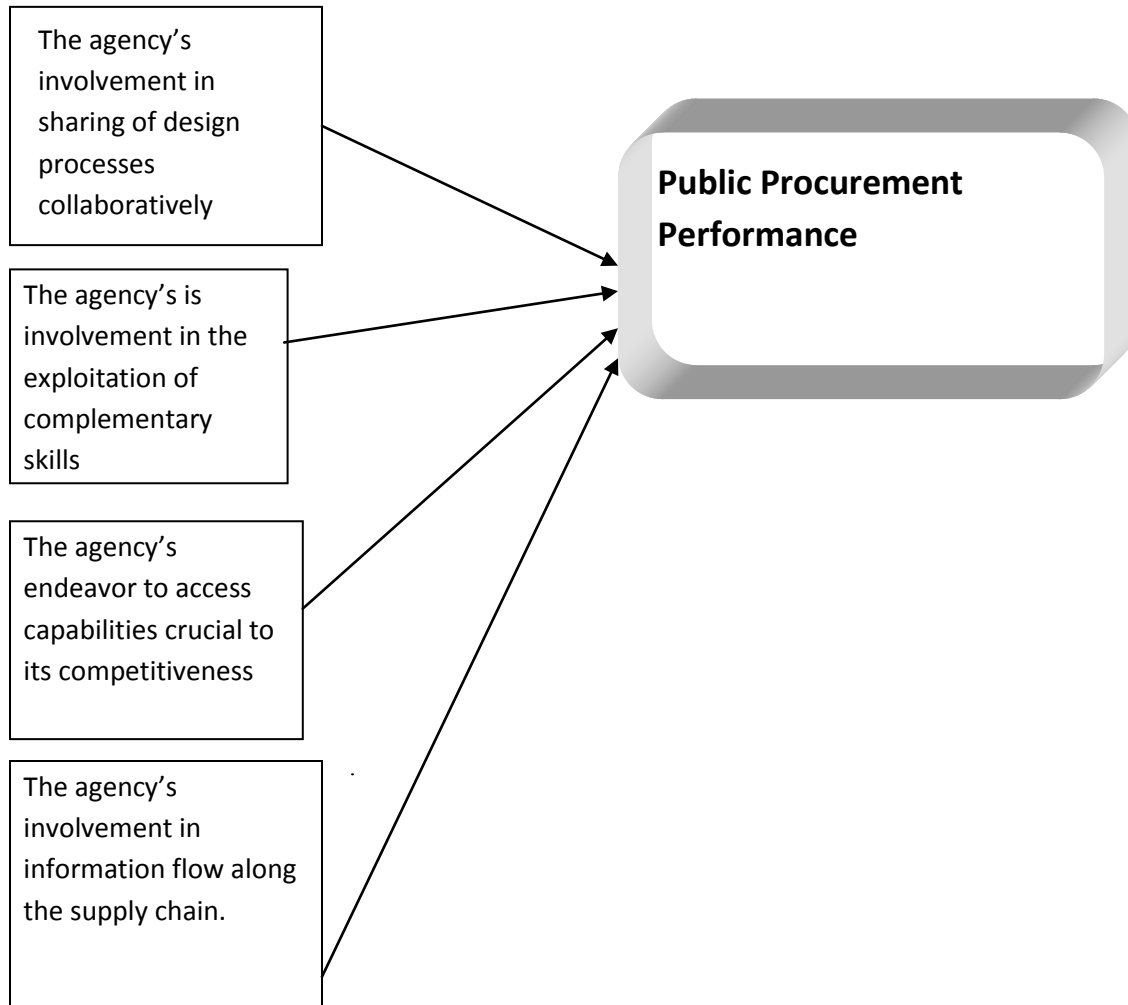
The ensuing research is based on a summary of the literature thus presented. Much of the review considers empirical works published in academic journals from 1990 to 2013. The review started by looking at the theoretical perspective of Collaborative Public Procurement and the benefits of Collaborative public procurement based on past empirical studies. It then presented divergent Critical Success Factors in the implementation of Collaborative public procurement and finally provided an overview of the empirical findings on the impact of collaborative public procurement on performance.

Empirical outcomes of past studies support the idea that public organizations can enhance their procurement performance through collaborative procurement under the governance of facilitators to integration, in spite of the realization that barriers to integration also exist. Most of the studies have however not exhaustively investigated the relationship between Collaborative public procurement and performance. The study therefore aimed at filling this literature gap by establishing the link between collaborative public procurement and performance among state corporations in Kenya.

2.6.1 Conceptual Frame work of the study

The figure below is a conceptual framework showing the relationship between independent variables and the dependent variable. The independent variables in the model included the following collaborative public procurement practices: The agency's involvement in sharing of design process collaboratively; the agency's involvement in the exploitation of complementary skills; the agency's endeavor to access capabilities crucial to its competitiveness; and the agency's involvement in information flow along the supply chain. The dependent variable was procurement performance. The conceptual model of the study is shown in Figure 1.0 below

Figure 1: Conceptual model of the study



Source: Researcher (2013)

CHAPTER THREE:

RESEARCH METHODOLOGY

3.1 Introduction

This chapter introduces the logical framework followed in the process of conducting the study. It is divided into: research design, population and sample, data collection and data analysis.

3.2 Research Design

The study adopted a descriptive survey design. A descriptive survey enabled the researcher to obtain large amounts of data from a sizable population in a highly effective, easy and in an economical way using questionnaires. In addition, a descriptive survey enabled the researcher obtain quantitative data which he can analyse using descriptive and inferential statistics (Saunders et al., 2002).

3.3 Population and Sample Size

The target population included all the state corporations in Kenya. There are 210 state corporations in Kenya out of which a purposive sample of 18% was be taken for the study based on time and cost considerations. Thus out of the 210 state corporations, a sample of 45 corporations was taken for the study. According to Mugenda and Mugenda (2003), a representative sample is one which is at least 10% of the population thus the choice of 21.4% is considered as representative. The respondents in the study were the procurement managers of the state corporations.

3.4 Data Collection

Primary data was used in this study. The primary data was collected using a semi-structured questionnaire subdivided into two parts. Part 1 consisted of open-ended questions aimed at obtaining general information on the corporation while Part 2 consisted of questions aimed at obtaining data on procurement performance.

3.5 Data Analysis

Descriptive statistics was used to describe (and analyse) the variables numerically. These included: simple means; standard deviations regression and correlation analysis by use of SPSS version 22 while factor analysis was applied to check on the categorization of the collaborative practices in state corporations. A multivariate regression model was used to analyse the relationship between collaborative public procurement and performance.

The multiple regression model was computed as follows;

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$$

Where;

Y = Procurement Performance

β_0 = Constant

$\beta_1, \beta_2, \beta_3, \beta_4$ = Coefficients of determination

X_1 = Sharing in the design process collaboratively

X_2 = Involvement in exploitation of complementary skills

X_3 = Endeavor to Access capabilities crucial to competitiveness

X_4 = Involvement in information flow along the supply chain

ε = Random error

CHAPTER FOUR:

DATA ANALYSIS, FINDINGS AND DISCUSSIONS

4.1 Introduction

Data on the collaborative procurement practices adopted by state corporations in Kenya in their quest to enhance performance was analysed. The demographic data was examined using descriptive statistics and summarized in various frequency tables. With the help of SPSS statistical software, data on the collaborative public procurement practices adopted and their impact on the performance of the respective state corporations was analysed using; mean scores, standard deviations, coefficients of variation and regression analysis. The factors were ranked in order of importance, the correlation between them yielded the key factors that loaded most on the components and therefore had the greatest impact on procurement performance. Forty-five (45) questionnaires were administered to the selected commercial state corporations in Nairobi. Thirty eight (38) of these questionnaires were returned representing a response rate of 84.4 per cent. The analysis, findings, and discussion are presented below.

4.2 Demographic Information

The demographic characteristics of the respondents that were tested include age and sector under which the state corporations fall and whether the respective corporations have participated in collaborative public procurement.

4.2.1 The age of the state corporations

The number of years an organization has been operating determines its readiness to participate collaborative public procurement. The study sought to determine the number of years that the various commercial state corporations have been in existence, the results are shown in Table 4.1

Table 4.1 The age of the state corporations

Age	Frequency	Percentage
Less than 10 years	3	9.375
11 - 20 years	5	15.625
21 - 30 years	11	34.375
31 - 40 years	7	21.875
over 50 years	6	18.75
Total	32	100

Source: Author (2013)

It is shown in Table 4.1 that over 80% of state corporations in Kenya have been in existence for over 10 years with only 9.4 % being in existence for less than ten years. This implies that most of the state corporations that participate in collaborative public procurement have enough experience in collaborative public procurement and other related issues under study. This is in support of Hassan (2012) who conducted a study on public procurement practices among state corporations. He found out that there exists a near perfect positive correlation between the age of state corporations and their tendency to adopt competitive strategies including collaborative procurement.

4.2.2 The Ministry/Sector under which the state corporations fall

The distribution of state corporations in Kenya has been traditionally influenced by the economic potential of the various sectors of the economy. Thus different sectors contribute to the National gross domestic product proportionate to their economic potential. The study sought to determine the spread of state corporations across the sectors in Kenya. The respondents were required to indicate the economic sector under which their corporations fall. The results are shown in Table 4.2.

Table 4.2 Distribution of the state corporations

Sector	Frequency	Percentage
Building & construction	2	6.25
Financial sector	2	6.25
Energy/mining	3	9.375
Education	3	9.375
Health sector	4	12.5
Telecommunication	8	25
Agriculture	10	31.25
Total	22	100

Source: Author (2013)

The findings in Table 4.2 show that most state corporations in Kenya fall in the agricultural sector with 31.25% while the least number of state corporations fall under financial, energy and mining sector. This is attributed to the fact that agriculture is the main economic activity in Kenya. These findings concur with Maweya (2008) while investigating the impact of corruption on public procurement in sub-Saharan Africa.

4.2.3 Participation in Collaborative Procurement

The impact of procurement policy depends on the extent to which the respective strategies are adopted by key stakeholders in the economy. The current public procurement reforms calls for all state corporations to partake in collaborative public procurement.

The study sought to determine the number of state corporations that have participated in collaborative public procurement in tandem with this clarion call. The results are shown in Table 4.3.

Table 4.3 Participation in Collaborative Procurement

Participation level	Frequency	Percentage
Corporation has not participated in Collaborative Public Procurement	8	21.1
Corporation has participated in Collaborative Public Procurement	30	78.9
Total	38.0	100.0

Source: Author (2013)

The results in Table 4.3 indicate that 78.9% of state corporations in Kenya participate in collaborative public procurement. This is tandem with the government's quest to reform public procurement to enhance the performance of state corporations in Kenya. However, the fact that 21.1% of state corporations have not participated in collaborative public procurement raises an alarm as this contravenes the government's public procurement policy as enshrined in the Public Procurement and Disposal Act of 2005. These findings are in line with Simiyu (2011) who found that state corporations lack inbuilt mechanisms for procurement thus reinstating the need for collaborative public procurement practices.

4.3 Collaborative Public Procurement

Collaborative public procurement is a relatively new approach in public supply chain management. Unlike the classical functional approach, collaborative public procurement is process oriented. The study sought to determine; the benefits of collaborative public procurement, the critical success factor the implementation of collaborative public procurement, and to establish the relationship between collaborative public procurement and performance among state corporations in Kenya.

4.3.1 Collaborative Practices

The effectiveness of collaborative procurement policy lies in the implementation of specific collaborative practices in the context of a given policy. The study sought to determine the various collaborative procurement activities undertaken by the state corporations. In the initial step, a correlation matrix was generated to identify any significant relation between the items. Descriptive statistics were used to determine the variance of the collaborative procurement practices as shown in Table 4.4 below.

Table 4.4 Collaborative practices

	Mean	Std. Deviation	Analysis N
The agency shares in design process collaboratively	4.158	1.1514	38
The agency shares open book costing	3.105	1.1807	38
The Agency interchanges staff in joint projects	3.895	1.4292	38
The agency is involved in joint projects	3.763	1.6995	38
The agency is involved in collaborative planning	4.026	1.5332	38
The agency is involved in seamless sharing of information	2.921	1.4023	38
The agency is involved in Shared tasks in Lead - buying	2.526	1.6723	38
The agency is involved in sharing of resources in form of shared services	4.211	1.1427	38
The agency is committed to improved cycle times	3.105	1.5385	38
The agency is involved in activities leading to low transport and distribution costs	4.184	1.2489	38
The agency is involved in exploitation of complementary skills	3.921	1.4023	38
The agency is involved in resource pooling	4.421	1.0035	38
The agency is involved in third party sourcing to economize on costs	3.605	1.6030	38
The agency endeavors to access capabilities crucial to its competitiveness	4.184	1.2704	38
The agency is involved in information flow along the supply chain	3.974	1.3653	38
The agency is involved in knowledge sharing in the design stage	4.342	1.0469	38
The agency is involved in enhancing flexibility & responsiveness to changes in customer demand	4.289	1.2282	38

Source: Researcher (2013)

The findings in Table 4.4 above indicate that over 50% state corporations have adopted collaborative practices to a large extent with eight of them having a mean of over 4.00. The agency's involvement in knowledge sharing in the design stage has the highest mean of 4.342 meaning that most corporations have adopted this practice to a large extent. The agency's involvement in Shared tasks in Lead – buying is adopted to low extent with a mean value of 2.526. The findings above support the fact that many state corporations are now responding to the current public procurement policy that calls for collaborative procurement strategies to make public procurement more competitive. The findings concur with Simiyu (2011) who found that state corporations are gradually adopting procurement to enhance their performance.

Before factor extraction, there were seventeen eigenvectors which corresponded to the number of factors. Four principal components were extracted for Collaborative public procurement practices Observation indicated that the four decision factors accounted for 97.755% of the total variation as illustrated in Table 4.5 below.

Table 4.5 Collaborative practices standard variances

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	14.732	86.662	86.662	14.732	86.662	86.662	7.907	46.514	46.514
2	1.254	7.374	94.036	1.254	7.374	94.036	5.136	30.214	76.728
3	.403	2.373	96.409	.403	2.373	96.409	2.907	17.102	93.830
4	.229	1.347	97.755	.229	1.347	97.755	.667	3.925	97.755
5	.100	.586	98.342						
6	.062	.363	98.704						
7	.050	.292	98.997						
8	.044	.262	99.258						
9	.032	.189	99.448						
10	.027	.158	99.606						
11	.019	.114	99.720						
12	.016	.094	99.815						
13	.011	.064	99.879						
14	.009	.055	99.934						
15	.005	.028	99.962						
16	.004	.023	99.985						
17	.003	.015	100.000						

Extraction Method: Principal Component Analysis.

Source: Researcher (2013)

The results in Table 4.5 above indicate that, four collaborative practices account for 97.755 of the total standard variances.

Table 4.6 Collaborative practices - Principal Component Analysis

Collaborative practice	Component			
	1	2	3	4
The agency is involved in information flow along the supply chain	.976	-.082	-.057	-.152
The agency is involved in exploitation of complementary skills	.970	-.066	-.099	-.174
The agency shares in design process collaboratively	.968	-.117	.117	-.086
The agency endeavors to access capabilities crucial to its competitiveness	.967	-.201	.023	.007
The agency is involved in activities leading to low transport and distribution costs	.965	-.163	-.038	.136
The agency is involved in sharing of resources in form of shared services	.963	-.156	.151	-.084
The Agency interchanges staff in joint projects	.955	-.058	-.122	-.228
The agency is involved in collaborative planning	.953	-.152	-.223	.052
The agency is involved in third party sourcing to economize on costs	.951	.108	-.231	.074
The agency is involved in enhancing flexibility & responsiveness to changes in customer demand	.946	-.281	.055	.024
The agency is involved in joint projects	.943	.012	-.242	.193
The agency is involved in resource pooling	.927	-.276	.136	.131
The agency is committed to improved cycle times	.916	.351	-.059	.028
The agency is involved in knowledge sharing in the design stage	.908	-.204	.339	.060
The agency is involved in seamless sharing of information	.877	.438	.054	-.050
The agency shares open book costing	.858	.431	.145	.135
The agency is involved in Shared tasks in Lead - buying	.754	.633	.108	-.048

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

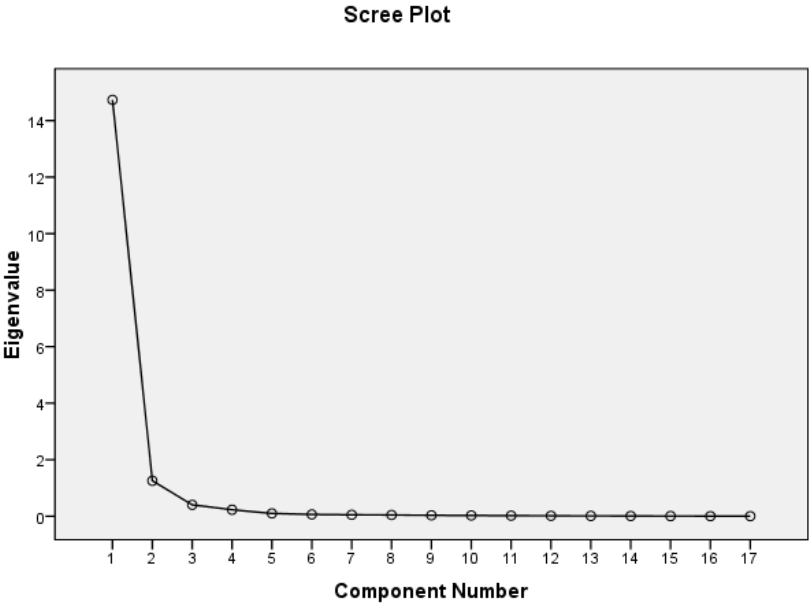
Source: Author (2013)

The results in Table 4.6 indicate that four collaborative practices that have the greatest impact on the procurement performance of state corporations. These collaborative practices include: The

agency is involved in information flow along the supply chain; the agency is involved in exploitation of complementary skills; the agency shares in design process collaboratively; and the agency endeavors to access capabilities crucial to its competitiveness. The findings support Walker et al., (2013) in his study of the benefits of collaborative procurement in Europe. His findings indicated that, collaborative practices more generate economies of scale than if state corporations acted alone.

Table 4.6 shows that involvement in information flow along the supply chain is having the greatest influence on the performance of state corporations since it accounts for 46.514% of the performance variation followed by involvement in exploitation of complementary skills (at 30.214). Sharing of design process collaboratively accounts for 17.102% of the variation while the corporation’s endeavor to access capabilities crucial to its competitiveness accounts for 3.925% of the variance. This implies that state corporations should invest more in management information systems to enhance the seamless sharing of real - time information with the rest of the members of their supply chains. The scree plot is as shown in figure 2 below;

Figure 2 Scree plot



Source: Researcher (2013)

4.3.2 Benefits of Collaborative Procurement

The objective of collaborative procurement is to achieve operational efficiencies and strategic effectiveness in the supply chain. To achieve these objective members of the supply chain need a purposeful coordination between themselves. The study sought to determine the benefits of collaborative public procurement among state corporations in Kenya. The respondents were asked questions on the extent to which they benefit from fifteen benefits of collaborative public procurement on a likert scale of 1-5 where: 1 = very small extent; 2= small extent; 3= moderate extent; 4= large extent; and 5= Very Large extent.

Table 4.7 Benefits of collaborative practices

	Mean	Std. Deviation ^a	Analysis N ^a	Missing N
The agency is able to share the design process collaboratively	4.237	1.1954	38	0
The agency is able to collaboratively share open book costing	3.500	1.2466	38	0
The agency is able to interchange staff in joint projects	3.368	1.4963	38	0
The agency is able to undertake joint projects	3.632	1.5320	38	0
The agency is able to undertake collaborative planning	4.368	1.0246	38	0
The agency is able to share tasks in form of lead buying	4.211	.9630	38	0
The agency is able to share resources in form of shared services	3.789	1.3786	38	0
The agency is able to lower transport & distribution costs	4.395	1.1977	38	0
The agency is able to benefit from exploitation of complementary resources	4.421	.9482	38	0
The agency is able to undertake resource pooling	3.816	1.4492	38	0
The agency is able to engage third party for sourcing routine and leverage items	3.947	1.1377	38	0
The agency is able to gain privileged access to capabilities crucial to its competitiveness	4.132	1.1664	38	0
The agency enjoys the benefits of effective information flow along the supply chain	3.316	1.6457	38	0
The agency is able to benefit from knowledge sharing in the designed stage	4.368	.9130	38	0
The agency is able to enhance its flexibility and responsiveness to changes in customer demand	4.211	.9907	38	0

a. For each variable, missing values are replaced with the variable mean.

Source: Researcher (2013)

According to Table 4.7 above, all the state corporation benefit from collaborative procurement at least to a moderate extent with all of them has a mean value of over 3.0. The agency's ability to benefit from exploitation of complementary resources is the main benefit with a mean of 4.421 while the least benefit is the agency's gain from effective information flow along the supply chain with a mean of 3.316. The findings above imply that state corporations in Kenya have started to gain operations economies as a result of collaborative procurement practices. This is in line with Hassan (2012) who established that t state corporations have benefited significantly since the introduction of procurement reforms of 2007.

The benefits were reduced by Principal Component Analysis from thirteen to five key benefits which account for 98.035% of the variance. The results are shown in Table 4.8 below.

Table 4.8 Benefits of collaborative public procurement - Component Matrix^a

	Component				
	1	2	3	4	5
The agency is able to gain privileged access to capabilities crucial to its competitiveness	.977	-.055	.024	-.100	-.078
The agency is able to enhance its flexibility and responsiveness to changes in customer demand	.967	-.070	.113	-.147	-.011
The agency is able to share resources in form of shared services	.967	.113	-.171	-.014	-.074
The agency is able to share tasks in form of lead buying	.962	.011	.169	-.170	-.065
The agency is able to share the design process collaboratively	.960	-.203	-.026	.063	.049
The agency is able to undertake collaborative planning	.956	-.218	-.003	.114	-.073
The agency is able to undertake resource pooling	.952	.145	-.193	-.034	-.088
The agency is able to undertake joint projects	.952	.232	-.010	.139	-.089
The agency is able to engage third party for sourcing routine and leverage items	.950	-.056	-.146	-.140	.200
The agency is able to collaboratively share open book costing	.941	.175	-.005	.157	.197
The agency is able to benefit from exploitation of complementary resources	.940	-.253	.079	.119	-.085
The agency is able to benefit from knowledge sharing in the designed stage	.932	-.205	.243	.020	.098
The agency is able to interchange staff in joint projects	.928	.344	-.033	-.057	.026
The agency is able to lower transport & distribution costs	.915	-.324	-.198	.009	.004
The agency enjoys the benefits of effective information flow along the supply chain	.900	.379	.160	.051	-.003

Extraction Method: Principal Component Analysis.

a. 5 components extracted.

Source: Researcher (2013)

Table 4.9: Benefits of Collaborative procurement - Variance

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.454	89.693	89.693	13.454	89.693	89.693
2	.691	4.605	94.298	.691	4.605	94.298
3	.262	1.746	96.044	.262	1.746	96.044
4	.163	1.086	97.130	.163	1.086	97.130
5	.136	.905	98.035	.136	.905	98.035
6	.077	.511	98.545			
7	.059	.391	98.936			
8	.044	.296	99.233			
9	.037	.244	99.476			
10	.032	.210	99.687			
11	.018	.119	99.805			
12	.011	.074	99.880			
13	.007	.048	99.928			
14	.006	.043	99.971			
15	.004	.029	100.000			

Extraction Method: Principal Component Analysis.

Source: Author (2013)

It is clear from Table 4.8 & 4.9 that, the main benefit of collaborative public procurement is the agency's ability to gain privileged access to capabilities crucial to its competitiveness based on the fact that it explains 89.693% of the variance. Next most important benefit of collaborative procurement is the agency's ability to enhance its flexibility and responsiveness to changes in customer demand accounting for 4.605% of the variation. The third most important benefit is the agency's ability to share tasks in form lead buying (1.746%). This is followed by the agency's ability to share design processes collaboratively (1.0860 and the agency's ability to undertake collaborative planning accounting for 0.95% of the variation. The findings above concur with Richey et al., (2007) who found out that collaborative planning, reduced inventories, lower transportation costs and improved cycle times are positive outcomes of relational integration.

From the forgone results it is clear that the main benefit of collaborative public procurement is the ability of the state corporations to gain privileged access to capabilities crucial to its competitiveness. This implies that state corporations should enhance the flow of shared knowledge among their staff to utilize this opportunity. The least benefit gained from collaborative procurement is the agency's ability to undertake collaborative planning which accounts for merely 0.905% of the variations. This calls for more research to unravel the potential of this competitive avenue by the key policy makers in the state corporations.

4.3.3 Critical success Factors in the implementation of Collaborative Public Procurement

Critical success factors are the enablers in the implementation of collaborative public procurement. The facilitators embody governance mechanisms that enable partners to communicate operational and strategic needs in order to ensure consistency in the supply chain. The study investigated factors that facilitate collaborative public procurement among state corporations in Kenya. Respondents were required to indicate the extent to which the various enabling factors have facilitated collaborative public procurement in their respective state corporations on a likert scale of 1-5 where; 1 = very small extent; 2= small extent; 3= moderate extent; 4= large extent; and 5= Very Large extent . The study posed twenty questions on the critical success factors in the implementation of collaborative public procurement.

Table 4.10 Critical success factors – Descriptive analysis

	Mean	Std. Deviation	Analysis N
The agency has cultivated commitment and trust between itself and other members of the supply chain	4.184	1.4305	38
The agency has inter organizational relationship and interdependency in the supply chain	4.500	.8929	38
The agency has implemented cross --functional processes among members of the supply chain	4.053	1.3141	38
The agency has developed cross-functional teams among partners in the supply chain	3.526	1.3098	38
The agency has established software to enhance inter-dependency	4.000	1.4332	38
The agency maintains cooperation and effective communication mechanisms	4.368	1.0246	38
The agency undertakes information sharing among the partners	3.842	1.2418	38
The agency is involved in sharing of technical expertise	4.132	1.2557	38
The agency has formed transaction-specific resource investment to foster relational governance bond	4.105	1.1807	38
The agency applies standard procedures geared towards process integration in the supply chain	3.921	1.4404	38
The agency acquires and maintains appropriate resources like; IT, training etc	4.421	1.0560	38
The agency undertakes joint selection of goods and services	3.474	1.4092	38
The agency undertakes resources and process complementarity among the supply chain members	3.842	1.4242	38
The agency shares risks and rewards with the supply chain members	4.395	1.0537	38
The agency follows normative guidelines in managing and selecting partners in the supply chain	4.026	1.2189	38
The agency has effective governance through top management support	4.368	.9979	38
The agency has adopted consistent performance measures with the rest of the supply chain members	3.395	1.4433	38
The agency fulfills the roles and responsibilities set out among the supply chain members	4.053	1.2509	38
The agency maintains co-managed inventories and vendor managed inventories	4.105	1.2034	38
The agency submits to clear mission statements and common goals among the supply chain members	4.079	1.3024	38

Source: Author (2013)

The results in Table 4.10 indicate that the agency's inter organizational relationship and interdependency in the supply chain has been adopted to the largest extent with a mean value of 4.500 while; the state corporations adoption of consistent performance measures to a moderate extent with a mean of 3.395. The findings above imply that the level of investment in enabling factors in the implementation of collaborative public procurement varies considerably from one organization to another. This supports Schotanus et al. (2011) who concluded that enabling factors are crucial state agencies need to benefit from integrated procurement.

For easy analyzability the data was reduced by Principal Component Analysis from twenty to four major critical success factors for analysis as shown in Table 4.11 below.

Table 4.11 Critical success factors - Component Matrix^a

	Component			
	1	2	3	4
The agency is involved in sharing of technical expertise	.983	-.038	-.046	-.093
The agency fulfills the roles and responsibilities set out among the supply chain members	.981	-.063	-.022	-.048
The agency has implemented cross --functional processes among members of the supply chain	.976	-.073	-.110	-.014
The agency follows normative guidelines in managing and selecting partners in the supply chain	.976	-.081	-.094	.058
The agency has formed transaction-specific resource investment to foster relational governance bond	.976	.027	.057	-.032
The agency has established software to enhance inter-dependency	.974	-.098	-.004	-.154
The agency maintains cooperation and effective communication mechanisms	.967	.189	-.040	-.022
The agency undertakes information sharing among the partners	.961	.001	.136	.162
The agency applies standard procedures geared towards process integration in the supply chain	.957	-.184	-.198	.045
The agency has effective governance through top management support	.956	.222	.028	.027
The agency undertakes resources and process complementarity among the supply chain members	.956	-.201	-.147	.052
The agency maintains co-managed inventories and vendor managed inventories	.955	.051	-.133	.239
The agency has cultivated commitment and trust between itself and other members of the supply chain	.953	-.034	-.205	-.084
The agency submits to clear mission statements and common goals among the supply chain members	.952	-.103	.063	-.247
The agency has developed cross-functional teams among partners in the supply chain	.948	-.201	.123	.131
The agency has adopted consistent performance measures with the rest of the supply chain members	.936	-.282	.174	-.025
The agency shares risks and rewards with the supply chain members	.931	.341	.037	.020
The agency acquires and maintains appropriate resources like; IT, training etc	.928	.350	.016	.007
The agency undertakes joint selection of goods and services	.924	-.167	.314	.047
The agency has inter-organizational relationship and interdependency in the supply chain	.908	.372	.078	-.062

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

Source: Author (2013)

The results in Table 4.11 indicate that; sharing of sharing of technical expertise, the fulfillment of the roles and responsibilities set out among the supply chain members, implementation of cross --functional processes among members of the supply chain, following of normative guidelines in managing and selecting partners in the supply chain, and are the main critical success factors in the implementation of collaborative public procurement. The findings affirm the results of (Golicic and Menzer, 2005) who found out that performance in public procurement depend on the infrastructure and investments in critical success factors

Table 4.12 Critical success factors -Total Variance

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	18.247	91.236	91.236	18.247	91.236	91.236	7.285	36.424	36.424
2	.727	3.633	94.868	.727	3.633	94.868	6.336	31.678	68.102
3	.323	1.617	96.486	.323	1.617	96.486	5.562	27.809	95.911
4	.221	1.105	97.591	.221	1.105	97.591	.336	1.680	97.591
5	.117	.586	98.177						
6	.076	.379	98.557						
7	.063	.316	98.872						
8	.054	.271	99.143						
9	.042	.210	99.353						
10	.031	.153	99.506						
11	.026	.131	99.638						
12	.024	.122	99.759						
13	.018	.089	99.849						
14	.012	.059	99.907						
15	.008	.042	99.949						
16	.003	.017	99.967						
17	.003	.017	99.983						
18	.002	.010	99.993						
19	.001	.006	99.999						
20	.000	.001	100.000						

Extraction Method: Principal Component

Analysis.

Source : Author (2013)

The results in Table 4.12 indicate the strength of the influence of the critical success factors on the total variation. Sharing of sharing of technical expertise is the most critical success factor accounting for 36.424% of the total variation. Fulfillment of the roles and responsibilities set out among the supply chain members the next most critical success factor accounting for 31.678% of the variation. Implementation of cross -functional processes among members of the supply chain is the third most important success factor at (27.809%) while, following of normative guidelines in managing and selecting partners in the supply chain is the least critical success factor accounting for only 1.680% of the total variation. The forgone results imply that the success of collaborative public procurement in Kenya lies in the investment they make in establishing critical enabling structures.

4.3.4 Procurement Performance of State Corporations

A performance measurement system must span the same part of the supply chain that the purchasing department has control over. Several performance indicators are used to determine the procurement performance of an organization. The study focused on the level of procurement performance among state corporations. Respondents were required to provide information regarding the procurement performance of their agencies. The respondents were required to respond to nine questions on various performance indicators.

An average performance of each performance indicator for all the state corporations was determined for analysis as indicated in Table 4.13

Table 4.13 Average Procurement Performance

CORPORATION	2008	2009	2010	2011	2012	APP
	X1	X2	X3	X4	X5	
F1	35.8	50.6	56.2	51.2	47.6	48.28
F2	45.3	74.2	74.2	51.2	28.2	54.62
F3	28.2	65.7	51.6	77.6	66.11	57.842
F4	33.1	83.5	45.1	74.2	74.2	62.02
F5	45.2	33.1	56.2	47.1	69.2	50.16
F6	45.2	65.2	74.2	66.2	77.6	65.68
F7	69.5	62.1	36.5	41.2	75.2	56.9
F8	56.2	47.1	25.7	74.2	83.5	57.34
F9	47.1	74.2	78.2	74.2	83.5	71.44
F10	51.2	83.5	74.2	51.2	77.6	67.54
F11	83.5	69.5	56.2	69.5	69.5	69.64
F12	69.5	58.5	83.5	65.1	69.5	69.22
F13	74.2	74.2	51.2	75.2	83.5	71.66
F14	36.5	56.2	75.4	69.5	59.6	59.44
F15	36.2	69.5	69.5	75.2	33.8	56.84
F16	74.2	62.8	62.8	77.6	83.5	72.18
F17	25.3	75.8	26.1	62.8	62.8	50.56
F18	69.5	62.8	68.9	83.5	28.2	62.58
F19	13.6	35.9	75.4	74.2	77.6	55.34
F20	74.2	74.2	74.2	74.2	62.8	71.92
F21	74.2	51.2	83.5	33.5	51.2	58.72
F22	47.6	42.3	81.2	62.8	83.5	63.48
F23	83.5	83.5	77.6	51.2	23.2	63.8
F24	51.2	28.2	69.5	83.5	74.2	61.32
F25	51.2	83.5	74.2	51.2	19.5	55.92
F26	69.5	66.2	77.6	75.2	56.8	69.06
F27	15.9	74.5	22.1	66.1	83.5	52.42
F28	69.5	41.2	83.5	62.8	83.5	68.1
F29	10.22	74.2	77.8	51.2	62.8	55.244
F30	51.2	75.4	67.8	51.2	77.6	64.64
F31	13.5	77.6	69.5	41.2	83.5	57.06
F32	62.8	83.5	68.7	74.2	77.6	73.36
F33	74.3	72.8	83.5	68.7	62.8	72.42
F34	51.2	66.5	19.8	55.8	62.8	51.22
F35	35.2	83.5	75.4	83.5	83.5	72.22
F36	51.2	74.2	83.5	51.2	74.2	66.86
F37	62.8	62.8	68.7	75.2	62.8	66.46
F38	51.2	86.4	74.2	75.4	74.2	72.28
Average performance	51.04526	65.95	65.08947	64.44737	66.07132	62.5206

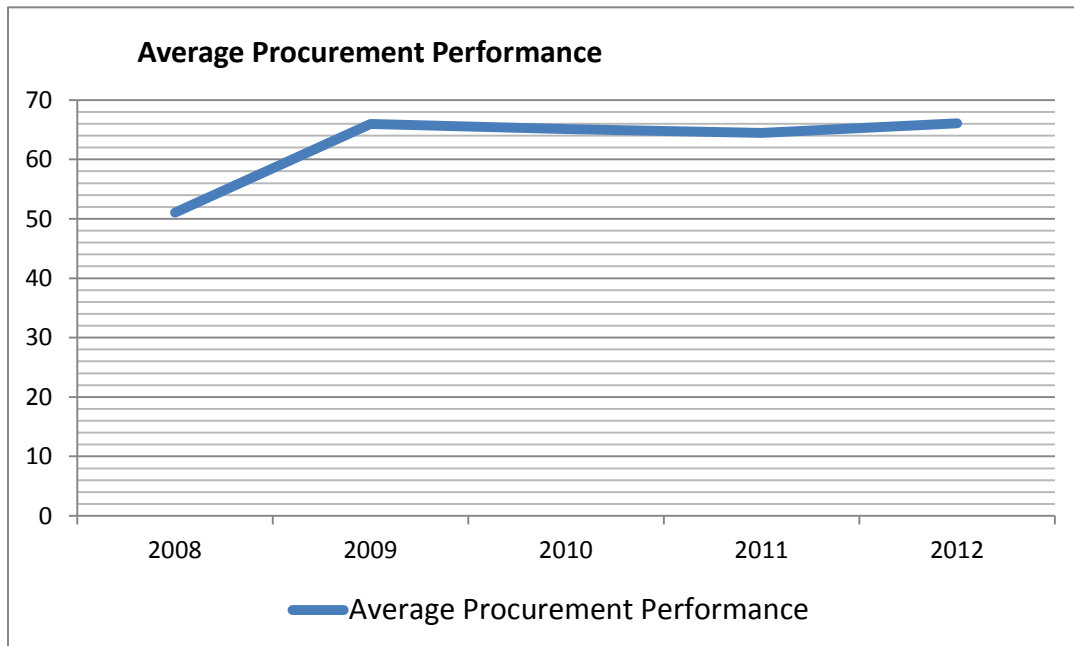
- APP –Average Procurement Performance**
- RU - Resource utilization**
- CR - cost reduction**
- RCT - reduction in cycle time**
- LO - Line on back order**
- ACT - Average cycle time to target time**
- RE - Rejects or late delivery**
- SV - Stock variance**
- TU - Training utilization**
- TE - Total expenditure to total budget**

Source: Researcher (2013).

Results in Table 4.13 above indicate the Average procurement performance of the state corporations improved over the period though at a slow rate.

Based on the findings in Table 4.13 above, the trend in the procurement performance of the state corporations was determined as indicated by Figure 3 below,

Figure 3: Average Procurement Performance



Source: Researcher (2013)

According to Figure 3 above, there was a moderate growth rate in procurement performance between 2008 and 2009 followed by a slight decline in the next three years. The trend in Figure 3

above shows that procurement performance has been increasing at a decreasing rate among state corporations. This implies that, collaborative procurement has had a less than significant impact on procurement performance among state corporations in Kenya.

4.4 The relationship between Collaborative Public Procurement and performance

Integration along the supply chain coupled by collaborative procurement strategies play a pivotal role in enhancing procurement performance in any organization. To establish the relationship between collaborative public procurement and performance among state corporations a regression analysis was done using SPSS version 22 statistical package. The independent variables included: the agency's involvement in information flow along the supply chain; the agency's involvement in exploitation of complementary skills; the agency's involvement in shares the design process collaboratively; and the agency's endeavor to access capabilities crucial to its competitiveness. The dependent variable was procurement performance. The performance indices for the state corporations indicated in Table 4.13 above were used as the dependent variable in the regression analysis.

4.4.1 Establishing the link between collaborative procurement and performance

With the help of SPSS version 22 package the above data was analyzed to establish the relationship between collaborative public procurement practices (Independent variables) and the procurement performance .A multiple regression model was used in this analysis. The resulting regression coefficients have been used to interpret the direction and magnitude of the relationship. The β coefficients show the responsiveness of the dependent variable as a result of unit change in each of the independent variables (Collaborative public procurement practices). The error term ϵ captures the variations that cannot be explained by the model.

Table 4.14 Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					F	Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. Change		
1	.447 ^a	.200	.103	7.2639	.200	2.064	4	33	.108	2.209	

a. Predictors: (Constant), The agency is involved in information flow along the supply chain, The agency endeavors to access capabilities crucial to its competitiveness, The agency shares in design process collaboratively, The agency is involved in exploitation of complementary skills

b. Dependent Variable: Procurement Performance

Source: Author (2013)

From Table 4.14 above, the Coefficient of Multiple Determination (R^2) is 0.20 which implies that the model is of low ‘goodness of fit’. This means that the regression line explains only 20.0% of the variation in Procurement performance.

Table 4.15 ANOVA^b

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	435.550	4	108.887	2.064	.108 ^a
Residual	1741.224	33	52.764		
Total	2176.774	37			

a. Predictors: (Constant), The agency is involved in information flow along the supply chain, The agency endeavors to access capabilities crucial to its competitiveness, The agency shares in design process collaboratively, The agency is involved in exploitation of complementary skills

b. Dependent Variable: Procurement Performance

Source: Author (2013)

Table 4.15 above indicated that the F static was 2.064 with a significant change of 0.108%. This implies that the impact of collaborative practice on performance is insignificant at 5% confidence level.

Table 4.16 Collaborative procurement – model Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1 (Constant)	72.826	5.200		14.004	.000	62.245	83.406					
The agency shares in design process collaboratively	-2.325	4.792	-.349	-.485	.631	-12.074	7.424	-.405	-.084	-.076	.047	21.346
The agency is involved in exploitation of complementary skills	-6.382	5.638	-1.167	-1.132	.266	-17.853	5.089	-.430	-.193	-.176	.023	43.837
The agency endeavors to access capabilities crucial to its competitiveness	.718	3.739	.119	.192	.849	-6.888	8.324	-.401	.033	.030	.063	15.817
The agency is involved in information flow along the supply chain	5.430	6.943	.967	.782	.440	-8.695	19.555	-.409	.135	.122	.016	63.006

a. Dependent Variable: Procurement Performance

Source: Researcher (2013)

The results in Table 4.16 above show that only two of the four collaborative public procurement practices had a positive effect on procurement performance. The most influential collaborative practice is the agency's is involved in information flow along the supply chain with a regression coefficient of 5.430 and a P- value of 0.440. The agency's endeavor to access capabilities crucial

to its competitiveness has the greatest influence with a regression coefficient of 0.718 and P-value of 0.849 is the only other collaborative practice that has a positive impact on procurement of the state corporations. The agency's sharing in design process collaboratively has a negative impact on performance with a regression coefficient of -2.35 and P-value of 0.631. The agency's involvement in exploitation of complementary skills has the most negative effect on collaborative procurement with a regression coefficient of -6.382 and P-value of 0.266.

From Table 4.14 the Coefficient of multiple Determination (R^2 Square) is 0.20 shows that the regression line explains only 20.0% of the variation in procurement performance.

As per the SPSS generated results shown in Table 4.16, the Equation $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$ becomes;

$$Y = 72.826 - 2.325X_1 - 6.382X_2 + 0.718X_3 + 5.430X_4 + \varepsilon$$

Where;

Y = Procurement Performance

X_1 = Sharing in the design process collaboratively

X_2 = Involvement in exploitation of complementary skills

X_3 = Endeavor to Access capabilities crucial to competitiveness

X_4 = Involvement in information flow along the supply chain

ε = Random error

According to the regression equation established, taking all other independent variables at zero, the procurement performance of state corporations will be 72.826. The data findings analyzed also shows that holding all other independent variables constant, a unit increase in the agency's involvement in exploitation of complementary skills will lead to a -6.382 decrease in the procurement performance of state corporations. Keeping all other variables constant, a unit increase in the agency's endeavor to access capabilities crucial to its competitiveness will lead to an increase of 0.718 in the procurement performance of the state corporations. Taking all other independent variable constant, a unit increase in the agency's involvement in information flow

along the supply chain will lead to a 5.430 increase the procurement performance of state corporations. On the other hand, taking all other independent variables constant, a unit increase in the agency's sharing in design processes collaboratively will lead to a -2.325 decrease in the procurement performance of the state corporations. The results above show that collaborative public procurement practices have had an insignificant influence on the procurement performance among state corporations in Kenya during the period under study. This is supported by the low Coefficient of Multiple Determination of 0.20 and significance change of 0.108 (refer to Table 4.14: Model Summary).

CHAPTER FIVE:

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The study sought to determine; the benefits of collaborative public procurement, the critical success factors in the implementation of collaborative public procurement; and to establish the relationship between collaborative public procurement and performance among state corporations in Kenya. This chapter presents; the summary of the findings, conclusions and recommendations of the study.

5.2 Summary of the findings

The study revealed that 78.9% of state corporations in Kenya participate in collaborative public procurement. This is tandem with the government's quest to reform public procurement to enhance the performance of state corporations in Kenya. However, the fact that 21.1% of state corporations have not participated in collaborative public procurement raises an alarm as this contravenes the government's public procurement policy as enshrined in the Public Procurement and Disposal Act of 2005. According to the study, over 80% of state corporations in Kenya have been in existence for over 10 years with only 9.4 % being in existence for less than ten years. The findings further indicate that most of the state corporations fall under the agricultural sector (31.25%).

The outcome of the regression analysis (see table 4.14) show a low Coefficient of Multiple Determination (R^2) at 0.20. This implies that the model is of low 'goodness of fit'. This means that the regression line explains 20.0% of the variation of procurement performance. The results also indicate that the significance change is at 0.108 implying that at 5% confidence level, the impact of collaborative public procurement is insignificant.

5.3 Conclusion

The outcome of the study revealed that the changes in external environment coupled by the liberalization affect the procurement performance of state corporations in Kenya now more than before. To overcome the immense challenges the corporations have adopted various collaborative procurement strategies to enhance their adaptability and responsiveness to the macro-environment. The study reveals that most of the state corporations (78.9%) are undertaking collaborative public procurement in line with the government's procurement and economic policy.

The first objective of the study was to determine the benefits of collaborative public procurement among state corporations in Kenya. The outcome of the analysis outlines four major benefits of collaborative procurement which are: the agency's ability to access capabilities crucial to its competitiveness; the agency's ability to enhance its flexibility and responsiveness to changes in customer demands; the ability to share tasks in form of lead buying; and the ability to share design processes collaboratively.

The second objective was to determine the critical success factors in the implementation of collaborative public procurement among state corporations in Kenya. The results in Appendix IV indicate that; sharing of technical expertise, the fulfillment of the roles and responsibilities set out among the supply chain members, implementation of cross-functional processes among members of the supply chain, following of normative guidelines in managing and selecting partners in the supply chain, and are the main critical success factors in the implementation of collaborative public procurement. The findings affirm the results of (Golicic and Menzer, 2005).

The third objective of the study was to establish the relationship between collaborative public procurement and performance among state corporations in Kenya. The Coefficient of Multiple Determination of 0.20 (see Table 4.14: The regression model summary), implies that only 20.0% of the procurement performance of state corporations can be attributed to the collaborative procurement practices adopted by the state corporations. Thus to enhance their procurement performance state corporations need to undertake more research and development in collaborative public procurement practices to identify opportunities they can tap from this process oriented approach as competitive strategy.

5.4 Recommendations

The study found that 21.1% of the state corporations are yet to adopt collaborative public procurement practices. There is need for relevant authorities to provide impetus for these corporations to undertake collaborative public procurement and earn the economies associated with collaborative procurement.

The fact that most of the collaborative procurement practices have a near perfect positive influence on the procurement performance underpins the need for the corporations to increase investment in these collaborative practices and intensify research and development in the respective strategies to optimize the gains of collaborative public procurement.

5.5 Limitations of the study

The focus of the study was to establish the relationship between the various collaborative public practices undertaken by state corporations in Kenya and their procurement performance. It is clear that a study of this magnitude should include a survey of sizeable number of corporations. However time and material resources did not make this feasible and for this reason the study concentrated on just 45 of the state corporations. The re-organization of ministries also limited the amount and quality of the data collected since many state corporations had recent information leaving lots of gaps and blanks in the questionnaires. Despite these challenges the validity of the findings emanating from this study cannot be compromised.

5.6 Suggestions for further Research

This study focused on the relationship between collaborative public procurement practices and procurement performance among state corporations in Kenya. There is need for future studies to determine the challenges facing collaborative public procurement among state corporations in Kenya. Further studies should consider how variables like; capacity optimization, privatization, and capitation impact on collaborative public procurement. Future researchers should investigate the optimal level of investment in collaborative public procurement strategies.

REFERENCES

- Walker, H., Schotanus, F., Bakker, E., & Harland, C. (2013). Collaborative Procurement: A Relational View of Buyer–Buyer Relationships. *Public Administration Review*, 73 (4), 588–598. doi: 10.1111/puar.12048.
- Hassan, A. (2012). Procurement practices in Kenya's Public Corporations. *Unpublished MBA project, University of Nairobi*.
- Ngari, M. (2012). The Effects of public procurement and disposal act on procurement in parastatals in Kenya. *Unpublished MBA project, University of Nairobi*.
- Simiyu, I. (2011). Regulation of discretion in Public Procurement in Kenya. *Unpublished MBA project, University of Nairobi*.
- Delbufalo, E. (2011). Outcomes of inter-organizational trust in Supply chain Relationships. *Supply Chain Management: An International Journal*, 17(4), 377 – 402. DOI 10.1108/13598541211246549
- Richey, R., Roath, A., Whipple, J., & Fawcett, S. (2010). Exploring a Governance Theory of Supply Chain Management: Barriers and facilitators to Integration. *Journal of Business Logistics*, 31(1), 237 – 246. doi: 10.1002/j.2158-1592.2010.tb00137.x
- Erridge, A. (2007). Public Procurement; Public procurement, public value and the Northern Ireland unemployment pilot Project. *Public Administration*, 85(4), 1023 – 1043. doi: 10.1111/j.1467-9299.2007.00674.x
- Maira, S. and Che, O. (2011). Collaboration as an anti-crisis solution: The Role of the Procurement function. *International Journal of Physical Distribution & Logistics Management*, 41(9), 860-877. doi: 10.1108/09600031111175825.

- J. Gordon Murray, J. & Rentell, G. and Geer, D. (2008). Procurement as a shared service in English Local Government. *International Journal of Public Sector Management*, 21(5), 540-555. doi: 10.1108/09513550810885822.
- Tutu, O. Badu, E. & Manu, O. (2010). Exploring corruption practices in public procurement of infrastructural projects in Ghana. *International Journal of Managing Projects in Business* 3(2), 236-256. Doi: 10.1108/17538371011036563.
- Kumar, A., Ozdamar, L., and Ng, C.P (2005). Procurement Performance Measurement System in the Health care industry. *International Journal of Health Care Quality Assurance*, 18 (2), 152-166. Doi: 10.1108/09526860510588179.
- Public Procurement Oversight Authority- Kenya (2009) *The public Procurement and Disposal General Manual* 1st edition.
- Walker, H., Schotanus, F., Bakker, E., & Harland, C. (2008). Choosing A Collaborative Organization: the case of Collaborative initiatives. *International Journal of Procurement Management*, 1 (3), 297 – 317. Retrieved from <http://www.emeraldinsight.com/>
- Kestenbaun, M. and Straight, R. (1995). Procurement Performance: Measuring Quality, Effectiveness, and Efficiency. *Public Productivity & Management Review*, 19, (2), 200-215. retrieved from: <http://www.jstor.org/stable/3380498> .Accessed: 14/08/2013 06:44.
- Scottish Government official website, (2013). What is collaborative procurement? Retrieved from: <http://www.scotland.gov.uk/Topics/government/Procurement/directory/collaborative> Procurement. Accessed on 14/08/2013 04:10.
- Karuna, J. and Ashis, D. (2005). Supply Chain Collaboration: A Governance Perspective. *International journal: Supply chain forum*, 6(2), 50-54. Retrieved from <http://www.emeraldinsight.com/>. 10/08/2013 011/045.

APPENDIX I: Letter of Introduction

University of Nairobi

Nyangweso William B.
School of Business,

P. O. Box 30197

NAIROBI

September, 2007

Dear Respondent,

RE: COLLECTION OF SURVEY DATA

I am a postgraduate student of the University of Nairobi, School of Business, Nairobi campus. In order to fulfill the degree requirement, I am undertaking the above project as part of the academic requirements towards completion of the course. You have been selected to form part of this study. This is to kindly request you to assist me collect the data by filling out the accompanying questionnaire, which I will collect from you personally. The information that you are going to provide will be used exclusively for academic purposes and will be treated with strict confidence. At no time will your name appear in my report. A copy of the final paper will be availed to you upon request.

Your co-operation will be highly appreciated.

Thank you in advance.

Yours faithfully,

NYANGWESO WILLIAM B.

MBA STUDENT

P. MAGUTU

LECTURER/SUPERVISOR

SCHOOL OF BUSINESS SCHOOL OF
BUSINESS, UNIVERSITY OF NAIROBI

APPENDIX – II: The Questionnaire

Part 2: General Information

- i. Name of your Corporation (Optional)
- ii. Your position in the company.....(Optional)
- iii. In which ministry does your corporation fall?.....
- iv. For how long has your corporation been in existence?.....
- v. For how long have you been working with this corporation?(Optional)

Part 2: Public Collaborative Procurement

I. Has your state corporation participated in public collaborative procurement?

Yes No

Please tick where appropriate

II. To what extent has your agency participated in the following Collaborative activities? Please indicate on a Scale of 1 – 5 where: 1 = To Avery Small Extent; 2 = Small extent; 3 = Moderate Extent; 4 = Large Extent; 5 = Very Large Extent

No	Issue	(1)	(2)	(3)	(4)	(5)
A. COLLABORATVE ACTIVITIES						
i.	The agency shares the design of process collaboratively					
ii.	The agency collaboratively share Open book costing					
iii.	The agency interchanges staff in joint Projects					
iv.	The agency is involved in joint projects					
v.	The agency is involved in Collaborative planning					
vi.	The agency is involved in seamless					
vii.	The agency is involved in sharing tasks in form of lead-buying					

viii.	The agency is involved in sharing resources in the form of shared services					
ix.	The agency is committed to improved cycle times					
x.	The agency is engaged in activities that lead to low transport and distribution costs					
xi.	The agency is involved in exploitation of complementary skills					
xii.	The agency is involved in resource pooling					
xiii.	The agency engages third party for sourcing routine and leverage items in order to economize on costs					
xiv.	The agency endeavors to gain privileged access to capabilities crucial to its competitiveness					
xv.	The agency is involved in effective information flow along the supply chain					
xvi.	The agency is engaged in knowledge sharing in the design stage					
xvii.	The agency is involved in enhancing flexibility and responsiveness to changes in customer demand					

III. To what extent has your agency benefited from Collaborative public Procurement in relation to increased efficiency? Please indicate on a Scale of 1 – 5 where: 1 = To Avery Small Extent; 2 = Small extent; 3 = Moderate Extent; 4 = Large Extent; 5 = Very Large Extent

No		(1)	(2)	(3)	(4)	(5)
	A. BENEFITS OF COLLABORATIVE PROCUREMENT					
	1. Increased Procurement Effectiveness in the Supply chain					
i.	The agency is able to share the design of process collaboratively					
ii.	The agency is able to collaboratively share Open book costing	(1)	(2)	(3)	(4)	(5)

iii.	The agency is able to interchange staff in joint Projects					
iv.	The agency is able to undertake joint projects					
v.	The agency is able to undertake collaborative planning					
	2. Increased Efficiency in the procurement process	(1)	(2)	(3)	(4)	(5)
i.	The agency is able to share tasks in form of lead-buying					
ii.	The agency is able share resources in the form of shared services.					
iii.	The agency is has improved its cycle times					
iv.	The agency is able to lower transport and distribution costs					
	3. Access to Resources in the Supply chain	(1)	(2)	(3)	(4)	(5)
i.	The agency is able to benefit from the exploitation of complementary skills					
ii.	The agency is able to undertake resource pooling.					
iii.	The agency engages is able to engage third party for sourcing routine and leverage items in order to economize on transaction and distribution costs					
iv.	The agency is able to gain privileged access to capabilities crucial to organizational competitiveness					
	4. Coordination and Seamless Learning	(1)	(2)	(3)	(4)	(5)
i.	The agency is able to enjoy the benefits of effective information flow along the supply chain					
ii.	The agency is able to benefit from knowledge sharing in the design stage					
iii.	The agency is able to enhance its flexibility and responsiveness to changes in customer demand					

IV. To what extent have the following factors facilitated collaborative procurement in your agency? Please indicate on a Scale of 1 – 5 where: 1 = To Avery Small Extent; 2 = Small extent; 3 = Moderate Extent; 4 = Large Extent; 5 = Very Large Extent

C. CRITICAL SUCCESS FACTORS		(1)	(2)	(3)	(4)	(5)
1. Investment in Relation – Specific Assets						
i.	The agency has cultivated Commitment and trust between itself and the other members of the supply chain					
ii.	The agency has Inter-organizational relationship and interdependency in the supply chain					
iii.	The agency has Implemented cross- functional processes among members of the supply chain					
iv.	The agency has developed cross – functional teams among partners in the supply chain					
v.	The agency has established software to enhance inter-dependency.					
2. Knowledge Sharing Routines		(1)	(2)	(3)	(4)	(5)
i.	The agency maintains Cooperation and effective communication mechanisms					
ii.	The agency undertakes Information sharing among the members of the supply chain					
iii.	The agency is engaged Sharing of technical expertise.					
iv.	The agency has formed transaction - specific resources investment to foster relational governance bond					
v.	The agency applies Standard procedures geared towards process integration in the supply chain					
3. Complementary Resources and Capabilities		(1)	(2)	(3)	(4)	(5)
i.	The agency acquires and maintains appropriate resources like; IT, training etc					
ii.	The agency undertakes Joint selection of goods and services					
iii.	The agency partakes in Resource and process complementarity among the supply chain members					
iv.	The agency Shares Risks and Rewards with the supply chain members					

v.	The agency follows Normative guidelines in managing and selecting partners in the supply chain					
	4. Effective Governance	(1)	(2)	(3)	(4)	(5)
i.	The agency has Effective governance through top management support					
ii.	The agency has adapted consistent performance measures with the rest of the supply chain members					
iii.	The agency fulfills the roles and responsibilities set out among the supply chain members					
iv.	The agency maintains Co-managed inventories and Vendor Managed Inventories (VIM)					
v.	The agency submits to Clear mission statements and common goals among the supply chain members.					

V. Please provide us with the following information regarding the procurement performance of your agency for the last five years.

B. MEASURES OF PROCUREMENT PERFORMANCE	2008	2009	2010	2011	2012
Resource utilization %					
Cost reduction%					
Reduction in cycle time%					
Line items on back Order to total line items%					
Average cycle time to targeted average cycle time%					
Rejects early or late delivery to total number of items delivered %					
Stock variance to total stock value%					
Training utilization%					
Total expenditure of the department to total budget of the department%					

Thank you very much for your valuable time.

APPENDIX- III: State Corporations in Kenya

Ministry of Agriculture

1. Kenya sugar research foundation
2. Pyrethrum board of Kenya
3. Kenya plant health inspectorate service (KEPHIS)
4. South Nyanza sugar company
5. Agricultural development company ltd
6. Agricultural finance corporation
7. Kenya sugar board
8. Agricultural information resource center
9. Bukura agricultural college
10. Coffee board of Kenya
11. Chemelil sugar company
12. Coffee development fund
13. Coffee research foundation
14. Horticultural crops development authority
15. Kenya agricultural research institute
16. Kenya coconut development authority
17. Kenya seed company
18. Kenya sisal board
19. National cereals and produce board
20. Nzoia sugar company
21. Pest control products board
22. Tea board of Kenya
23. Tea research foundation of Kenya
24. Muhoroni sugar company (in receivership)
25. Miwani sugar company (in receivership)
26. Agro- chemical and food company
27. Nyayo tea zones development authority

Ministry of co – operative development and marketing

- 28. Co-operative college of Kenya
- 29. New Kenya co-operative creameries
- 30. The Sacco regulatory authority

Ministry of Education

- 31. Kenya literature bureau
- 32. Jomo Kenyatta foundation
- 33. Kenya school equipment production unit
- 34. Kenya institute of special education
- 35. Teachers service commission
- 36. Kenya institute of education
- 37. Kenya national examination council
- 38. Kenya education management unit
- 39. Center for mathematics and science teachers in Africa

Ministry of State / office of the president /Justice / state law office

- 40. National drought management authority
- 41. Kenya school of law
- 42. Council for legal education
- 43. National campaign against drug abuse
- 44. National AIDS control council
- 45. Kenya school of government
- 46. Kenya copy right board
- 47. National crime research centre
- 48. Witness protection agency
- 49. Transitional authority
- 50. CIC
- 51. Kenya Anti-corruption Authority
- 52. Kenya Ordinance Factories Corporation

Ministry of Environment & Natural resources / Forestry and wildlife / fisheries

- 53. National Environment management authority
- 54. Kenya forest service

- 55. Kenya forestry research institute
- 56. Kenya wild life service
- 57. Kenya marine fisheries research institute

Ministry of Energy

- 58. Kenya power
- 59. Kenya electricity generating company
- 60. Kenya electricity transmission company
- 61. National oil corporation of Kenya
- 62. Kenya electricity transmission board
- 63. Kenya pipeline company
- 64. Energy regulatory commission
- 65. Kenya petroleum refineries
- 66. Rural electrification authority
- 67. Geothermal development company

Ministry of Finance

- 68. Capital markets authority
- 69. Consolidated bank of Kenya
- 70. Public procurement oversight authority
- 71. Registration of certified public secretaries
- 72. Insurance regulatory authority
- 73. Kenya revenue authority
- 74. Kenya post office savings bank
- 75. Kenya investments authority
- 76. KASNEB
- 77. Privatization commission
- 78. Kenya reinsurance corporation
- 79. Policy holders compensation trust fund
- 80. Kenya national assurance company
- 81. Kenya trade agency network
- 82. Competition authority of Kenya
- 83. State corporations appeal tribunal

84. Kenya commercial bank
85. National bank of Kenya
86. Office of the controller of budgets
87. Office of the auditor general
88. Uchumi supermarkets
89. Central bank of Kenya

Ministry of Housing

90. National Housing corporation

Ministry of Higher education

91. University of Nairobi
92. National bio-safety authority
93. Higher education loans borad
94. Commission for higher education
95. Kenyatta University
96. Moi University
97. Egerton university
98. Maseno university
99. Masinde Muliro university
100. JKUAT
101. Technical university of Kenya
102. Multimedia University of Kenya
103. Mombasa technical university
104. Kimathi university
105. Kisii University college
106. Narok university college
107. Chuka university college
108. South Eastern university college
109. Laikipia university college
110. Kabianga university college
111. Likipia university college
112. Pwani university college

- 113. Bondo university college
- 114. Chepkoilel university college
- 115. Karatina university college
- 116. National council for science and technology
- 117. University Of Nairobi Enterprises & Services Ltd

Ministry of Information & communication

- 118. Kenya communications commission
- 119. Kenya year book editorial board
- 120. Media council of Kenya
- 121. Kenya film classification board
- 122. Kenya film commission
- 123. KBC
- 124. Brand Kenya board
- 125. Postal corporation of Kenya
- 126. Kenya information & communication board
- 127. Kenya College of Communication and Technology

Ministry of livestock

- 128. Kenya meat commission
- 129. Kenya dairy board
- 130. Kenya animal genetic resource centre
- 131. Kenya veterinary vaccines production institute
- 132. Kenya leather development authority

Ministry of Planning & Vision 2030

- 133. Kenya National bureau of statistics
- 134. Kenya Vision 2030 delivery secretariat
- 135. Constituencies development fund
- 136. National coordinating agency for population and development
- 137. Kenya institute of public policy research & analysis (KIPPRA)

Ministry of Roads

- 138. Kenya national highways authority

139. Kenya roads board

140. Kenya urban roads authority

141. Kenya rural roads authority

Ministry of Labor

142. NSSF

143. National industrial training authority

Ministry of local government

144. Local Authorities provident fund.

Ministry of Health

145. Kenya medical research institute

146. Kenya medical training college

147. Kenyatta National hospital

148. Moi teaching & referral hospital

149. NHIF

150. Pharmacy & poisons board

151. Kenya medical supplies agency

152. Kenya medical practitioners & dentists board

153. National quality control laboratory

Ministry of tourism / National heritage & culture

154. Kenya tourist board

155. Bomas of Kenya

156. Catering and tourism development levy trustee

157. Kenya tourist development corporation

158. Kenya utalii college

159. Kenya safari Lodges & Hotels

160. Kenyatta international conference centre

161. Sports stadia management board

162. Youth enterprises development board

163. Kenya national library service

164. NGOs coordination board

165. Kenya cultural centre

166. National museums of Kenya

Ministry of Transport

167. Kenya airports authority

168. Kenya national shipping line ltd

169. Kenya ferry services

170. Kenya maritime authority

171. Kenya civil aviation authority

172. Kenya ports authority

173. Kenya railways corporation

Ministry of regional development

174. Ewaso Ngiro South development authority

175. Ewaso Ngiro North development authority

176. Coast development authority

177. Kerio valley development authority

178. Lake basin development authority

179. Tana and Athi rivers development authority

Ministry of Trade / Industrialization

180. Kenya national trading corporation

182. Kenya wine agencies ltd

183. Kenya export processing zone

184. Export processing zones authority

185. Industrial & commercial evaluation corporation

186. Numerical machining complex

187. Kenya accreditation service

188. Kenya bureau of standards

189. East African Portland cement

190. IDB capital ltd

191. Kenya industrial estates ltd

192. Kenya industrial property institute (KIPI)

Ministry of Water & irrigation

193. Water resources management authority
194. The water services regulatory board
195. Athi water services board
196. Tanathi water services board
197. Coats water services board
198. Lake Victoria North water services board
199. National irrigation board
200. Northern water services board
201. National water conservation & Pipeline Corporation
202. Rift Valley water services board
203. Tana water services board
204. Lake Victoria South water services board
205. Kenya water institute
206. Water appeals board
207. National drought management authority

Ministry of Devolution / Transition

208. The government press
209. Commission on Revenue Allocation
2010. Parliamentary service commission

APPENDIX IV: Principal Component Analysis of collaborative Procurement practices

Critical Success Factor	Component			
	1	2	3	4
The agency is involved in sharing of technical expertise	.983	-.038	-.046	-.093
The agency fulfills the roles and responsibilities set out among the supply chain members	.981	-.063	-.022	-.048
The agency has implemented cross --functional processes among members of the supply chain	.976	-.073	-.110	-.014
The agency follows normative guidelines in managing and selecting partners in the supply chain	.976	-.081	-.094	-.058
The agency has formed transaction-specific resource investment to foster relational governance bond	.976	.027	.057	-.032
The agency has established software to enhance inter-dependency	.974	-.098	-.004	-.154
The agency maintains cooperation and effective communication mechanisms	.967	.189	-.040	-.022
The agency undertakes information sharing among the partners	.961	.001	.136	.162
The agency applies standard procedures geared towards process integration in the supply chain	.957	-.184	-.198	.045
The agency has effective governance through top management support	.956	.222	.028	.027
The agency undertakes resources and process complementarity among the supply chain members	.956	-.201	-.147	.052
The agency maintains co-managed inventories and vendor managed inventories	.955	.051	-.133	.239
The agency has cultivated commitment and trust between itself and other members of	.953	-	-	-

the supply chain		.034	.205	.084
The agency submits to clear mission statements and common goals among the supply chain members	.952	-.103	.063	-.247
The agency has developed cross-functional teams among partners in the supply chain	.948	-.201	.123	.131
The agency has adopted consistent performance measures with the rest of the supply chain members	.936	-.282	.174	-.025
The agency shares risks and rewards with the supply chain members	.931	.341	.037	.020
The agency acquires and maintains appropriate resources like; IT, training etc	.928	.350	.016	.007
The agency undertakes joint selection of goods and services	.924	-.167	.314	.047
The agency has inter- organizational relationship and interdependency in the supply chain	.908	.372	.078	-.062

Extraction Method: Principal Component Analysis.
a. 4 components extracted

Source : Author (2013)