SUPPLY CHAIN GOVERNANCE AND ORGANIZATIONAL PERFORMANCE AMONG PARASTATALS IN KENYA

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DECLARATION

Declaration by the Student

This is to declare that this research project is my original work and has not been presented in any University or Institution of Higher Learning for award of Degree.

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DEDICATION

To my son Emmanuel Kingoo

ACKNOWLEDGEMENT

First I would like to give praise and honor to the Almighty God for giving me the sufficient grace and power to write this Research Project. My sincere gratitude goes to my supervisors, Mr. Michael Chirchir who devoted his time to guide me throughout my research. Your humble supervision and support throughout the study enabled me complete my project in good time. My parents, sisters and brothers for their endless support and guidance

ABSTRACT

The impact of supply chain management on economic growth and investment decision of firms has been studied by several scholars around the world. Supply chain accounts for more than 25% of the total demand in most private sectors and over 35% of public sector's total demand. Despite this, effect of supply chain governance on public organization performance has not been well covered, probably due to their non-profit nature. As a result, this study was intended to determine the effect of supply chain governance among parastatals in Kenya. Its objectives were; to determine the effect of supply chain planning on organization performance, to establish the effect of supply chain and disposal procedure on organisation performance, to evaluate the effect supply chain record management on organisation performance, to analyse effect of supply chain code of ethics on organisation performance and, to determine the effect of market price index on organization performance. The study used an exploratory research design. From a target population of 96 parastatals, a sample size of 77 respondents was arrived at using Yamane formula. Stratified and simple random sampling methods were used to select respondents. Both primary and secondary data was collected and analyzed using multiple regression methods. Significance of regression beta results was assessed at 0.05 level of confidence using F test statistics. The study findings showed that there was significant correlation between supply chain governance and organization performance.

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DEFINITION OF TERMS

Supply Chains Management - are interrelationship of organizations where there is flow of services, products, information and finances either upstream or downstream (Mentzer et al, 2001).

Supply Chain Planning – This the management process concerned with defining supply chain goals for future direction of the company and organizing activities required to achieve them.

Supply Chain Governance – These are the co-ordination mechanisms that guides and control the entire process of supply chain within a company

Parastatals – These are statutory organizations owned fully or partially by the state (government of Kenya)

Market Price Index – this is a normalized average or weighted average of price relatives for a given class of goods or services in a given region, during a given interval of time.

Supply Chain Code of Ethics – these are codes adopted by the organization of supply chain professionals to assist members in understanding the different between right and wrong, and in applying that understanding to their decisions.

Supply Chains - Are conglomerates formed by several corporations in order to respond to customers' demand.

LIST OF ABBREVIATION AND ACRONYMS

PPOA - Public Procurement Oversight Authority

SCM - Supply Chain Management

SCMG - Supply Chain Management Governance

SPGI - Supply Chain Governance Implementation

SPSS - Statistical Package for Social Science

WHO - Would Health Organization

GVA - Governance Value Analysis

TCE - Transaction Cost Economics Theory

BSC - Balanced Scorecard

SCOR - Supply Chain Operations Reference Model

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Supply chain management (SCM) is one of the recent branches of management that have evolved in the recent years. It has impact on economic growth as well as investment decision of firms all over the world. Although supply chain counts for 15% of the total demand in certain sector, in other sectors it can account for majority of the demand. On the other hand public sector procurement can still have impact on organizations which are not its primary customers (Carter and Rogers 2008).

As defined by Mentzer et al (2001), Supply Chains are interrelationship of organizations where there is flow of services, products, information and finances either upstream or downstream. SCM has been termed as a crucial function in many organizations whether in the service or production industry. This is because every organization aims at satisfying their customers whether internal or external which in turn lead to improved performance (Kopczak & Johnson 2003).

Supply Chain Management (SCM), as a global network used to deliver products and services from raw materials to end customers through an engineered flow of information, physical and cash, Lancioni et al. (2000) stressed the need to have coordinative mechanism that would uphold standards. This coordinative mechanism is termed Supply Chain Governance. According to Crisen (2012), He defined supply chain governance as the way in which supply chains are administered from a central place to achieve responsibility for business continuity, developing a shared sense of value within the organization, safeguarding corporate knowledge and management of human capital.

Supply chain governance has changed the way public sector operates. This is as a result of integration which enhances co-ordination of demand in order to satisfy customers' needs. Carter and Rogers (2008) pointed that Supply Chain Governance not only helps

organizations streamline and manage supplier quality and supplier performance, but also enables them to identify, mitigate and manage supplier risks for key procurement and manufacturing processes

With the increased demand for better services in the public sector, there is need to effectively manage the public supply chains. McAdam et al (2005) stressed that interrelationships between the partners in the supply chain needs to be managed to enhance performance, enhances continuity and shared sense of value within the whole organization. Thus Supply chain governance seeks to implement a framework of integrating supply chain plans which link to both internal and external customers (OGC, 2005). To sum up, Supply Chain Governance has been seen as a powerful tool in enhancing the performance of supply chain in both the public and private sector.

1.2 Statement of the Problem

Many researches on supply chain management have been done both locally and internationally, and majorly on corporate or private sector. Studies by Blowfield & Dolan (2010), Apopa (2012), (Roath, 2012) and Kasomi (2012) have found varied impacts of SCM on organizational performance. Some of the findings includes, but not limited to, enhanced performance measurement, improvement and management organisational processes. However, the supply chain management within the public sector has not been well covered. Public sectors are more complex due to increased number of departments and partners within the supply chain structure. This has called for a highly integrated and co-ordinated mechanism to develop policies and procedures that help co-ordinate flow of goods, services and finances within the sector, that is, supply chain governance. In Kenya, no study has been directed towards analysing the impact of supply chain governance, and especially within the public sector. This study, therefore, sets to bridge this gap by analysing the impact of supply chain governance on organization performance in the public sector.

1.3 Objectives of the Study

The general objective of the study was to analyse the impact of supply chain governance on organization performance in the public sector.

1.3.1 Specific Objectives

- i. To determine the effect of supply chain planning on organization performance
- ii. To establish the effect of supply chain and disposal procedure on organisation performance
- iii. To determine the effect of supply chain record management on organisation performance
- iv. To establish effect of supply chain code of ethics on organisation performance
- v. To determine the effect of market price index on organization pe4formance

1.4 Research Ouestions

- i. How does supply chain planning affect performance of parastatals in Kenya?
- ii. To what extent do supply chain and disposal procedure affects the performance of parastatals in Kenya?
- iii. Do supply chain record management have any effect on performance of parastatals in Kenya?
- iv. What effect does supply chain code of ethics have on the performance of parastatals in Kenya?
- v. To what extent do market price index affect the performance of parastatals in Kenya?

1.5 Value of the Study

Due to the dynamic and complex nature of public sectors, the value of supply chain management cannot be achieved unless there exists a mechanism that outlines policies and procedures that co-ordinate flow of goods, services and finances within the structure. This is what is termed supply chain governance. Therefore, a study that aims at determining effects of such a mechanism cannot be ignored. This study would aid supply chain managers to develop better supply chain policies and procedures that enhances

effectiveness and efficiency in service delivery, organization competitiveness and general performance.

The study would also help the government and other regulatory authorities in formulating or reformulating chain management rules and guideline.

The study provided an understanding of the supply chain governance and parastatal performance. This insight enriched supply chain governance literature and could be used for further studies and researches in the area

CHAPTER TWO:

LITERATURE REVIEW

2.1 Introduction

This chapter focuses on the literature review conducted by the researcher. It commence with an overview of supply chain governance and organization performance. It also looks into public sector supply chain in Kenya, and supply chain governance and public organization performance. Last but not least, it concludes with the conceptual framework discussion.

2.2 Overview of Supply Chain Governance and Organization Performance

Most researches performed within governance area refer to political or corporate governance, without covering the complexity of supply chain governance. Supply chains are conglomerates formed by several corporations, in order to respond to customers' demand. Supply chain is a concept with many understandings. The study defined supply chain as a group of companies creating the supply for a product or service. This definition is given considering the fact that the term supply chain has evolved from Porter's value chain, and that supply chain should be used by logistics researchers (Mentzer et al., 2001).

The performance of supply chains is very often considered by comparison to firm's performance, both financial and non-financial performance measurements. One model used for measuring financial performance at supply chain level is the governance value analysis (GVA), proposed by Gosh and John (Hammervoll, 2009). It takes into account two elements of the created value: the relationship value (joint profits) and the actors value (share of the joint profit). Based on these two values, the authors try to justify the relation between two companies, using mostly the transaction cost economics theory (TCE). Several other researchers have extended the value chain creation measurement from Balanced Scorecard (BSC) to the Supply Chain Operations Reference model (SCOR) (Barber, 2008).

There are no overall accepted methodologies for measuring value creation within a supply chain, as performance cannot be measured using only one key performance indicator from one side of the business, but more than one have to be used. If we consider both the negative results which a supply chain can generate, such as bad reputation, bad image for the customers, loss of trust from customers and different other organizations – the situation gets even more confused. However, probably a general supply chain performance score shall be composed by positive influences and negative influences (Ellinger, 2006).

Rapid innovation, imitation and obsolescence of products are prompting an increasing number of firms to concentrate on their supply chains to remain competitive. In many industries today, competitive success depends upon performance improvements at the supply chain level. The ability to innovate and improve lies within the relationships forged among the business partners who are chain members (Lejeune and Yakova, 2005).

While optimal operational performance of a chain member is a challenge, a more difficult and interesting problem occurs when individual chain members are operating at an optimal level, but deficient chain performance results from poor coordination among the chain members (Simatupang *et al.*, 2002). Such poor coordination often results due to lack of effective information sharing among the members (Barratt, 2004).

On the other hand, performance measures serve as an indicator of how well a business initiative, process, or system is functioning. Various performance metrics are in place for measuring the effectiveness of chain operations. Chains have been evaluated from various perspectives. These include cost and non-cost perspective; strategic, tactical or operational focus (Gunasekaran *et al.*, 2001); business process perspective (Hoek, 2001); and financial perspective (Beamon, 1999). Such analysis, by clearly assigning authority and responsibility at each level or process, can serve as a good indicator of integration issues in supply chain.

Of special emphasis in supply chain performance measurement is classification of existing measures of performance into twelve categories, broadly grouped under three heads – resource, output, and flexibility measures. Resource measures look at chain performance in terms of inventory levels, personnel requirements, equipment utilization, energy usage and cost (Hoek, 2001).

Output measures include customer responsiveness, quality and the quantity of final product produced. Flexibility measures study volume, delivery, mix and new product flexibility. While the resource and output measures reflect performance of the chain, the flexibility measures throw light on the chain's capacity to coordinate and gain success under changing situations, and are closely aligned with the coordination goals of our framework (Barratt, 2004).

2.3 Public Sector Supply Chain in Kenya

The public sector supply chain mainly comprises procurements by government or state owned or controlled institutions and corporations. Public procurement consists of public sector supply chains and multi level network which can be assessed at the central, province, district and local authority. The difference between these levels of procurement usually depended on value and volume and annual goods and services pro cured (Ellinger, 2006). In addition, public sector supply chains mainly focus on different areas. This differs from sector to sector and also industry sector to sector, but they are standardized and regulated by one body. For instance, in Kenya, all public procurements are regulated by Public Procurement Oversight Authority (PPOA).

Supply Chain Management (SCM) integrates the concept of supply and demand management, hence need to adopt the concept of supply chain governance to enhance coordination all parties and their activities within the supply chain (Mentzer et al, 2001). Supply chains in government (public) could either be inbound to serve the need of internal customers or out bound to serve the citizens and also work towards delivering the organizational objectives. Some of the actors in the public sector supply chains include accountants, policy makers and private organizations which receive orders from the

public sector. Governance of supply chains will help to analyze intra-network relationships as well as analyses of inter-network-relationship in the public sector. (Migiro & Ambe, 2008).

According to Otieno (2004), in the last decade there has been a dramatic shift from one dimensional supply chain to integrated network of partners in the supply chains in both private and public sector. Public sector supply chain consists of different parties that are either directly or indirectly interrelated with the aim of satisfying the needs of customers.

Essig & Dorobek (2006) argues that integration of supply chain governance in the Public Sector is playing a critical role in optimizing logistics support and improving the management of secondary inventory. There are a number of clear benefits to the Public Sector for effective management and controlling SC in the public sector: Better risk allocation, effective risk allocation is a critical consideration in procurement. Risk should always be allocated according to party best placed to manage it, and a better understanding of the way in which the requirement can be delivered.

According to Ochieng and Muehle (2012), the Public Procurement System in Kenya has evolved from a crude system with no regulations to an orderly legally regulated procurement system. Government's Procurement system was originally contained in the Supplies Manual of 1978; The Director of Government Supply Services was responsible for ensuring the proper observance of the provisions of the Manual (PPOA 2010). All the aforesaid reform initiatives were geared towards improving the public procurement system by enhancing accountability and transparency with the aim of achieving value for money, and attracting investments by creating sound business climate.

These reforms have ensured fairness and competition among suppliers of goods, works and services, thereby restoring the confidence of Kenyans in the public procurement process while at the same time ensuring that the Government gets the best value for its money (PPOA, 2007). This led to the creation of the Public Procurement Oversight

Authority (PPOA) to oversee public procurement system with its principal functions of ensuring that the public procurement law is complied with and capacity of the function among stakeholders is enhanced (PPOA ,2010).

2.4 Supply Chain Governance and Organizational Performance in Public Sector

Supply chain management in public sector has experienced lack of direction, poor coordination, and lack of open competition, transparency and corruption. Consequently, lack of qualified SCM specialists to conduct and manage such supply chains in a professional, timely and cost effective manner has also affected performance of many public organizations (Baily et al, 2004). In addition, inflexible and bureaucratic systems of SCM in the public sector have contributed to unacceptable contract delays, increased costs and potential for manipulation, creating a perception that public expenditure is low ineffective, expensive and often corrupt calls for implementation of supply chain governance mechanism (Ngugi and Mugo, 2011).

Therefore, supply chain governance is intended towards optimizing operational chain performance by delivering a product or service to the ultimate customer at minimal cost and at the required time (Fandela and Stammen, 2004). Thai (2001) identified basic principles of good supply chain management practices in the public sector. These include accountability; where effective mechanisms must be in place in order to enable resource utilization among supply chain members, competitive supply; which requires the procurement be carried out by competition unless there are convincing reasons for single sourcing; and consistency; which emphasizes the equal treatment of all suppliers.

Supply chain governance yields benefits to organizations such as cost reduction, enhanced profitability, assured supplies, quality improvements and competitive advantage as was noted by Batenburg &Versendaal (2006). An effective SCM ensures availability of the right goods or services in the right quantities, available at the right time, for the right place and at reasonable prices, and at recognizable standards of quality (WHO, 2007). market price index helps in enhancing value for money which help in

resource utilization among sector supply chains. This improves service delivery and enhances accountability (PPOA, 2010).

Sound public procurement policies and practices are among the essential elements of good governance (KIPPRA, 2006). Otieno (2004) notes the irregular procurement activities in public institutions provide the biggest loophole through which public resources are misappropriated. Government should demonstrate effectiveness in carrying out goals and producing the types of services that the public wants and needs through supply chain governance (Segal and summers, 2002).

Brinkerhoff (2004) identifies three key components of accountability, including the measurement of goals and results, the justification or explanation of those results to internal or external monitors, and punishment or sanctions for non-performance or corrupt behavior. Strategies which help increase accountability in supply chains include information systems which measure how inputs are used to produce outputs; watchdog organizations, health boards or other civic organizations to demand explanation of results; performance incentives to reward good performance; and sanctions for poor performance(Vian and Collins 2006).

Public authorities are expected to provide excellent service to their constituents in an effective and transparent manner, all the while working under constant resource constraints by adopting ICT (Hagén, and Zeed, 2005). In order to meet today's operating challenges, regional and local governments are turning to ICT to enhance the services for residents, businesses and visitors, and improve internal efficiencies by lowering costs and increasing productivity. Proper record management in supply chains helps in increasing accessibility of suppliers information transparency and accountability as well as managing supply chains risks (Migiro & Ambe, 2008).

According to Wee (2002) Public officials should always behave ethically and fairly, including in their business undertakings. Ethical behavior supports openness and

accountability in a procurement process and gives suppliers confidence to participate in the Government marketplace and can also reduce the cost of managing risks associated with fraud, theft, corruption, and other improper behavior; and enhance confidence in public administration.

The various measures used for performance appraisal of chain functions compare one level or process to another. The array of levels, processes and measures relating to them illustrate the fact that supply chains, to yield positive performance, needs efficient coordination among all chain activities. Performance of the supply chain will always have an impact on overall organizational performance (Carton et.al, 2006).

Supply chain disruptions, supplier non-compliance and discrepancy in supplier output quality can significantly reduce a company's revenue, affect market share, increase production cost, and threaten brand image and reputation. Diverse supplier locations: Geographical remoteness and diversity of suppliers can critically impact not only the operations of an organization, but also the business in general (Cohen and Winn, 2007).

Many public supply chains activities suffer from neglect, lack of direction, poor coordination, lack of open competition and transparency, differing levels of corruption and most importantly not having a cadre of trained and qualified procurement specialists, who are competent to conduct and manage such procurements, in a professional, timely and cost effective manner (Amaratunga & Baldry, 2002).

With an effective supplier governance program in place, organizations can detect issues, non-compliance incidents and identify indicators of decreasing performance levels early and proactively work to avoid further damage (Carter and Rogers, 2008). Ellinger et al. (2006) found five inhibitors to supply chain governance. These include insufficient knowledge of the other function, lack of communication, poor working relationship, conflicting goals and lack of direction from senior management.

Frohlich(2002)urges that supply chain management efforts focuses primarily on internal (not external) integration—and no firm qualified as having "end-to-end" supply chain integration, largely due to strategic and monitoring failures. Moberg et al. (2003) discussed barriers to successful supply chain governance implementation (SPGI). These include lack trust and process visibility, fear associated with losing control, misaligned goals and objectives, poor information systems, short-term as opposed to long-term focus, and supply chain complexity issues (Barratt 2004).

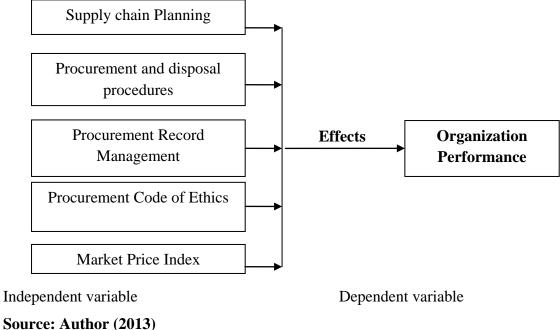
In conclusion, the need for supply chain governance to enhance organizational performance is quite evident but very few researches have been recorded in the Kenyan situation. Supply chain management as a discipline is taught as a supplementary subject by most universities in Kenya which clearly indicates the lack of professionals in the industry.

2.5 Summary and Research Gap Analysis

The literature review is evident that a lot has been done on supply chain management and its benefits to the organization. Whereas supply chain management may cut across several sectors, it may not be the case with supply chain governance in the public sector, which focuses on organizational performance not in terms of profit made, but services rendered to the citizens. It is therefore clear that there is need to find out the effect of supply chain governance in organizational performance.

2.6 Conceptual Framework

Figure 2.1: Conceptual Framework



Source: Author (2013)

2.6.1 Supply Chain Governance

Supply Chains are interrelationship of organizations where there is flow of services, products, information and finances either upstream or downstream. With the increased demand for better services in the public sector there is need to effectively manage the public supply chains to enhance performance, continuity and shared sense of value within the whole organization (Davis, 2008). Conversely, supply chain governance seeks to implement a framework of integrating supply chain plans which link to both internal and external customers (Crisan E. 2012). In view of this, supply chain governance consists of the following procedures; procurement planning procedures, procurement and disposal procedures, procurement record management, procurement record code of ethics and market price index. These form the independent variable of the study.

2.6.2 Organizational Performance

Organizational performance comprises the actual output or results of an organization as measured against its intended outputs (or goals and objectives). According to Richard et al. (2009) organizational performance encompasses three specific areas of firm outcomes: financial performance (profits, return on assets, return on investment, etc.) product market performance (sales, market share, etc.); and shareholder return (total shareholder return, economic value added, etc.). Therefore, this forms the dependent variable, as the study will seek to assess the effect of supply chain governance on it.

CHAPTER THREE RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methodology used in conducting the study. This includes the research design, target population, sampling design and sample size, data collection methods and instrument as well as data analysis techniques.

3.2 Research Design

The study used an explanatory research design. According to Cooper and Schindler (2000), explanatory research focuses on why questions. In answering the `why' questions, the study involved in developing causal explanations how phenomenon Y (Public Organization Performance) is affected by factor X (Supply Chain Governance). This design was chosen because it applied closely to the objective of the study, hence practical in testing the study hypothesis.

3.3 Target Population

The target population of the study comprised all parastatal or state corporations in Kenya. The number of parastatal corporation stand at 96 (Appendix III) and were classified as shown in Table 3.1

Table 3.1 State Parastatals in Kenya Classified According to Sector Served

Economic Sector Served	Population
Agriculture	15
Service	19
Industry	30
Banking and Finance	8
Education	24
TOTALS	96

3.4 Sample and Sampling Procedures

From the target population of 96, the sample size computed based on Yamane (1973) sample size formula, as follows;

$$n = \frac{N}{1 + Ne^2}$$

Where: n = Sample size

N = Population size

e = the error of Sampling (0.05)

Hence, a sample size of 77 respondents was arrived at. The study used stratified sampling procedure to select respondents. Respondents for each stratum were computed based on their weight, according Neyman (1934) allocation formula as follows;

$$n_h = \left(\frac{N_h}{N}\right) n$$

Where: n_h - The sample size for stratum h,

n - Total sample size,

 N_{h} -The population size for stratum $h,\,$

N- The total population

Hence, distribution will be as in Table 3.2.

Table 3.2 Sample Size

		Sample size
Economic Sector Served (Stratum)	Population	$n_h = \left(\frac{N_h}{N}\right)n$
Agriculture	15	12
Service	19	15
Industry	30	24
Banking and Finance	8	6
Education	24	20
TOTALS	96	77

Source: Own (2013)

Thereafter, respondents from each stratum were selected using simple random sampling and convenience sampling methods.

3.5 Research Instruments and Data Collection Procedures

The researcher used questionnaires as a tool for data collection. The questionnaires contained closed ended questions that solicited respondents' views on supply chain governance effects on organization performance, as weighted on linker scale. Questionnaires were self administered and picked one week later to allow respondents humble time to fill them. In addition to primary data, secondary data was obtained from relevance journals, books, researches and other academic publication.

3.6 Data Analysis Procedures and Presentation

The study employed Regression analysis to estimate the causal relationships between factors under study. With the aid of SPSS version 18 software, the researcher performed multiple regressions analysis on primary data to estimate the beta values of factors and F – test statistics to determine their significance at confidence level of 95%. The regression equation of the study was as shown below;

 $y = \alpha + \beta_1 x_{1+} \beta_2 x_{2+} \beta_3 x_{3+} \beta_4 x_{4+} \beta_5 x_{5+E}$

Where: y = Organization Performance

 α = Constant

 $\beta_1...$ β_5 = the slope representing degree of change in independent variable by one unit variable.

x₁= Procurement Planning

 x_2 = Procurement Disposal Procedures

x₃= Procurement Record management

x₄= Supply Chain Code of Ethics

x₅= Market Price Index

 ε = error term

The results of analyzed data were presented using tables and charts with a brief description thereafter.

CHAPTER FOUR RESULTS AND DISCUSSION

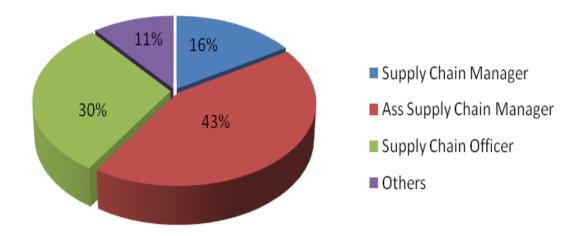
4.1 Introduction

This chapter presents results of the study based on the formulated objectives and research questions as presented in chapter one. The chapter also analyzes the variables involved in the study and estimated the conceptual model described in chapter two. In the first two sections data description and analysis is presented, then followed by model estimation and interpreted. Data analysis was based on 56 questionnaires (fully answered and returned) out of the 77 questionnaires that were distributed. This accounts for 73% response rate and considered ideal for analysis to proceed (Kothari, 2009).

4.2 Demographic Information

Demographic information results were displayed in Table 4.1 and revealed the position, gender, years of service and level of education of the respondents. Demographic results with regards to work position reveals that 16% of respondent were supply chain managers, 43% assistant managers, 30% supply chain officers and 11% held other positions within supply chain department in state parastatals as shown in Chart 4.1. This finding reveals that majority of respondents were either assistant supply chain managers or supply chain officers, therefore information collected were reliable and relevance to topic.

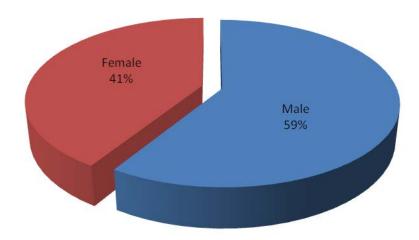
Chart 4.1: Respondents Work Position



Source: Research data (2013)

With regard to respondent gender, majorly were male gender accounting for 59% as compared to female counterpart with 41%, showing that majority of supply chain personnel are male and shown in Chart 4.2.

Chart 4.2: Respondents Gender



Findings on years of service shows that 10% of respondents have worked for less than a year, 26.67% between one to two years, and 50% between two to four years, with 6.67% for both 4-6 years and above 5 years each as presented in Chart 4.3. This fining reveals that majority of respondent have worked for more than two years, thus were skilled and familiar with supply chain operation.

30 25 20 15 10 5 0 <1yrs 1-2 yrs 2-4 yrs 4-5 yrs >5 yrs Years of Work

Chart 4.3: Respondents Years of Service

Source: Research data (2013)

Last but not least, respondent level of education shows that 16.67% were A level qualified and 83.33% were University graduates as depicted in Chart 4.4.

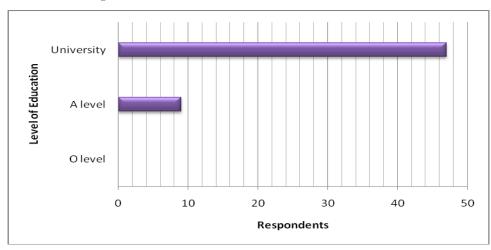


Chart 4.4 Respondents Level of Education

This also shows that most of responded were learned or supply chain professionals and conversant with their job. Generally, demographic characteristics justify the reliability and validity of data collected.

Table 4.1 Demographic Information

		Frequency	Percent
Position	Supply Chain Manager	9	16
	Ass Supply Chain		
	Manager	24	43
	Supply Chain Officer	17	30
	Others	6	11
	Total	56	100
Gender	Male	33	60
	Female	23	40
	Total	56	100
Years of service	< 1yrs	7	10
	1-2 yrs	15	26.66
	2-4 yrs	28	50
	4-5 yrs	3	6.67
	>5 yrs	3	6.67
	Total	56	100
Level of education	O level	0	0
	A level	9	16.67
	University	47	83.33
	Total	56	100

4.3 Supply Chain Factors

The study developed five specific objectives of supply chain governance factors. These factors –were; supply chain planning, supply chain procurement and disposal procedures, supply chain record management, supply chain code of ethics and market price index. Study findings on the effect of these factors on organizational performance were discussed as follows;

4.3.1 Effect of Supply Chain Planning on Organizational Performance

The researcher considered it important to establish information about the effect of supply chain planning on organizational performance. This led to formulation of research objective one. Study findings on supply chain planning are illustrated in Table 4.2 and reveals that majority of the respondents agreed that proper planning help in achieving efficiency in the supply (mean=3.63). In addition, respondents affirmed that supply chain planning ensures optimum level of inventory (mean=3.39) and managing cost of holding inventory (mean=2.23). Finally, respondents hold that supply chain planning helps achieve public confidence (mean=4.07). This summed up the effect of supply chain planning to a mean=3.33, standard deviation 1.314, skewness 0.254, kurtosis 0.088, interpreted supply chain planning relatively affect organizational performance.

Table 4.2 Supply Chain Planning

		Std.		
Supply chain Planning	Mean	Deviation	Skewness	Kurtosis
Supply chain planning help in achieving				
public confidence	4.07	1.203	0.649	1.321
Planning help in achieving efficiency in				
the supply	3.63	1.553	0.67	-1.201
Supply chain planning ensures optimum				
level of inventory	3.39	1.396	0.092	1.405
Planning help in managing cost of				
holding inventory	2.23	1.103	-0.397	-1.172
Summary of Supply chain Planning	3.33	1.314	0.254	0.088

The regression analysis for the effect of supply chain planning on organization recorded a beta coefficient (β) of 0.567. This shows that supply chain planning has weak positively correlation with organizational performance. The findings concur with Essig & Dorobek (2006) who found that supply chain planning plays a critical role in optimizing logistics support and improving the management of secondary inventory. Study also collaborates with study of Otieno (2004) who outlined benefits that Public Sector could derived from effective management and controlling of supply chain.

4.3.2 Effect of Supply Chain procurement and Disposal Procedures on Organizational Performance

The research also considered it important to determine the effect of supply chain and disposal procedures on organizational performance. The result for these findings are illustrated in Table 4.3, and revealed that parastatals with good supply chain and disposal policies were more transparent and accountable (mean=4.6). In addition, findings also revealed that good supply chain and disposal relatively reduces supply cycle time (mean=3.48), but do not affects supply chain risk (mean=2.78). In general, supply chain and disposal procedures summed up to mean=3.62, standard deviation 0.731, skewness - 0.802 and kurtosis 0.324, showing that good supply chain and disposal procedures slightly affects organizational performance.

Table 4.3 Supply chain and disposal

		Std.		
Supply chain and disposal	Mean	Deviation	Skewness	Kurtosis
Good supply chain and disposal policies				
enhances transparency and accountability	4.6	1.117	0.391	-1.323
Supply chain and disposal procedures affect				
cycle time	3.48	0.49	-0.431	-1.827
Good supply chain and disposal help reduce				
supply chain risk	2.78	0.585	-2.366	4.121
Supply chain and disposal	3.62	0.731	-0.802	0.324

The finding from regression analysis of supply chain and disposal procedures recorded a beta coefficient (β) of 0.474. These means that supply chain and disposal procedures were weakly positively correlated with organizational performance. These findings agreed with Thai (2001) who found that basic principles of good procurement and supply chain management practices in the public sector helps an organization to manage its cost and performance.

4.3.3 Effect of Supply Chain Record Management on Organizational Performance

Research findings on the effect of supply chain record management are illustrated in Table 4.4. These finding revealed that proper management of supply chain record aid information accessibility (mean=4.78), and information accessibility relatively help in planning process (mean=3.49). Furthermore, supply chain record management do not necessarily reduces time to allocate suppliers or supplier cycle time (mean=2.65), but fairly reduces time needed to producing and tracking files (mean=3.38). In general, employee support summed up to mean=3.58, standard deviation 0.628, skewness 0.791 and kurtosis -0.11 admitting that supply chain record management relatively affects organizational performance.

Table 4.4 Supply Chain Record Management

		Std.		
	Mean	Deviation	Skewness	Kurtosis
Record management helps in accessing				
crucial information when required	4.78	0.534	-0.144	-0.132
Information accessibility helps in planning	3.49	0.501	0.041	-2.012
Record management helps in producing and				
tracking of files when required	3.38	0.75	1.575	0.652
Record management helps to reduce time to				
allocate suppliers hence reduces cycle time	2.65	0.727	1.691	1.053
Supply chain record management	3.58	0.628	0.791	-0.11

Regression result for supply chain record management recorded a beta coefficient (β) of 0.374 indicating a weak positive relation with organizational performance. Researcher did not find any study that collaborate these finding.

4.3.4 Effect of Supply Chain Code of Ethics on Organizational Performance

The research objective three was formulated to assess the effect supply chain code of ethics on organizational performance. Study results are illustrated in Table 4.5. Findings showed that adoption of good practice and ethical standards do not really help in achieving value for money (mean=2.31). However, observance of ethical standards fairly help in resource utilization (mean=3.23). Study also found that good practice of ethical standards highly enhance open and effective competition (mean=4.20) and equal treatment of all supply chain parties (mean=4.00). In general, adoption and practice of good code of ethics summed up to mean=3.58, standard deviation 0.276, skewness -0.045 and kurtosis 0.22, revealing that adoption of good supply chain code of ethics relatively affect organizational performance.

Table 4.5 Supply Chain Code of Ethics

		Std.		
	Mean	Deviation	Skewness	Kurtosis
Adoption of good practices and ethical				
standards equal treatment of all parties	4.01	0.794	0.407	-1.304
Good practice of ethical standards enhances				
open and effective competition	4.20	0.602	-0.186	0.41
Ethical standards help in resource utilization	3.23	0.753	-1.306	2.447
Adoption of good practices and ethical				
standards help achieve value for money	2.31	0.756	0.906	-0.672
Good practice of ethical standards	3.44	0.726	-0.045	0.22

Research findings show that adoption of supply chain code of ethics recorded a beta coefficient (β) of -0.283, denoting a weak negative relation with organizational performance. This is in agreement with Brinkerhoff (2004) found that organizations that observe code of ethics were more transparent and accountable to it employees, however he did not find negative relation, as the study finding. In addition, Brinkerhoff (2004) identified three key components of accountability, brought about by code of ethics, measurement of goals and results, the justification or explanation of those results to internal or external monitors, and punishment or sanctions for non-performance or corrupt behavior.

4.3.5 Effect of Market Price Index on Organizational Performance

Last but not least, the researcher also sought to establish the effect of market price index on organizational performance. As illustrated in Table 4.6, findings on effect of market price index showed that organizations that uses market price index in evaluating suppliers prices greatly control their purchase costs (mean=4.56), hence achieve value for their money (mean=4.24). Further findings also revealed that use of market price index do not necessarily enhance resource utilization (mean=1.98), but somehow enhances quality (mean=3.34). In general use of market price index attained a mean =3.53, standard deviation 0.528, skewness 0.069 and kurtosis -0.125.

Table 4.6 Market Price Index

		Std.		
Market Price Index	Mean	Deviation	Skewness	Kurtosis
Market price index help in cost control	4.56	0.016	1.875	0.035
Market price index help in achieving				
value for money	4.24	0.369	-1.842	1.404
Market price index helps in quality				
control enhancement	3.34	0.855	0.604	-1.364
Market price index enhances resource				
utilization	1.98	0.871	-0.361	-0.575
Market Price Index	3.53	0.528	0.069	-0.125

Source: Research data (2013)

Results from regression analysis for market price index recorded a beta coefficient (β) of 0.472, denoting a relatively weak positive relation with organizational performance. Hence Market Price Index weakly positively affects organizational performance.

4.4 Multiple Regression Results and Significance Tests

Significance tests were conducted at 0.05 level of confidence. Findings indicate that there was no multi-co linearity among the independent variables since the variance inflation values were all less than 4, which is the rule of thumb recommended value. These findings are displayed in Table 4.7.

Thus, the regression model equation for effect of supply chain governance on parastatal performance is:

 $y = 1.66 + 0.567 x_{1+} 0.474 x_{2+} 0.374 x_{3-} 0.283 x_{4+} 0.472 x_{5+} 0.458$

Where: y = Organization Performance

 α = Constant

 $\beta_1...$ β_5 = the slope representing degree of change in independent variable by one unit variable.

 x_1 = Procurement Planning

 x_2 = Procurement Disposal Procedures

x₃= Procurement Record management

 x_4 = Supply Chain Code of Ethics

 x_5 = Market Price Index

 ε = error term

Table 4.7 Coefficients of the Estimates

	Unstandardized		Standard	ized	Collinearit	y
	Coefficient	ts	Coefficients		Statistics	
		Std.				
	В	Error	Beta	Sig.	Tolerance	VIF
(Constant)	1.66	0.39		0.001		
Supply chain planning	0.219	0.028	0.567	0.000	0.563	1.776
Supply chain and						
disposal procedure	0.788	0.131	0.474	0.000	0.316	3.164
Supply chain record						
management	0.593	0.17	0.374	0.000	0.146	3.856
Supply chain code of						
ethics	-0.085	0.07	-0.283	0.224	0.552	1.812
Market price index	0.239	0.188	0.472	0.000	0.118	3.495

a Dependent Variable: Organization performance

Source: Research data (2013)

The regression results in Table 4.7 shows that each of the predicted parameters in relation to the independent factors were significant except supply chain code of ethics; β_1 = 0.567 (p-value = 0.000 which is less than α = 0.05) which implies that supply chain planning has significance effect on organization performance. This indicates that for each unit increase in the supply chain planning, there is 0.567 units increase in organizational performance and vice versa.

The Table also shows that $\beta_2 = 0.474$ (p-value = 0.001 which is less than $\alpha = 0.05$) indicates that supply chain and disposal procedures has significant effect on organizational performance. This implies that for each unit increase in supply chain disposal procedure there is up to 0.474 unit increases in organizational performance and vice versa.

The findings also shows that β_3 was 0.374 (p-value = 0.000 which is less than α = 0.05) which implied that supply chain record management has significance effect on organizational performance. This implies that there was slight, but significance, effect up

to 0.374 unit increase in organizational performance for each unit increase in proper supply chain record management and vice versa.

The findings further reveals that β_4 was -0.283 (p-value = 0.224 which is greater than α = 0.05) which implies that supply chain code of ethics has a negative but not significant effect on organizational performance. This implies that there was a slight negative effect of up to 0.283 unit decrease in organizational performance for each unit increase in observance of supply chain code of ethics and vice versa.

Last but not least, the findings also shows that β_5 was 0.472 (p-value = 0.001 which is less than $\alpha = 0.05$) which implied that market price index has positive significant effects on organizational performance. This implies that for each unit change in market price index, there is up to 0.472 unit increase in organizational performance and vice versa.

4.5 Tests for the full Model

Table 4.8 illustrates the model summary of multiple regression models. The results shows that all the five predictors (supply chain planning, supply chain and disposal procedures, supply chain record management, supply chain code of ethics and market price index) explain 43.5 percent variation of organizational performance. Unexplained variance is 56.5% which is rather high, meaning that other independent variables are required.

Table 4.8 Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.659	0.435	0.425	0.40583

Predictors: (Constant), supply chain planning, supply chain and disposal procedures, supply chain record management, supply chain code of ethics and market price index Source: Research data (2013).

Table 4.9 ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	36.732	5	7.346	44.606	.001
Residual	47.761	51	0.165		
Total	84.493	56			

b Dependent Variable: organization performance

Source: Research data (2013)

4.6 Discussion

Study findings reveal that there is a positive relation ship between supply chain planning and organizational. The findings concur with Essig & Dorobek (2006) who found that supply chain planning is key in optimizing logistics support and improving the management of secondary inventory. Study also collaborates with study of Otieno (2004) who outlined benefits that Public Sector could derived from effective management and controlling of supply chain.

Supply chain and disposal procedures were weakly positively correlated with organization performance. These findings agreed with Thai (2001) who found that basic principles of good procurement and supply chain management practices in the public sector helps an organization to manage its cost and performance. Market price index and record management has a positive but weak relationship with organizational performance this concur with (PPOA 2011) who argues that market price index helps in enhancing value for money which help in resource utilization among sector supply chains however

Proper record management has a positive relationship with organizational performance, these findings concur with Carton et.al, (2006) who found out that record managent helps in enhancing efficient coordination among all chain activities.

a Predictors: (Constant), supply chain planning, supply chain and disposal procedures, supply chain record management, supply chain code of ethics and market price index

Supply chain code of ethics has a negative relationship with organizational performance. This concur with Brinkerhoff (2004) who found that organizations that observe code of ethics were more transparent and accountable to it employees, however he did not find negative relation, as the study finding. In addition, he also identified three key components of accountability, brought about by code of ethics, measurement of goals and results, the justification or explanation of those results to internal or external monitors, and punishment or sanctions for non-performance or corrupt behavior.

Study findings in ANOVA Table 4.9 indicated that the above-discussed variation was significant as evidence of F ratio of 44.606 with p value 0.001 <0.05 (level of significance). Thus, the model was fit to predict organizational performance using supply chain planning, supply chain and disposal procedures, supply chain record management, supply chain code of ethics and market price index.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This is the final chapter of the study. It presents results of the study findings on formulated objectives, answers research questions, and presents study conclusions and recommendations.

5.2 Summary of Findings

The ultimate purpose of this study was to analyze the effect of supply chain governance on performance among paraststals in Kenya. The target population of the study comprised 98 parastatals. In order to meet this, the study met all it specific objectives as outlined in chapter one.

Demographic findings on gender brought to light the fact that there were more males than females among the personnel of supply chain department. It was also affirmed that majority of the respondents were either supply chain officer or assistant supply chain manager, hence were reliable to give sufficient information desired by the researcher. Last but not least, demographic finding also revealed that majority of those who work in supply chain were educated with a high percentage having attained university qualification, meaning they were professionals in the field.

The findings revels that supply chain planning is positively related with the organizational performance. Therefore, supply chain managers should heavily invest in supply chain planning to achieve efficiency in organization performance.

The Study further reveals that a supply chain and disposal procedure was positively related with organization performance. Hence, organizations should adopt clears supply chain disposal and acquisition of fixed assets to ensure that they only retain economic assets.

Study finding also shows that supply chain record management was positively related with organization performance. This change was significance and hence organization should practice good record management to enhance performance.

In addition, supply chain code of ethics was negatively associated with organization performance. The inverse relationship between code of ethics and organization performance could be attributed to poor enforcement due to strictness and inflexibility of ethics code provisions. Organization should precautionary implement supply chain code of ethics to mitigate its negative impact on performance.

Finally, market price index was positively related with organization performance. This was achieved from cost savings by negotiating for better prices. Organizations should always evaluate their suppliers prices based on market price index to realize value for their investment.

These findings provides enough evidence to suggest that there was linear relationship between supply chain planning, supply chain and disposal procedures, supply chain record management and market price index with organization performance, whereas inverse relation between supply chain code of ethics and organization performance.

5.3 Conclusions

The study affirms that supply chain planning has a positive effect on organization performance. The study findings evidenced that supply chain planning positively impacts on organization performance since it acts as a 'blue print' for the supply chain department to meet other department requirements. The study also provides some assertive evidence that supply chain and disposal procedures seems to play an important role in organization performance. Specifically, organization with a suitable procurement and disposal procedures are highly likely to achieve transparency and accountability.

The study results also suggest that supply chain record management has a momentous effect on organization performance. An organization with good supply chain record management easily access crucial information when required, Thus help in planning. Finally, results confirm that supply chain code of ethics has a negative effect on organization performance. However, organization that enforces code of ethics tend to enhance equality, open and effective competition thus, customer service.

5.4 Recommendations

From the study findings it was conceived that supply chain planning has a positive effect on organizational performance, therefore study recommends that supply chain planning should be highly observed in public organizations.

The study finds strong support for the argument that supply chain and disposal procedures has a positive effect on organizational performance, therefore the study recommends that supply chain and disposal procedures policies should be well outlined to enhance transparency in acquisition and disposal of assets.

The study also reveals that supply chain record management has a significant effect on organizational performance. Therefore, study recommends that public organizations should maintain simple but detailed documentation of supply chain documentation system. This will ensures prompt retrieval of documents whenever needed and for auditing purposes to enhance accountability.

The study also finds significance but negative relationship between supply chain code of ethics and organizational performance. Thus, study recommends that, even though it has minimal contribution to organization performance, code of ethics should be adhered to enhanced equality in treatment of supply chain operations.

Lastly, the study found a strong relationship between market price index and organization performance. Thus, study recommends that tenders should be awarded to suppliers whose price quotes are within the market price index to achieve value for money.

5.5 Suggestions for Further Research

The study only analyzed profit oriented state parastatals. Other nonprofit oriented parastatals were not included in the research. Thus for future research, the researcher should try to include all public organizations to have a clear effect of supply chain governance on organization performance. Further the study should also look into other variables that form supply chain governance e.g. government regulations, political ideology, economic status, among others.

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APPENDICES

Appendix II: Research Questionnaire

Introduction

This questionnaire has been designed for the sole purpose of collecting data on the impact of supply chain governance on organizational performance in the public sector. The data collected will be treated with a very high degree of confidentiality and it is meant for academic purpose only

PART I: GE	NERAL INFOR	MATION.
1. Name of M	inistry you work	in
2. What is you	ır position?	
a)	Supply chain ma	nnager
b)	Assistant supply	chain manager
c)	Supply chain off	icer
d)	Other (specify).	
3. Gender		
a)	Male	
b)	Female	
4. How long h	ave you worked i	n this ministry?
a)	0-2 years	
b)	2-4 years	
c)	Over 4 years	
5. Level of Ed	lucation	
a)	O level	
ŕ	A level	
,	University level	

PART II: RESEARCH QUESTIONS

Please circle as appropriate

The following section requires your candid response to the statements made below;

(SD - Strongly Disagree D - Disagree N - Neutral A - Agree SA - Strongly Agree)

A: PROCUREMENT PLANNING

PROCUREMENT PLANNING	SD	D	N	A	SA
Proper planning help in achieving efficiency in the supply	1	2	3	4	5
Procurement planning ensures optimum level of inventory	1	2	3	4	5
Procurement planning helps in managing cost of holding inventory	1	2	3	4	5
Procurement planning helps achieve public confidence and economic development	1	2	3	4	5

B: SUPPLY CHAIN AND DISPOSAL PROCEDURE

SUPPLY CHAIN AND DISPOSAL PROCEDURE	SD	D	N	A	SA
Good supply chain and disposal policies enhances transparency and accountability	1	2	3	4	5
Supply chain and disposal procedures affects cycle time	1	2	3	4	5
Good supply chain and disposal procedure help reduce supply chain risks	1	2	3	4	5

C: SUPPLY CHAIN RECORD MANAGEMENT

SUPPLY CHAIN RECORD MANAGEMENT	SD	D	N	A	SA
Record management helps in accessing crucial information when required	1	2	3	4	5
Record management enhances information accessibility thus planning	1	2	3	4	5
5. Record management reduces the time to allocate suppliers hence reduced cycle time	1	2	3	4	5

D: SUPPLY CHAIN CODE OF ETHICS

CODE OF ETHICS	SD	D	N	A	SA
Adoption of good practices and ethical standard help achieve value for money	1	2	3	4	5
Ethical standards helps in resource utilization	1	2	3	4	5
Good practices and ethical standard enhances open and effective competition	1	2	3	4	5
Adoption of good practices and ethical standard enhances equal treatment of all partners	1	2	3	4	5

E: MARKET PRICE INDEX

MARKET PRICE INDEX	SD	D	N	A	SA
Market price index help in cost control	1	2	3	4	5
Market price index helps in achieving value for money	1	2	3	4	5
Market price index helps in quality enhancement	1	2	3	4	5
Market price index enhances resource utilization	1	2	3	4	5

Thank you

Appendix III: List of Parastatals in Kenya as at October 2013

Agriculture

- ❖ Pest Control Products Board
- ❖ Agricultural Development Corporation
- ❖ Agricultural Finance Corporation
- ❖ National Cereals and Produce Board
- ❖ Coffee Board Of Kenya
- Horticultural Crops Development Authority
- Kenya Dairy Board
- Kenya Forestry Research Institute
- ❖ Kenya Plant Health Inspectorate Services
- **❖** NEW KCC
- ❖ Kenya Marine and Fisheries Research Institute
- Kenya Sugar Board
- ❖ Kenya Sugar Research Foundation
- ❖ Tea Board Of Kenya
- ❖ Tea Research Foundation Of Kenya

Industry

- **\Delta** East African Portland Cement Co.
- ***** Export Processing Zone Authority
- ❖ Industrial and Commercial Development Corporation
- Kenya Airports Authority
- ❖ Kenya Civil Aviation Authority
- ❖ Kenya Electricity Generating Company
- Kenya Ferry Services Limited
- * Kenya Ordinance Factories Corporation
- Kenya Industrial Estates
- ❖ Kenya National Shipping Line
- ❖ Postal Corporation Of Kenya
- ❖ South Nyanza sugar Company
- Telkom Kenya
- ❖ National Museums Of Kenya
- ❖ National Oil Corporation Of Kenya
- **❖** Kenya Pipeline Company
- Kenya Ports Authority
- **❖** Kenya Post Office Saving Bank
- Kenya Railways corporation

Services

- Bomas of Kenya Limited
- Catering and Tourism Development Levy Trustees
- Communication Commission of Kenya
- Export Promotion Council
- Kenya Anti-corruption Authority
- Kenya Broadcasting Corporation
- Kenya Bureau Of Standards
- * Kenya Revenue Authority
- Kenya Roads Board
- Kenya Safari Lodges & Hotels
- Kenya Tourist Board
- Kenya Tourist Development Corporation
- Kenya Utalii College
- Kenya Wildlife Service
- Kenyatta International Conference Center
- National Social Security Fund
- National Co-ordination Agency for Population and Development
- NGO's Co-ordination Bureau
- Public Procurement Oversight Authority
- Sports Stadia Management Board
- Lake Victoria South Water Services Board
- Local Authority Provident Fund
- ❖ National Council For Law Reporting
- ❖ National Environmental Management Authority
- ❖ National Hospital Insurance Fund
- National Irrigation Board

Banking and Financial

- Consolidated Bank Of Kenya
- Insurance Regulatory Authority
- National Bank Of Kenya
- **❖** National housing Corporation
- Co-operative bank of Kenya
- Kenya Commercial Bank
- Capital Markets Authority
- Kenya Bankers Association of Kenya

Education

- Maseno University
- **❖** Moi University
- University Of Nairobi
- University Of Nairobi Enterprises & Services Ltd
- ❖ Teachers Service Commission Commission For Higher Education
- Egerton University
- Higher Educations Loans Board
- ❖ Jomo Kenyatta University of Agriculture and Technology
- ❖ Kenya Accountants and Secretaries National Examinations Board(KASNEB)
- ❖ Kenya College of Communication and Technology
- ❖ Kenya Industrial Research & Development Institute
- * Kenya institute of Administration
- ❖ Kenya Institute of Public Policy Research and Analysis
- Kenya Literature Bureau
- Kenya National Examination Council
- Kenya National Library Services
- **❖** Kenyatta University

Source: GoK (2013)