

**SUPPLY CHAIN PRACTICES, REFORMS AND PERFORMANCE IN THE KENYAN
NATIONAL GOVERNMENT MINISTRIES**

BY

LAWY NYAMUNI AURA

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DECLARATION

This Research project is my original work and has not been presented for a degree award in this or any other institution of higher learning.

Lawy Aura

D61/77772/2015

Signature:

Date:.....

This Research project is submitted for the award of the Degree of Master of Business Administration with my approval as the University Supervisors:

Name: Mrs. Nancy Marika

Signature:

Date:.....

Name: Dr. James Njihia

Signature:

Date:.....

DEDICATION

This study has been dedicated to my family who have been ever present in providing total support to me throughout my study period.

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First, I will like to take this opportunity to extend my great appreciation to the almighty God for His love and gratitude, and more specifically for granting me good health throughout the entire period of my study. I also thank my supervisors **Mrs. Nancy Marika** and **Dr. James Njihia** for their unlimited guidance on the important aspects of my project. Finally, I cannot forget to appreciate the opportunity given to me by the national government of Kenya and the university to complete my second degree program.

ABBREVIATIONS AND ACRONYMS

3PL	Third-party Logistics
CSCMP	Council of Supply Chain Management Professionals
FMCG	Fast-Moving-Consumer-Goods firms
ISO	International Organization for Standardization
PP&ADA	Public Procurement and Asset Disposal Act
SCM	Supply Chain Management
SPSS	Statistical Package for the Social Sciences

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ABSTRACT

In the contemporary environment, the need to streamline supply chain operations in the public sector has become a major focus of many government institutions. As an effort aimed at improving organizational performance, public institutions in Kenya have shifted a concentration to modern practices following the reforms that have been enacted since 2005. This study sought to identify the commonly used supply chain management practices and reforms, and their influence on supply chain performance of ministries in Kenya. The study employed qualitative and quantitative research designs. The study also utilized the opinions of 54 respondents who were selected through census method. The collection of data was based on the primary data sources, specifically questionnaires. The data from field work was cleaned, coded and analyzed using SPSS 20, and then presented in form of tables and figures. The common supply chain practices applied in Kenyan ministries include use of information technology, partnerships, outsourcing, tendering, distribution and logistics, inventory control, and lean base reduction. Over the past decade, findings indicate the ministries have made a number of reforms that relate to their supply chain systems such as the introduction of e-government, ISO standards, and service delivery charters, among others. The findings agree with previous studies that supply chain practices and reforms do, though not significantly, affect the supply chain performance in Kenyan ministries.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Organizational survival has become highly difficult since the beginning of the 21st century, largely owing to high competition among local and international firms.. Today, outsourcing, globalization, and information technology have seen to it that organizations operate successfully together to collaborative supply chain networks where each specialized firm focuses on few vital strategic activities. Most private and public organizations have now directed their efforts towards improving the performance of their supply chain systems to achieve competitiveness by elevating the extent of their effectiveness and efficiency (Hughes &Wadd, 2012). Organizations must overcome the challenge of successful implementation of proper supply chain management initiatives to achieve effectiveness and efficiency. (Grozni&Trkman, 2012).

In the Kenyan Public Sector the SCM practices have undergone various reforms which have impacted the quality and cost of service delivery to the consumer, in this case, the citizens. The Government of Kenya has undertaken reforms to enhance transparency, accountability and prudent management and utilization of resources. Prior to 2005, the SCM's function in the public sector was guided by the Treasury Circulars and Manuals which had no legal basis. A key milestone was achieved in 2005 when the SCM practices and procedures in all entities in the public sector were brought under a legal regime by enacting the Public Procurement and Disposal Act 2005 and Regulation 2006 (Thuo&Njeru, 2014). In 2010 when the Kenyan constitution was promulgated under article 227, it was required that an Act of Parliament should prescribe a

framework within which all SCM practices and procedures will be implemented. Hence the enactment of Public Procurement and Asset Disposal Act 2015.

1.1.1 Supply Chain Practices

The SCM practices have undergone various reforms that have a relationship with the level and quality of service delivery to the public in the provision of goods and services. Common supply chain management practices include tendering, outsourcing, inventory control, distribution and logistics, use of information technology, lean supplier base reduction and partnerships (Mwilu, 2013).

Public Sector SCM in many countries differs from each entity and from sector to sector. While the Health sector may focus its SCM functions on logistics and distribution of goods and services in and out of health facilities for example hospitals and dispensaries, in the Water sector the focus would be on environmental dictates such as weather and the people's production activities for example sedentary, agriculture and pastoralism. The Education sector for example will focus on streamlining the supply chain through which the teaching materials should reach the consumers (learners).

The SCM in the Public Sector may be inbound following the operational requirements of internal customers and may also be outbound where the entity provides services and goods to the citizens. In most cases the Public Sector SCM practices have a combination of inbound and outbound activities (Markman& Krause, 2014). Thus where goods are delivered from the private sector to the entity the supply chain activities are inbound to support the operational objectives like provision of office furniture and stationery. It is outbound when the entity directly supports the need of the Public like medication for the citizens and provision of water to the public.

1.1.2 Supply Chain Reforms

Governments in many parts of the world are increasingly becoming sensitive to customer satisfaction, particularly on issues of service delivery. Over the past two decades, supply chain practices in the public sector has undergone tremendous transformation in the quest to improve the quality of service delivery. Most governments have been carrying out public financial management reforms in order to enhance transparency, accountability and prudent utilization of public resources so as to improve service delivery. A major component of this reform has been in the area of supply chain management. The focus has largely been on reforms such as e-Government, Rapid Results Initiatives, values and ethics, institutional capacity, service delivery charters, and ISO Certification (Mumbi, 2012).

1.1.3 Supply Chain Performance

Supply chain performance has taken a central stage in the contemporary organization processes, systems and management. Supply chain performance goes beyond organizational boundaries to touch on issues within the value chain, including basic materials, subassemblies and finished products, and distribution channels that avails products to the end user. Supply chain performance metrics lays emphasis on quality, service delivery, customer satisfaction, sustainability, lead time and cost minimization.

1.1.4 SCM in the Kenyan public sector

The Public Sector in Kenya refers to the respective entities whose activities are funded by the Exchequer from the National Treasury. While some Public sector entities generate their revenue, such receipts must be accounted for by the National Treasury and are therefore treated as Exchequer Savings. The main difference between the public and private sectors is that while the private sector supply chain management is more flexible, driven by innovations and profits as

governed by the company's individual policies and strategies, the public sector supply chain management is more routine, transactional and always as a means to an end due to regulations and strict procedures. Public sector supply chain management is often driven politically and risk of challenges is not seen as a serious concern. Use of public resources to achieve Government objectives is a major feature of Public sector supply chain management in Kenya. The Kenyan public sector supply chain management is currently regulated by the Public Procurement and Asset Disposal Act 2015, which is aligned to both the constitution and Vision 2030 (Kenya Constitution 210 sec – 22).

SCM Public Sector practices in Kenya prior to the introduction of key reforms in 2005 was majorly coordinated by the district and central tender committee, which comprised of the district tender board and central tender board. The former was primarily tasked with the responsibility of approving all goods and services of a given set value provided by any department in a district while the latter procured all tenders of all ministry headquarters for a given value under the National Treasury.

Framework contracts also formed an integral part of conventional supply chain management practices in Kenya. Under these contracts, all common user materials, for example, office equipment/stationery were to be procured centrally by the Ministry of Works-Supplies Branch for all the Government departments. Other main features of the traditional supply chain practices included annual disposal of obsolete goods, non-structured dispute resolution mechanisms, undesirable inventory management practices, poor inspection of goods and services, and

1.2 Research Problem

The strategic importance of supply chain management in the public sector in Kenya is not well understood. The organization structures and systems within the supply chain management are not

ideal and until recently the supply chain management in Kenya were manned by inexperienced and /or underskilled leadership, high staff turnover and lack of motivation. There has been lack of clarity about rules and responsibilities of technical staff; political appointees and non supply chain practitioners which creates scope for interference, thereby giving rise to instances of corruption until the enactment of the Public Procurement Laws (Kazi, 2012). There have been no consequences for those who fail to perform in the required level. Policies and regulations are often confusing and cumbersome. In addition, fragmentation of processes and systems makes supply chain management compliance difficult in the public sector. The importance of supplier management has been underestimated in addition to limited understanding about how public sector decisions and actions affect the overall business environment.

Globally, various studies have been undertaken to show the strategic importance of supply chain management in private sector but very little has been done to ascertain the contribution of the supply chain management in the public sector. Kazi (2012) confirm that not much has been done in comparison to supply chain management in the private sector. Most of the literature focuses on the private sector transactions and international organizations since these organizations have been using supply chain management for almost two decades. The promise that supply chain management holds strategically in enhancing public sector service delivery has been identified by various Governments who are operating professionally. Omonge (2012) has argued that the supply chain management in public sector raises several issues that require further research.

Just as it is globally, there has been very limited studies in the public sector supply chain management in the public sector. Most of the studies have been mainly in the private sector for instance, Omonge (2012) and Kazi (2012). This study therefore sought to answer the question:

what are the commonly used supply chain management practices and reforms in Kenya, and how do they influence supply chain performance in the Kenyan public sector?

1.3 Objectives of the Study

The general objective of this study was to survey and investigate the supply chain management practices, reforms and their impact on supply chain performance in the Kenyan public sector.

Specifically;

- i. To ascertain the major supply chain management practices in the Kenyan ministries.
- ii. To identify the supply chain reforms that has been introduced into the ministries in Kenya.
- iii. To examine the state of supply chain performance in Kenya ministries.
- iv. To examine the impact of supply chain management practices and reforms on supply chain performance in the ministries.

1.4 Scope of the Study

This study focused primarily on the supply chain practices that have been adopted by the Kenya National Government Ministries, the supply chain reforms that have taken place in Kenya and how such reforms have influenced the performance of the SCM. The current study was only limited to the 18 ministries that falls within the Kenya National Government Headquarters that are concentrated within Nairobi County. The proposed study took place within the month of October 2017.

1.5 Significance of the Study

The findings and recommendations presented in this study will provide a valuable basis for future researches in this line of study since it is expected to add valuable knowledge to the existing

literature on supply chain performance. Besides, supply chain management as a function is the largest consumer of Public Funds from the exchequer through goods, works and service procurements. To investigate the supply chain management practices, reforms versus performance will form the justification and basis for continued budget allocation. It is expected that this study findings generate knowledge and understanding of supply chain management in the public sector in Kenya. The study has also brought out the areas that require further reforms in the supply chain management public sector and the establish the relationship between specific practices, reforms and expected deliverables (goals).

1.6 Organization of the study

This study consists of five sections. The first section provides readers with a useful understanding of the study background, research problem, objectives and its scope and significance. Provided in section two is an in-depth review of the underlying literature that relates to the current research topic. This part forms the basis for the next chapter that deals with the methodology of the study. This, specifically, consists of the research design used in the study, target population, sampling techniques, techniques of data collection, and analysis, and research ethics. The four section details the study findings derived using relevant statistical methods. This chapter majorly contains discussions on findings presented in tables and charts. The last section provides a summary and conclusions on findings presented in chapter four. This section also details the key recommendations for improvement, identifies study limitations and areas for further studies.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

In the views of Cook et al. (2014), supply chain practices do not only improve the performance of the organization but also enable it to overcome the challenges of the global markets to remain competitive. Given the dynamic nature of competition between companies and constant shifts in the consumer demands, they have to align their supply chains with market changes. The study of the global supply chain starts with an intensive review of the national one as every nation is affected by changes in the international market, and Kenya is no exception. In this paper, the author examined supply chain practices and reforms with the sole focus on how they influence public sector performance in Kenya.

2.2 Theoretical Perspective

A good research should be grounded in theory. Theory is central to the scholarly credentials of any discipline. The progression of the public procurement field is just as evident outside academic circles. In political and policy arenas, public procurement is now linked to concerns over economic growth, social inclusion, and environmental sustainability. Central to the upward trajectory of public procurement, there has been two-way communication between research and practice. While there has been a regrettable trend in many disciplines to divorce themselves from the everyday concerns of business practitioners and privilege theoretical and methodological consistency over all, public procurement has made a virtue out of constructively engaging with practitioners and addressing their interests.

The institutional theory is the traditional approach that is used to examine elements of public procurement. According to Scott (2004), institutions are composed of cultural-cognitive and regulative elements that, together with associated activities and resources give meaning to life. The author explains the three pillars of institutions as regulatory, normative and cultural cognitive. The regulatory pillar emphasizes the use of rules, laws and sanctions as enforcement mechanism, with expedience as basis for compliance. The normative pillar refers to norms (how things should be done) and values (the preferred or desirable), social obligation being the basis of compliance. The cultural cognitive pillar rests on shared understanding (common beliefs, symbols, shared understanding). In Kenya, public procurement is guided by the PPDA Act (2007), regulations and guidelines which are from time to time issued by the PPDA only and which must comply with the latter by all PPOA and providers. The purpose of this Act is to establish procedures for procurement and the disposal of unserviceable, obsolete or surplus stores and equipment by public entities to achieve efficient management of public funds.

Sutinen and Kuperan (1999) advocated the socio-economic theory of compliance by integrating economic theory with theories from psychology and sociology to account for moral obligation and social influence as determinants of individuals' decisions on compliance. According to Lisa (2010) psychological perspectives provide a basis for the success or failure of organizational compliance. Wilmshurst and Frost (2000) also present the legitimacy theory which postulates that the organization is responsible to disclose its practices to the stakeholders, especially to the public and justify its existence within the boundaries of society. This theory, which focuses on the relationship and interaction between an organization and the society, provides a sufficient and superior lens for understanding government procurement system (Hui et al., 2011). From this theory, the perceived legitimacy of public procurement rules has been identified as one of the antecedents of public procurement compliance behavior.

In the analysis of public procurement, including innovative public procurement, a useful point of departure in mainstream economics is auction theory. In such a perspective public procurement is treated as a game in which the buyer and the supplier each try to make advantage of the other's weaknesses. The supplier's supposedly superior knowledge stands against the buyer's advantage in being in control over the actual design of the auction rules. Applying this perspective to a regular procurement process is a quite straightforward analysis: The lowest bid to meet the specifications should automatically be awarded the contract.

However, in the case of non-regular public procurement, i.e. innovative public procurement, the conditions are not the same as in regular procurement. One central point is for instance, that the buyer probably holds knowledge of crucial importance about the product about to be developed that needs to be shared with the supplier. In contrast to mainstream economics, innovation theory treats public innovative procurement as a special case of user-producer interaction. This means that the process is not regarded as the result of anonymous market process as a mainstream economics perspective would suggest, but as the result of user- producer co-operation and information sharing (Lundvall, 2012). This understanding is also emphasized in the systems of innovation literature; where innovation is a complex and interactive process influenced by many factors and due to these characteristics, firms almost never innovate in isolation. Thus, the central activity within the system is learning and learning is a social activity, which involves interaction between people (Lundvall, 2012).

2.3 Supply Chain Practices

This section critically examines the key supply chain practices among public sector organizations in Kenya.

2.3.1 Tendering

Tendering refers to the process through which companies invite suppliers to provide them with raw materials, components, labor, and products, among other factors that they use for production or running other operations. The aim of using tender systems is to create profound, transparent and fair competition between suppliers to ensure value for the money that companies use in acquiring factors of production or goods for sale from other companies and individuals. In two studies conducted on the importance of public procurement in Kenya, Ngugi&Mugo (n.d.) held that procurement plays an integral in the country's public sector, while Odhiambo&Kamau (2003) supported that factor by stating that Kenya's public procurement constitutes nearly 8% of the Gross Domestic Product (Odhiambo&Kamau, 2003).

2.3.2 Outsourcing

Also referred to as "employing other companies," outsourcing is the process through which a company transfers some production duties to other firms (particularly suppliers) to save cost of completing it internally. For example, it could strike a deal with another company to contract-out some of its internal activities to another organization if such an agreement requires fewer resources than undertaking the same responsibilities within the company. Outsourcing could involve transferring business processes such as payroll and claims processing; non-core; or operational functions such as call center support, facility management, and manufacturing (Strassmann, 2006). Although it is primarily used as a strategy for saving cost of production or operation, outsourcing also helps the company focus on the fundamental business aspects.

2.3.3 Distribution and Logistics

Distribution and logistics are some of the most significant aspects of a company as they help the management carry out almost all the organizational operations. In particular, they help the company order and manage inventory, cut costs of production and operation, improve time management, meet company goals and objectives, and control both outbound and inbound shipments, among other activities that ensure meeting of customer demands. Given the direct involvement of people in carrying out distribution and logistics, their success is dependent on the company recognizing the value of its employees in the overall corporate structure. In Kenya, almost all FMCG widely use 3PL to distribute their products within and outside the country (Njambi&Katuse, 2013).

2.3.4 Partnerships/Alliances with Suppliers

With the highly changing technological advancements forcing businesses to operate in a challenging economic sphere, a shift in companies' perspective towards both suppliers and their roles could prove helpful in many ways. For example, the change would become integral to the company's need to reconcile its balance sheet with the long-term goals. Day (2014) holds that a company should foster its relationship/alliance with the suppliers in line the 3-level hierarchy outlined in "Slow Down, Sell Faster" by Davis Kevin (Day, 2014). In other words, the company should view its suppliers as approved vendor (provider of services or products at competitive prices), valued consultant (shares knowledge and exchanges information with the company), or strategic partner (long-term partner and members of the company).

2.3.5 Use of Information Technology

Prajogo&Olhager (2012) argue that information technology capabilities, particularly those that allow sharing of data directly influence the integration of logistics into the long-term relationships between the company and its suppliers. That factor also implies that the use of information technology in supply chain practices and reforms influence the company performance in one way or another. The advancements of information technology and their continued in supply chain activities enhance the flow of information between the organizations of the supply chain members. They also prove helpful in the coordination of the activities of managing the company's supply chain. In Kenya, the use information technology in supply is highly and widely embraced by the large manufacturing companies (Jela, 2013).

2.3.6 Lean Supplier Base Reduction

According to Sarkar &Mohapatra (2006), the development of partnerships between the company and its suppliers continually proves to be a potent strategy for improving the supply chain. For a company to foster a productive partnership, it needs to reduce its supply base to the level that it can easily manage. The need to carry out lean supplier base reduction also bodes well with the fact that the supply base is directly proportional to the volume of resources required for supporting supplier visit, development, and request for quotations. In other words, reducing the supply bases minimizes the use of resources.

2.3.7 Inventory Control

Just as CSCMP et al. (2014) points out, inventory control (particularly managing vendor and customer relationships) plays an integral in the overall management of the supply chain. Although the concept of collaborative alliances between the company and its stakeholders is

considered crucial in managing the company supplies, a review of these relationships reveal that they are entirely based on the inventory storage and movement. Nearly all the operations involved in managing the relationships between the organization and its stakeholders are dependent on the management, purchase, or of transfer inventory (CSCMP, et al., 2014). Most importantly, inventory control facilitates the balancing of supply and demand, which is the primary aspect of any supply chain structure.

2.4 Supply Chain Reforms in Kenya

Detailed therein are the common supply chain reforms that have been adopted in Kenya since 2005.

2.4.1 e-Government

The concept of e-Government in the context of supply chain reforms in Kenya refers to the electronic (internet/online) advancements used in supply chain activities. In a research to study the effects of e-procurement, Kimutai (2015) argued that some of electronic reforms used in the Kenyan supply chain management include e-procurement, e-tendering, e-invoicing, and e-payment (Barngetuny&Kimutai, 2015). The development of e-Government does not only phase out the past scandalous issues and matters of indignity that have tarnished the procurement system of Kenya, but also opens new avenues on which more information technologies is used in the general supply chain activities. At the same time, e-Government allows the integration of more technologies into the country's supply chain practices and reforms. Specifically, the Integrated Financial Management Information Systems is used in public sector budgeting, procurement planning, sourcing, invoicing and payment for goods and services delivered.

2.4.2 Values and Ethics

With other areas of supply chain management improving, its ethical aspects have also followed the suit. Ayoyi&Mukoswa (2015) argue that the Kenya's public procurement system have evolved from being a mechanism that operates without regulations and rules in the 1960s, to a structure run by Treasury Circulars as was the case from 1970s to 1990s. the latest developments in this field include the emergence of the PPDA and Procurement Regulations that took place in 2005 and 2006, and PP&AD 2015 respectively (Ayoyi&Mukoswa, 2015, p. 2). Since the changes in the supply chain management moved in line with the values and ethical factors surrounding it, future reforms are likely to follow the same path.

2.4.3 Institutional Capacity Building

Matowe (2015) observed that the reforms in supply chain management should also involve capacity building. He argued that the technical assistance to SCM needs to improvise new measures for managing data for both service and product supplies in a bid to improve both forecasting and delivery of supply chain activities. I concur with his assertions that current measures for capacity-building in SCM tend to rely on training and workshops (Matowe, 2015). Although such approaches build individual skills of individual and organization, they tend to overshadow the fact that skills alone cannot cater for all the parameters required to build an organizational capacity that can promptly function for a long period on a consistent basis. With the Kenyan SCM undergoing various reforms, the policy makers should consider Matowe's views.

2.4.4 Service Delivery Charters

Just as the national services charter points, the Kenyan customers have expectations that companies and the business sector in general is mandated to meet. For that reason, the Kenyan supply chain management should align its services charters to the changes and expectations of the customers. In addition to that, the need to incorporate the core values of the national service charter. In particular, the supply chain management reforms should design service charters that follow accountability, integrity, humility, professionalism, independence, and openness. In a study to highlight the progress of Kisii Level 5 Hospital in implementing the national service charter, Obegi&Okibo (2013) found that the Hospital faced various challenges (Mang'era&Bichanga, 2013). Since this factor could be a reflection of the struggles other top institutions face in implementing their service charters, then the reforms in this area should target such drawbacks.

2.4.5 ISO Certification

Whether small or large, companies look for the best ways of dealing with the ever growing demand for quality, profitability, and technological advancements that ensure sustainability of their operations. For the organizations looking to use such pressures to gain a competitive advantage over the others, developing a supply chain tailored to the inflow and outflow of resources and can be used to improve the overall performance of the company is a must do (Kenya Bureau of Standards , 2017). It is for that reason that all SCM reforms target the use of ISO Certification as it allows the development of performance standards and processes that meet and measure the challenges facing the existing supply chain practices.

2.5 Supply Chain Performance

Supply chain performance within the Kenyan public sector is premised on the following metrics.

2.5.1 Quality

In a study to examine supply chain performance, Sparta Systems (2017) argued that improving quality in the supply chain requires the company to investigate more than one aspect. The management needs to expand supplier assessments, design better measurement programs, cut out all the quality loops with suppliers, and invest in infrastructure as well as improvise strategies that ensure transparency of the supply chain. These measures improve company's supply chain performance as they limit exposure to potential cost increase and quality incidents that can negatively affect both the brand reputation and profits of the organization. For that reason, improving supply chain performance should start with doing the same to its quality.

2.5.2 Service Delivery

The service delivery system is diverse and involves different parameters such as service culture, employee engagement, service quality, and customer experience. For a company that strives to improve supply chain performance, boosting the service delivery system is mandatory. In most cases, the management fails to address some aspects of the service delivery system which affects the performance of its supply chain in more than one way. An example of such a case is the study by Wadongo et al. (2010) which found that most Kenyan hospitality managers focus on result and financial measures of performance while leaving out the determinant and non-financial ones.

2.5.3 Customer Satisfaction

The performance of a supply chain is measured against customer satisfaction. For example, a company that imports products from another country and distributes them to its retail stores in

time is still considered to have unsuccessful supply chain if the customers do not get those products when they want (Brown, 2016). For that reason, an organization that strives to improve its supply chain effectiveness should track both the traditional metrics of how it treats the customers as well as explore other dimensions for enhancing customer satisfaction. Examples including taking track records of the customers who visit it on each day, the worth of every individual customer, the areas of business that record the most complaints, and the common reasons that have prompted some customers to leave.

2.5.4 Sustainability

Sustainability plays an integral role in a company's supply chain performance as it is aligned with the growing need for organizations to integrate environmentally sound measures in their supply chain management (Meinlschmidt, et al., 2013, p. 176). Since Kenya is one of countries lagging behind in the matters of environment management, integrating sustainable sustainability into the national supply chain would help many companies cut risk, environmental, and waste costs. One of the measures that they can use in this area is sustainable procurement, with which most companies in the country can purchase and make investments in processes that consider the social, environmental, and economic impacts of their operations.

2.5.5 Lead Time

Lead time is the central factor that influences the performance of any supply chain, meaning that the success of a supply chain depends on how best the company manages the lead time. The longer the lead time, the more inventories the company will need, and that such a move comes with a huge of suffering shortages (Total Excellence Manufacturing, 2017). For a country whose companies heavily rely on outsourcing and importation, the effects could even cause the closure of some entities. Almost all Kenyan companies need to reduce their lead times to boost their

supply chain performance. For example, they need restructure their value stream maps to have a better grasp of how their lead times work as well as reduce it.

2.5.6 Cost Minimization

The best aspect of cost minimization is that it does not only boost the performance of the company's supply chain but also its overall operations. For starters, the company should improve the customer service by shaping the supply chain structure and strategy in line with the customers' requirements. In most cases, managers use tactics to drive strategy, and strategy to objective, but this approach is wrong as it does not improve supply chain performance (Estampe, et al., 2013). Instead, they should take a reverse approach to maximize the effectiveness of their supply chain. In other words, company needs to understand the needs of their customers and develop strategies that guide their supply chain in promptly handling them.

2.6 Supply Chain Practices, Reforms and Performance

In a study to examine how firms can use supply chain management and responsiveness to competitive advantages, Thatte (2007) pointed out that the modern business environment is more competitive and global than the past years. Some of the factors that have brought such changes are rapid introduction of new products; availability of products with shorter life cycles; and the well informed, sophisticated, and increasingly knowledgeable customers. Unless companies improve the responsiveness of their supply chain, they are likely to struggle dealing with these market forces. For that reason, modern supply chain is expected to show effective, rapid, and efficient response to the marketplace changes to gain and sustain competitive advantage.

Better understanding of the relationship between the practices and reforms of supply chain and organization performance in Kenya, one has to review the past research on the same topic. One of such studies is the Mogire Eric's report on the use of the SCM (Supply Chain Management)

practices in five star hotels in Kenya. He found that almost all the top hotels in the country do not fully integrate SCM practices into their operations as they only seem to align them with the top management duties (Mogire, 2007).

Another study on this area is the one Orukoh conducted on how the Numerical Machining Complex Limited uses SCM practices. According to his findings, Orukoh (2007) stated that the firm had not established collaborative partnership with its suppliers. This factor prompted the researcher to recommend Numerical Machining Complex Limited to continue improving its management of supply chain through strategic practices. He proposed that the company should consider fostering continuous improvement, building competitiveness, corporate culture and proper quality control, and ensuring effective communication (Orukoh, 2007). A review of these two studies, among other research on the influence the practices and reforms of supply chain on organizational performance, reveal that little work has been done on this area. Not only does this factor highlight the relevance of this study, but also calls for further research.

An intensive review of literature on supply chain practices reveal that they influence the company performance in more than one way. Schaltegger and Burritt (2014) demonstrates that the management often designs the supply chain in line with the both short-term goals and long-term objectives of the company to improve its performance. At the same time, the supply chain practices help the firm gain a competitive advantage if they meet or surpass all the expectations of which they are established (Schaltegger and Burritt, 2014). Just as the Section 2.3 (Supply Chain Practices) of this paper outlined, this research covered 7 Supply Chain activities. They include Tendering, Outsourcing, Distribution and Logistics, Partnerships/Alliances with suppliers, Use of information technology, Lean supplier base reduction, and Inventory control. Although they play different roles in the fostering the supply chain of the company, these

practices contribute to the overall organizational performance. For example, inventory control facilitates the balancing of supply and demand, which is the primary aspect of any supply chain structure; while reducing lean supplier base allows it foster productive partnerships with its suppliers.

Unless the company uses information technology, it is likely to struggle handling informational needs of the company. Integrating information technology in its supply chain practices enable the firm coordinates the activities of managing its operations (Qrunfleh&Tarafdar, 2014). Profound partnerships/alliances with suppliers, on the other hand, help the company reconcile its balance sheet with the long-term goals (Mogikoyo et al., 2015). Other supply chain practices that improve organizational performance are distribution and logistics. They help the company order and manage inventory, cut costs of production and operation, improve time management, meet company goals and objectives, and control both outbound and inbound shipments, among other activities that ensure meeting of customer demands (Prajogo et al. 2016; Wu et al., 2014). With the help of outsourcing, the company can save production and operation cost, and focus on the fundamental business aspects. Lastly, tendering help the firm create profound, transparent and fair competition between suppliers to ensure value for the money that companies use in acquiring factors of production or goods.

The primary need for reforming supply chain is to improve its performance as well as the overall organizational performance. A review of this research reveals several supply chain reforms, including the emergence of e-Government, values and ethics, institutional capacity building, service delivery charters, and ISO certification. Although these measures play different roles in improving supply chain practices, they also contribute to the overall performance of the company in different ways. For example, ISO certification allows the company develops performance

standards and processes that meet and measure the challenges facing the company (Shen et al. 2013). On the other hand, the use of service delivery charters integrate accountability, integrity, humility, professionalism, independence, and openness in its operations.

With the help of institutional capacity building, the management improvises new measures for managing data for both service and product supplies in a bid to improve both forecasting and delivery of company processes (Yadav & Barve, 2015). In addition to that, it creates ample room for the company to introduce new ventures, or even expand the existing ones. In the literal sense, capacity building means creating more room, which could be evaluated through both practical and qualitative measures. The additional “space” (or activities) allows the company to either introduce or extend the new or existing ventures, respectively. Values and ethics do not only give the direction but also the manner with which the company can align its strategies and activities (Kirwan et al., 2017). That is to say that the company needs and use them to improve its overall performance. Lastly, the emergence of e-Government has introduced several technological platforms through which companies can align their operations with the set goals and objectives.

2.7 Summary of Literature review and research gaps

A number of studies have clearly shown that supply chain practices and reforms in Kenya over the past decade have undoubtedly played a key role in determining level of supply chain performance among organizations within the Kenya Public sector. This has been achieved majorly through the creation of a balance between supply and demand for public sector services, easy coordination of organizational activities, effective reconciliation of organizational balance sheets with long-term goals, quick access to information, and standardization of organizational processes and procedures. In spite of the efforts on the Kenyan public sector entities, most of these studies have laid emphasis on state corporations and public hospitals while overlooking

supply chain performance in the ministries. Besides, previous studies have extensively examined some supply chain practice such as inventory control and lean supplier base reduction.

2.8 Conceptual Framework

A conceptual framework shows a diagrammatic relationship between dependent and independent variables in the study (see figure 2.1).

Independent variable

Dependent variable

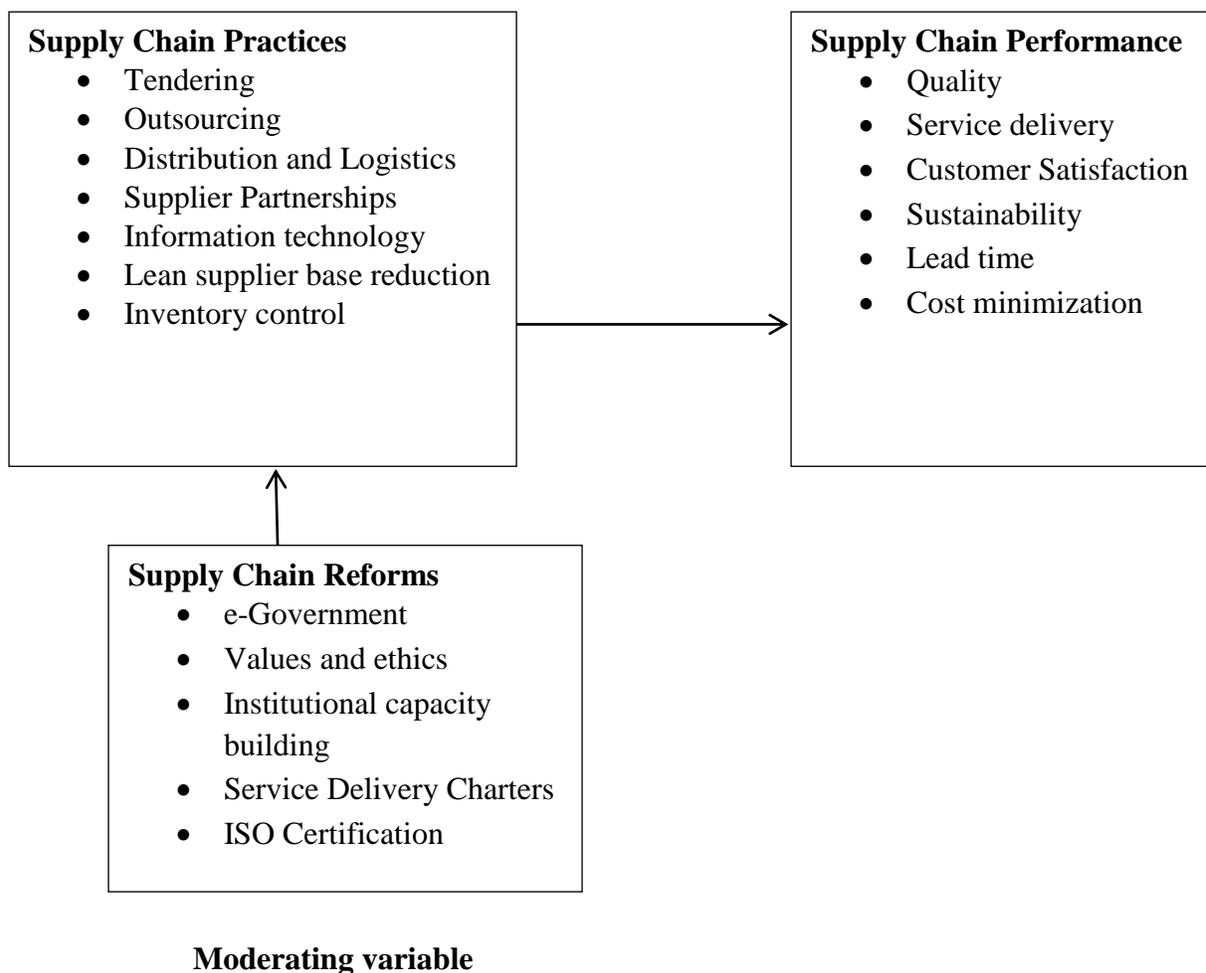


Figure 1: conceptual framework

CHAPTER 3

METHODOLOGY

3.1 Introduction

This chapter details the procedures, tools and methods that were used in collecting, analyzing and presenting data.

3.2 Research Design

A research design is a procedural plan employed by researchers aimed at providing answers to the underlying research question economically, accurately, objectively and validly. The research design helps in the identification and creation of logical arrangements and procedures needed to carry out the study. Besides, the research design also helps in stressing on the need to uphold quality during the research process. The current study employed both the quantitative and qualitative research designs owing primarily to the existence of both qualitative and quantitative phenomena in the study.

3.3 Population

The target population comprised of top and middle level officers in the ministries' supply chain and procurement department. The study intends to draw data from the 18 ministries in Kenya that falls under the Kenya National Government.

3.4 Sampling

Owing to the small number of units in the target population (18 ministries), the present study adopted a census sampling method. This entailed a complete enumeration of all the subjects in the study. In this context, the research data was derived from all the 18 ministries in Kenya. Here, top and middle level managers from each ministry's supply chain and procurement department

were sought out to provide reliable information used to provide solution to the research question outlined in chapter one. The study gathered data from a total of 54 professionals from the 18 ministries (3 respondents per ministry).

3.5 Data Collection

The quality of the study results depends largely on the method of data collection. From a general perspective, data can either be collected using primary or secondary data collection approaches. The study used primary data sources. Primary data collection method is usually applied when the researcher strives to obtain raw data from the respondents. This method is highly applicable to this study since it seeks information relating to the respondents' knowledge, perceptions and personal opinions. Questionnaires were used to obtain data from the underlying primary sources. The questionnaires comprised of structured and open ended questions with score that are based on the likert scale (see the appendix). The distribution of questionnaires was done using hand delivery and emails.

3.6 Data Analysis

Before the analysis is done, the raw data from research questionnaires was undertaken through data cleaning before it was coded and set for analysis. The study adopted both quantitative and qualitative data analysis techniques. Relevant statistical tools were used to analyze quantitative data. These ideally included SPSS and excel data analysis tool kit. On the other hand, the researcher employed context analysis when analyzing qualitative data. The results of quantitative data analysis were presented in form of charts, tables and graphs. As part of quantitative analysis, the study used descriptive statistics to arrive at the data frequencies and measures of central tendencies. Regression analysis was also used to determine the direction and degree of association among the variable under study. Regression analysis was based on the following equation:

$$Scf = \beta_0 + \beta_1 Rf_i + \beta_2 SCP_j + \varepsilon$$

Where:

Scf – *Supply Chain Performance*

β_0 – *Constant*

β_1, β_2 , – *Regression Coefficients*

Rf_i – *Set of supply chain reforms*

SCP_j – *Set of supply chain management practices*

ε – *Error Term*

3.7 Research Ethics

In any study, ethics forms an important part of the research process. Ideally, research ethics entails the application of ethical principles to a wide range of research topics, particularly within the context of social and scientific research. The present study strived to maintain high ethical standards. Therefore, before carrying out the study, each participant was compelled to carefully read and understand a set of ethics that guide social research. They were also required to sign contracts that they agree to live up to the set ethical standards. This act is believed to have helped to support the researcher-participant relationship, research integrity and as well safeguard institutional rights. Emphasis was also stressed on the need to avoid research misconducts such as data fabrication, plagiarism and falsification during the study (Garner and Scott 2013).

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSIONS

4.1 Introduction

This chapter presents a comprehensive analysis and interpretation of findings of the study that were based on the data gathered from the target populations comprising of top and middle level personnel in the ministries' supply chain and procurement departments. In making the analysis, researcher maintained a response rate of 100% by primarily replacing all non-respondents with others who were willing to participate in the study.

4.2 Demographic information

This section details the respondents' key background information including their gender, age, job position in ministries and specialization. This information is undoubtedly crucial since it provides the researcher with a useful insight into understanding the respondents' views about the research objectives.

Table 1: Participants' age

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid				
Below 30	1	1.9	1.9	1.9
31-40	16	29.6	30.8	32.7
41-50	24	44.4	46.2	78.8
51-60	11	20.4	21.2	100.0
Total	52	96.3	100.0	
Missing				
System	2	3.7		
Total	54	100.0		

Source: Field data

Statistics reveals that 59% of those who participated in the study were male while the rest were female. Equally, most of the participants cited to have been aged between 41-50 years. Only one participant involved in the study was below 30 years (See table 1). Since the retirement age of public servants is pegged at 60 years, one participant reported has been aged over 60 at the time of the study. Due to the sensitive nature of the question, two people failed to respond.

The analysis indicates that only 17% of the respondents occupied top management positions in the ministries. The rest (44 respondents) worked at the ministries' middle level positions. A large proportion of those reported to have been working in top management positions were male. The statistics further indicates that most male and female respondents at the top management positions were aged between 51-60 years (see table 2).

Table 2: Job level by age and gender

Gender		Job level			Total	
		Top management	Middle management	Missing		
Male	Age	31-40	0	4	1	5
		41-50	1	17	0	18
		51-60	6	2	0	8
		Total	7	23	1	31
Female		Below 30	0	1	0	1
	Age	31-40	0	11	0	11
		41-50	0	6	0	6
		51-60	1	2	0	3
		Total	1	20	0	21

Source: Field data

From the study results, it is apparent that most respondents were specialists in procurement (74%) and inventory management (15%). Evidence, further, indicates most employees in procurement and supply chain departments of Kenya’s ministries had very little interest or knowledge in logistics, contract management and disposal. Figure 2 provides a summary of the respondents’ job specializations.

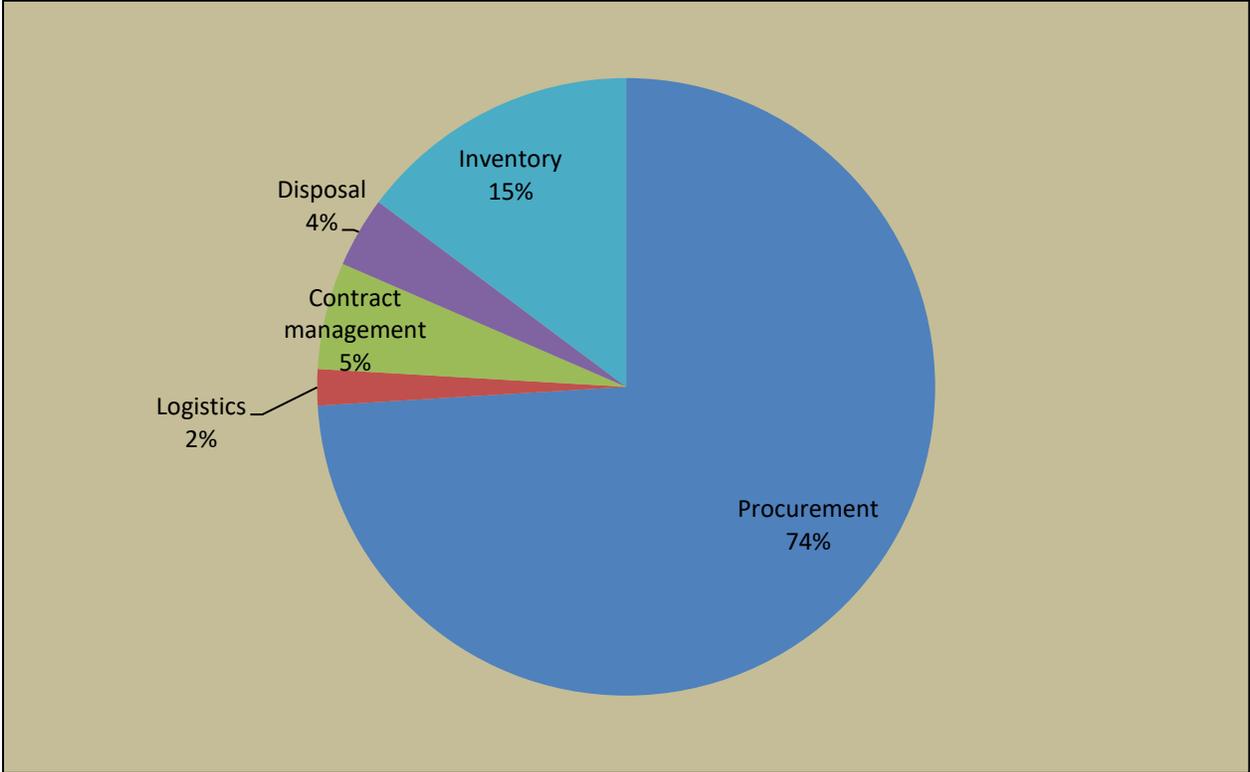


Figure 2: Respondent’s job specialization

Source: Field data

As indicated above in figure 2, both male and female respondents have considerable experience (specialization) in procurement largely due to the general nature of the public sector procurement and supply chain activities, which largely lay focus on procurement and tendering. It can also be observed that majority of those who specializes in procurement work at the ministries’ as middle level managers (see table 3).

Table 3: Specialization by job level

		Specialization					Total
		Procurement	Logistics	Contract management	Disposal	Inventory	
Job level	Top management	7	1	0	0	1	9
	Middle management	32	0	3	2	7	44
	Missing	1	0	0	0	0	1
Total		40	1	3	2	8	54

Source: Field data

4.3 Major supply chain management practices

As noted in many studies, the nature and quality of supply chain practices of an entity plays a significant role towards the success of its supply chain strategies, which in turn contributes towards better supply chain performance. In determining the supply chain practices that are commonly used in ministries, the respondents were asked to select their ministry's preferred practices from a list of practices, which comprised seven main supply chain practices: tendering, outsourcing, distribution and logistics, use of information technology, adoption of lean supplier base reduction activities, and formation of supplier chain collaborations or partnerships with suppliers. Figure 3 provides a summary of the extent with which the ministries engage in activities associated with the underlined supply chain practices.

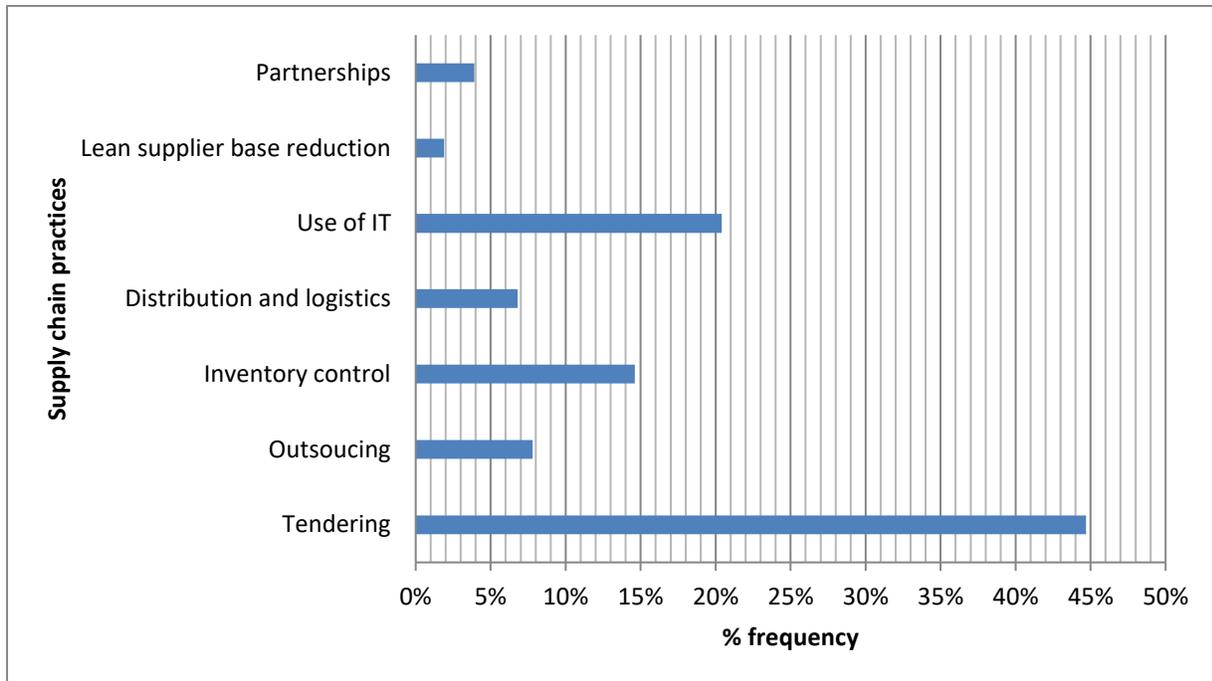


Figure 3: Key supply chain management practices in ministries

Source: Field data

As clearly evident, tendering is the most used practice among ministries. The analysis reveals that most Kenyan ministries frequently engage in tendering activities as cited by 45% of the respondents. This is primarily because; as opposed to the private sector, the public sector in Kenya (including ministries) does not engage directly in the buying or acquisition of goods or services. Ministries, therefore, use tendering as a platform of acquiring the goods or services that forms the central part of their day-to-day operations. Information technology has also been reported as the second most used supply chain practice. With the advancement in Kenya’s level of technology, the public sector is increasingly shifting from the conventional supply chain practices to the digitalization of services. The analysis shows that Kenyan ministries have considerably invested in information technology as a move to boost service delivery, which is an essential part of stakeholder satisfaction.

It is clear from the analysis that some supply chain practices such as outsourcing, distribution and logistics, and lean supplier base reduction are yet to take off among ministries. The ministries, for instance, have been reluctant to outsource some of their services citing reasons such the possible threat to security and confidentiality often associated with outsourcing. The application of lean supplier base reduction in ministries, on the other hand, is not a well-understood concept among many procurement and supply chain staff in Kenyan ministries owing to their limited staff capacity, particularly in specialized technical disciplines. Table 4 shows the extent with which ministries used some of the specific supply chain practices over the recent past.

Table 4: Application of supply chain practices in ministries

	N	Mean	Rank	Std. Deviation
Supplier involvement in ministry decisions	54	2.54	4	1.041
Use of IT in SCM	54	2.15	1	.96
All suppliers participate in tendering	54	2.54	4	.966
Outsourcing is excellently performed	54	2.52	3	.841
Supplier involved in problem solving	54	2.39	2	.834
Valid N (listwise)	54			

Source: Field data

A score mean of less than 3 for all responses (in table 4) is an indication that most ministries have embraced the common supply chain practices. The use of IT in supply chain management is the most used practice with a mean of 2.15 (rank 1). Supplier involvement in ministries' decision making processes and their participation in tendering have been cited as the least used practices

with a joint mean of 2.54 each (rank 4), though still reported as being among the common supply chain practice.

4.4 Supply chain reforms in ministries

The supply chain reforms in the Kenyan public sector has been advocated primarily by the need to improve the level of efficiency and effectiveness of supply chain management, which have for long been characterized by high costs of tendering and purchasing, poor quality services and delays in service delivery, and constant supplier complaints attributable to delays in payments, among others. Over the recent past, the ministries have been in the forefront of implementing a number of reforms in the quest to improve their supply chain performance. From the analysis, it is apparent that all the seven major supply chain reforms (e-government, RRI, values and ethics, institutional capacity, service delivery charters, ISO standards, and inspection and acceptance) have been adopted in at least one ministry in Kenya.

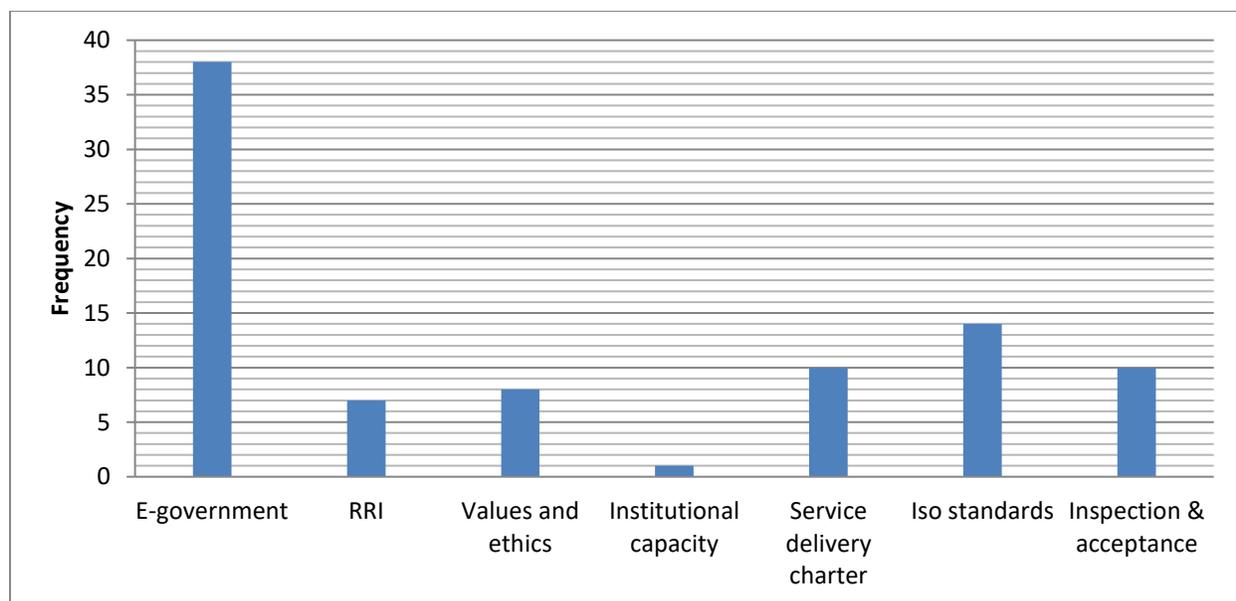


Figure 4: Common supply chain reforms

Source: Field data

E-government is the most adopted supply chain reforms in ministries as reported by 44% of the respondents. This initiative has largely been motivated by the overall move by the Kenyan government to digitize all its operations and services as part of the implementation of the Vision 2030. The adoption of e-government among ministries have apparently yielded many supply chain management benefits including efficiency, better access to services, improved government to government communication, better access to procurement and supply chain services, and more transparency and accountability. Today, evidence shows that ministries’ procurement and supply chain departments have shown increased adherence to and observation of service delivery charters and ISO standards while carrying out their duties. These two reforms have paved way for the realization of supply chain effectiveness on quality of services, cost, and responsiveness to the needs of stakeholders.

Table 5: Application of key reforms in ministries

	N	Mean	Rank	Std. Deviation
Conformity to ISO standards	54	2.17	2	.795
Digitalization of service	54	2.44	4	.904
Emphasis on values and ethics	54	2.13	1	.87
Adherence to service delivery charters	54	2.37	3	1.051
Valid N (listwise)	54			

Source: Field data

There is also overwhelming evidence to indicate that about 11% of the ministries conducts thorough inspection of goods before accepting to enter into a contract of purchase. This effort is aimed at reducing wastage of public resources that emanates from inappropriate supply chain practices. Though some efforts has been made by ministries, not much has been implemented in certain important aspects that forms an important part of supply chain management in the public

sector such as reduced risk investments initiatives, establishing institutional capacity, and carrying out supply chain practices based on values and ethics. Other findings relation to the extent of the adoption of reforms is presented in table 5. Findings shows ethics and values as the most practiced reform. Digitization is revealed as the least applied reform having a mean score of 2.44.

4.5 Supply chain performance in Kenya Ministries

Table 4 provides a summary of the mean score and rank of the main aspects of supply chain management.

Table 6: Aspects of supply chain performance

Variables	N	Mean	Rank	Std. Deviation
Strong SC performance	54	2.11	2	0.793
Improved SCM technology	54	2.09	1	0.734
High level of supply chain collaboration	54	2.2	4	0.786
SC effectiveness on cost, quality and responsiveness	54	2.11	2	0.816
Improved capacity to attract, retain and develop talented staff	54	2.2	4	0.786
Reduced SC costs	54	2.28	8	0.787
New and innovative products, services and processes	54	2.22	6	0.793
Improvement in supplier-company relationship	54	2.56	9	0.945
Improved customer satisfaction	54	2.22	6	0.883
Valid N (listwise)	54			

Source: Field data

From the study findings, it is clear that there has been a relatively optimistic view on the state of supply chain performance of ministries in Kenya. With a mean score of 2, it is easy to conclude that the respondents generally agree that the ministries' supply chain systems have shown a strong performance over the recent past. Most of those whose view resonated with the above statement are specialized primarily in procurement. With a rank of 1, it is apparent that the most

crucial aspect of supply chain performance relates to improved SCM technology in the ministries. This has been fueled by the continuous improvement IT infrastructure.

4.6 Supply chain practices and reforms, and on supply chain performance

The classical linear regression analysis (ordinary least squares method) was used to establish the relationship between supply chain practices, supply chain reforms and the performance of supply chain system. To be precise, the analysis focused on examining the direction and extent with which the supply chain practices and reformed had transformed the state of supply chain performance in Kenyan ministries.

The values of each variable (both independent and dependent) used in regression was obtained from the weighted average of scores given by respondents on questions that directly touched on the key elements of the three underlying variables. The following are tables 4.5, 4.6 and 4.7 show the regression output from the analysis of the respondents' data.

Table 7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.496 ^a	.246	.216	.61262

a. Predictors: (Constant), Supply chain reforms, Supply chain practices

With a multiple coefficient of determination of 0.496, it can be argued that about 50% of the changes of supply chain performance in the ministries results from the changes in supply chain practices and reforms.

Table 8: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	.914	.334		2.739	.008
	Supply chain practices	.262	.137	.266	1.914	.061
	Supply chain reforms	.295	.133	.309	2.225	.031

a. Dependent Variable: Supply chain performance

From the regression coefficients of independent variables in table 4.6, it is clear that the changes in supply chain practices and reforms independently impose a positive directional effect on supply chain performance of ministries. It should, however, be noted that the effect of supply chain reforms have a slightly more effect on supply chain performance relative to the supply chain practices. However, one coefficient, supply chain practices, is not statistically significant. From the analysis of variance (ANOVA) or F-test, it can be observed that the regression model is a good fit. That is, both supply chain reforms and supply chain practices do not significantly determine supply chain performance in Kenyan ministries. This is an indication that factors such as organizational politics, corruption and financing of ministries could be playing a major role in influencing supply chain performance of ministries in Kenya.

Table 9: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.242	2	3.121	8.317	.001 ^b
	Residual	19.140	51	.375		
	Total	25.383	53			

a. Dependent Variable: Supply chain performance

b. Predictors: (Constant), Supply chain reforms, Supply chain practices

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of findings

In achieving the research objectives provided in chapter one, the study was conducted that draws evidence from the views of 54 respondents from all the 18 ministries in Kenya. The respondents were selected using the census sampling method. The respondents were provided with open and close-ended questionnaires using the drop and pick method. The study achieved 100% response rate. Evidence show that those who participated in the study were mostly male that comprised on 59% of the respondents, and large proportion of respondents was aged 41-50 years. The majority of responds (85%) worked at ministries' middle level positions. Most people were in procurement function (74%).

Tendering and use of IT have been identified as the most common supply chain practices in ministries with frequencies of approximately 45% and 20% respectively. Ministries are yet to adopt some practices such as supplier base reduction and outsourcing due to lack of institutional and staff capacity. E-government is cited by majority of respondents (38) as the most adopted supply chain reform among the ministries championed by the digitalization of all public services in Kenya. Institutional capacity is yet to penetrate in ministries as indicated by less than 5% of respondents who reported to have instituted the reform in their ministries.

With a mean of 2.11, there is undoubtedly a general feeling of an improved supply chain performance among ministries in Kenya. In general, the supply chain performance is reported to have improved in many aspects including supply chain collaboration, reduction in supply chain costs, supply chain effectiveness (cost, quality and responsiveness), supplier relationships, and

supply chain management technology. Using multiple regression model to analysis the data, findings on regression coefficients of independent variables indicate the both supply chain reforms and practices have a positive (though not statistically significant) effect on supply chain performance.

5.2 Conclusions

The purpose of the study was to ascertain the manner and extent to which the supply chain practices and reforms interact to give rise to improved supply chain performance. From the findings and discussions, the following conclusions can be made. First, it is clear that some supply chain practices are used more frequently and intensively than others largely because of their perceived importance to ministries' supply chain management. Over the recent past, a number of supply chain reforms have also been introduced in ministries as the quest to streamline government operations particularly with the increased pressure to digitalize all government services in order to compete effectively with the private sector. The current supply chain practices and the new reforms continue to have a direct impact on supply chain performance in ministries. However, it is important to note that these two set of factors do not solely determine the fate of supply chain systems in ministries as there could be other equally important factors such as political interference.

5.3 Recommendations for policy and practice

From the analysis of findings and conclusions made thereafter, the following recommendations are vital in helping to improve the level of supply chain performance in Kenyan ministries. First, evidence from the analysis indicates that majority of the employees have little or no knowledge and expertise in certain supply chain practices. This has been one of the major impediments to a successfully supply chain performance among ministries. To address this problem, efforts need to

be directly towards training of relevant staff on various aspects (Denolf et al., 2015). Here, key training should be majorly on lean supply chain reduction, best outsourcing practices and supply chain risk management strategies. The latter will help to address some of the risks attributable to supply chain risk management by implementing strategies to manage exceptional and everyday risks along the supply chain built on continuous risk assessment with the aim of ensuring continuity and reducing vulnerability.

In realizing sustainable supply chain performance, ministries need to adopt supply chain best practices. In the context of ministries, such practices include better supplier performance, supply chain segmentation, and lean logistics. About supplier performance, the ministries are encouraged to analyze, measure, and effectively manage the performance of suppliers in an effort to alleviate risks, cut costs and boost continuous improvement. Historically, most ministries and other public sector institutions in Kenya are characterized by supply chain complexities, which reduce the efficiency and effectiveness of supply chain systems. Supply chain segmentation can be used to address this challenge since it will help to align the supply response capabilities and customer channel demands (Roscoe & Baker, 2014). This can be achieved if efforts are put in place to improve e-procurement through the Integrated Financial Management System systems (IFMS) with a view of reducing lead-time

There is need to institute reforms specifically to improve institutional capacity of ministries. As it can be evident from the analysis, supplier partnerships (collaboration) have not been well practiced in ministries owing largely to lack of institutional capacity. To improve the institutional capacity of ministries in Kenya, focus should be on three key elements: provisional of institutional support, mechanisms for plan implementation (networking and partnership arrangements) and supporting elements (Watkins et al., 2015). Institutional support can take the

form of increased funding to ministries to spearhead payments to suppliers. The supporting elements should incorporate sharing of expertise and experience, transfer of knowledge, and dissemination of information.

5.4 Limitations of the study

In spite of the efforts made by the researcher, the present study is not completely free of certain limitations, which may trim down validity of results. First, the study used respondents from only middle and top-level management positions in ministries. This group, unlike the lower level managers, does not necessarily engage directly in the conduct of supply chain activities. Thus, their views may not accurately reflect the state of supply chain management in Kenyan ministries. It is also true that the ministries' supply chain systems comprises of various stakeholders (both internal and external) including suppliers, customers and distributors, most of which have not been included in the study and yet their experience could have been proven vital in understanding supply chain management in ministries. Analysis also shows that the study focused on the effect of supply chain practices and reforms on the general supply chain performance thus lacking an in-depth examination on specific elements of supply chain performance such as supply chain innovation. In addition, the number of respondents used in the study is not statistically sufficient or justified owing to the large number of the current number of employees that work in those ministries' supply chain and procurement departments.

5.5 Areas for future Research

Drawing from the above limitations and the current research gap, further studies should concentrate on the following areas. First, there is need to conduct a study that incorporates the views all stakeholder groups particularly the pre-qualified suppliers of various ministries and the employees in the middle level management. Second, future studies should lay emphasis on

comprehensive examination of specific aspects of supply chain performance that have not been intensively researched such as supply chain management technologies rather than making generalized observations and conclusions. Moreover, with the uptake of devolution, there is need to focus on supply chain performance among counties and sub-counties.

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Appendices

Appendix 1: The Questionnaire

The following questionnaire will be anonymous and any information given therein will not be revealed to any person, and will therefore be used for research purposes only.

Section A: Background information

1. Gender

Male [] Female []

2. Age

Below 30 [] 31-40 [] 41-50 [] 51-60 [] Above 60 []

3. What is your job level?

Top management [] Middle level management []

4. What is your job specialization at your ministry?

Procurement [] Logistic [] Contract management [] Disposal [] Inventory []

Section B: Supply Chain Practices

5. Which of the following supply chain practices do you consider common in your ministry?

Tendering [] Outsourcing [] Inventory control [] Distribution and logistics []

Use of information technology [] Lean supplier base reduction [] Partnerships []

Please indicate your response to the following research questions by ticking appropriate answers. (1=Strongly Agree, 2=Agree, 3=neither Agree nor Disagree, 4=Disagree, 5=Strongly Disagree)

Question/score		1	2	3	4	5
6.	Suppliers have become part of the ministry. We hold frequent meetings with suppliers and discuss on issues					
7.	There is adequacy of IT systems throughout the supply chain (automated ordering system to major suppliers)					
8.	All pre-qualified suppliers participate in tendering process					
9.	Outsourced services are excellently performed and the supplier and customer meets regularly to discuss issues that relate to outsources services					
10.	Our organization regularly solve problems jointly with its suppliers					

Section C: Supply Chain Reforms

11. Which supply chain reforms have you experienced?

E-Government [] Rapid Results Initiatives [] Values and Ethics [] Institutional Capacity []

Service delivery charters [] ISO Certification [] Inspection and Acceptance []

Please indicate your response to the following research questions by ticking appropriate answers. (1=Strongly Agree, 2=Agree, 3=neither Agree nor Disagree, 4=Disagree, 5=Strongly Disagree)

Questions/score		1	2	3	4	5
12.	Our ministry's supply chain practices conforms with the current ISO standards on supply chain management					

13.	All our procurement services are digitized.					
14.	We lay emphasis on values and ethics when carrying out supply chain management activities					
15.	We strictly follow the service delivery charts in executing our duties					

Section D: Supply Chain Performance

Please indicate your response to the following research questions by ticking appropriate answers. (1=Strongly Agree, 2=Agree, 3=neither Agree nor Disagree, 4=Disagree, 5=Strongly Disagree)

Questions/Score	1	2	3	4	5
16. The public service reforms have improved the performance of our supply chains					
17. The public service reforms have contributed to the use of new SCM technologies within the ministry					
18. The public service reforms have encouraged a higher level of collaboration with our suppliers					
19. The reforms have improved our SC effectiveness on cost, quality and responsiveness.					
20. The reforms in the supply chain have helped to attract, retain and develop quality supply management staff.					
21. There has been a considerable reduction in our SC costs while					

	improving our SC quality and responsiveness following the SC reforms within the ministry.					
22.	Supply chain reforms have played a key role in introduction of new and innovative products, processes and services within our SCs					
23.	Suppliers have become part of the ministry. We hold frequent meetings with suppliers and discuss on issues					
24.	Customers receive goods and services at the right quality, quantity, time& place					

Section E: Open Ended Questions

25. RRI; Performance Contracting; Public Service Delivery Charters; Transformative Leadership; Institutional Capacity Building; Values and Ethics; e-Government; ISO certification. Which of the above public service reforms implemented by the Government have MOST influenced SCM operations within your organization? How?

26. Do you think that the introduction of innovative products, processes and services within your SCs can in part be attributed to the introduction of the reforms in ministry? If yes, how?

27. Do you have any other comments or suggestions to improve reforms, practices within your ministry? Please elaborate

Thank you for your feedback.

Appendix 2: List of ministries in Kenya 2017

1	Ministry of education
2	Ministry of water
3	Ministry of agriculture
4	Ministry of labor
5	Ministry of health
6	Ministry of sports
7	National treasury
8	Office of the president
9	Ministry of energy
10	Ministry of tourism
11	Ministry of lands
12	Ministry of transport
13	Ministry of environment
14	Ministry of industry
15	Ministry of planning and devolution
16	Ministry of information, communication and technology
17	Attorney General chambers
18	Ministry of housing