

**FACTORS INFLUENCING IMPLEMENTATION OF SUPPLY CHAIN
MANAGEMENT FOR MATERNAL HEALTH PROGRAMMES AMONG PUBLIC
HOSPITALS IN MERU COUNTY, KENYA**

BY

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DECLARATION

This research project report is my own original work and has not been presented for any academic award in the University or any other University.

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This research project is presented for examination with my approval as the University supervisor.

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DEDICATION

This research project is dedicated to my Parents and my family who encouraged, supported and facilitated my studies in many aspects, my sister Winfred Nthama for her prayers, support and encouragement during my study.

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ABBREVIATIONS AND ACRONYMS

CRM	Customer Relationships Management
ERP	Enterprise Resource Planning
JIT	Just In Time
MRP	Materials Requirement Planning
PPOA	Public Procurement Oversight Authority
SC	Supply Chain
SCM	Supply Chain Management
SPSS	Statistical Package for Social Sciences
SRM	Supplier Relationships Management

ABSTRACT

Implementation of supply chain management for Maternal Health Programmes among Public Hospitals practices in some international organizations is still a key challenge regardless of the rising attention being paid by all modern enterprises to 9 supply chain management practices globally. Although many health care organizations have recognized the importance of adopting supply chain management practices, the application of techniques, methods and best practices originally developed in an industrial setting clearly is often problematic. Organizations even with most efficient internal processes do not facilitate supply chain management across borders. Collaboration is minimized and other players resort to traditional methods of operations that may not be cost effective. The purpose of this study was to determine factors influencing the implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya. The study sought to achieve the following objectives; to evaluate the extent to which financial management, training, transparency and accountability and auditing influence implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya. The study adopted a descriptive research design and target population of 293 comprising of Medical Officers, Clinical Officers, Nurses, Trained Community Health Workers, County Health Management Team and County Delivery Unit officers in Meru County. Stratified simple random sampling technique was used to select a sample of 166 respondents. Primary data was obtained using self-administered questionnaires while secondary data was obtained using data collection sheet. Data was analysed using Statistical Package for Social Sciences Version 25.0 which is the most recent version. Descriptive statistics such as frequencies, percentages, mean score and standard deviation were estimated for all the quantitative variables and information was presented by using tables. The qualitative data from the open-ended questions was analysed using conceptual content analysis and presented in prose. Inferential data analysis was done using multiple regression analysis. F-statistic was also computed at 95% confidence level in order to test whether there was any significant relationship between supply chain management process and the various factors influencing it. The findings show that financial management had a strong and positive relationship with the implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County. The study found that performance, ethical codes and professionalism were found to influence implementation of supply chain management for Maternal Health Programmes to a great extent. It was also found out that effective ethics and anti-corruption measures influenced implementation of supply chain management for Maternal Health Programmes to a very great extent. It was further established that auditing has a significant effect on the implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County. It was concluded that financial management had the greatest effect on the implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, followed by transparency and accountability then training while auditing had the least implementation of supply chain management for Maternal Health Programmes among Public Hospitals. It was recommended that organizations that offer Health Services and conduct Health Projects that are funded by donors should strengthen up their monitoring and audit systems on financial management as it helps in keeping up high standards for financial accountability which was the prerequisite in raising donor confidence in offering more funds. The findings will benefit general public by enabling them to get value for their money from quality service delivered to them by Health Sector.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

All over the world nations are putting all the efforts in strengthening the current systems of supply chain management for Maternal Health Programmes among Public Hospitals. As per WHO (2010), each nation requires a powerful system of Maternal Health Programmes as strategically planning the nations' health sector. Every key programmes and health activity need to be covered by this system. This system is needed in addressing both the better data and ensure management effectiveness and implementation of supply chain management. Supply chain management in the public health sector has received increasing attention in recent years as both a priority and a challenge for many countries as healthcare institutions find themselves with increasing number of products, programs and patients to manage.

The healthcare supply chain is considered as highly fragmented. At traditional healthcare supply chain each supply chain stage operates independently that prevents the supply chain from operating as a system. For example, within the healthcare provider level, physicians demand preference items, which are usually at a premium, and give little importance to cost (Martínez-Jurado, & Moyano-Fuentes, 2014). In contrast, hospital executives have interest in providing quality healthcare services to customers, while at the same time reducing operating costs. On the other hand, manufacturers and distributors want to push their products to increase profit and gain market share. For this reason, the healthcare providers cannot easily predict patient mix and the demand for a particular period and specific item (Govindan, Kaliyan, Kannan & Haq, 2014).

World Health Organization (WHO) has its main focus in its health efforts in the world geared towards children's and women's health in performance of the Maternal Health Programmes. Therefore, this is due to the report that indicates that, up to 1,000 women die daily translating to 358,000 women dying per year –either while they are pregnant or while giving birth because of inaccessible health care or inadequacy in interventions/lack of proper MCH (maternal child health) programmes structure, poor infrastructural development for the available MCH programmes and even lack of basic operational facilities (WHO, 2011). A report by the World Bank (2014) describes that, across the world, skilled health care programmes during childbirth are only available to 60% of women, and less than 40% of expectant mothers have a postnatal visit. On the other hand, unintended pregnancies are 76 million yearly, unsafe abortions reach

22 million and this is the group that contributes to 13 % of all maternal deaths. In most developing countries, the accesses to services in family planning remain a challenge despite the potential of family planning to prevent some related deaths. Meeting the contraceptive needs would greatly reduce unintended pregnancies by up to two-thirds; this would translate to more than 1.5 million maternal and newborn lives. 505,000 maternal deaths will thus be avoided (UNFPA, 2010).

The challenges affecting implementation of supply chain management for Maternal Health Programmes among Public Hospitals have been analyzed by a number of scholars and they have been numerous and almost uniform in middle developed economies like India, Malaysia and the LDCs (least developed countries) like the sub-Saharan Africa economies. World Vision (2013) categorizes issues that govern the health of mothers and their infants into two categories; environmental and economically structured challenges. Environmental issues like malnutrition among the under-fives have been cited as a global challenge in the 21st century on performance of the Maternal Health Programmes (Black et al, 2008).

There has been some achievement in millennium development goals four and five over the last ten years. However, these achievements are uneven across various regions and countries due to lack of proper Maternal Health Programmes among Public Hospitals. Both the under-five and maternal mortality are noted to have been increasing (UNICEF, 2010). In relation to the above realization, governments and various development agencies have increased their efforts to develop and implement various MCH programmes so as to curb the number of mothers dying, the pains of poor deliveries and the sorrow of losing their young ones (WHO, 2010). Globally, studies by scholars like Akhter (2010), Chowdhury (2010) have focused on the MCH programmes implementation as compared to the African countries. According to Akhter, in Bangladesh complications arising from pregnancy related conditions and childbirth contribute to more deaths and disability compared to any other reproductive health problems. This state is worsening as the Bangladesh population is ever increasing and the rate at which County Maternal Health care programmes have been implemented in a wanting manner and ways for the last 2 decades. EC/UNFPA (2013) shows that, as a result of inadequate access to modern health services or proper planning and implementation of MCH programmes, the country is losing its glory of achieving the MDGs

Across Africa, Maternal Health Programmes success is still a complicated issue. Take an example of Angola, poor implementation of Maternal Health Programmes has been systemic

and an ongoing problem leading to decreased level of health in the early 21st century (WHO, 2012). UNICEF (2013) states that Angola has one of the highest maternal death rates currently in the world. The estimated MMR at the end of the Civil War was estimated to be between 1,281-1,500 maternal deaths to 100,000 live births. This estimate was taken in the late 1990s and, in 2002 as reported by UNICEF representing the MMR situation in the country at the end of the War. In 2008-2010, the estimate value decreased to 610 deaths per 100,000 live births. Even though this is an improvement, it is very minimal when compared to Sweden which has an MMR estimate of 5 deaths to 100,000 live births. According to USAID, 2010, the MMR of the country has shown reduction since the end of the Civil War in 2002. This has been attributed to the government's efforts in implementing the various MCH programmes. However, the MMR indicator is still one of the highest ones in the world. On average, it is estimated that a woman gives birth 7.2 times.

In developing countries which often have weaker administration and political institutions, corruption can actually become part of the system generating apathy instead of condemnation. This is mainly envisioned in our health sector, where huge sums of funds from the government and international donors are contributed to acquire drugs, pharmaceutical goods and equipments so as to have a health citizenry. Unfortunately, cases of corruption emerge through public officials mismanaging, embezzle, or scheme deals that will eventually see them fund to their accounts and ultimately the efficiency and effectiveness aspect the funds were to play are compromised. The officials who mainly participate in these practices are procurement a professional whose main concern is enriching themselves at the expense of a deteriorating health sector with inadequate resources to provide for needs of its patients (Hazen, Boone, Ezell & Jones-Farmer, 2014).

In South Africa, all government transactions and processes are governed by the Constitution, Act no 108 of 1996. Supply chain management for Maternal Health Programmes among Public Hospitals is also one of the transformation processes that are emphasised by the Constitution in Section 217. The Constitution states and emphasises that, whenever any structure of government, whether it is the national, provincial or local sphere of government or any other institution identified in national legislation contracts for bids or services, it must do so in accordance with a system which is fair, equitable, transparent, competitive and cost effective (The Constitution of the Republic of South Africa, Act no 108 of 1996. S 217 (Ojo, Mbowa & Akinlabi, 2014).

The introduction of the Maternal Health Programmes forced the Burundi government to borrow extra funds from the World bank to the tune of \$23.6 million in 2008/2009 to expand the MCH programme started in 2006, train extra 310 nurses and 34 doctors in Kenyan Universities between 2005 to 2010, acquire cheap but highly suited technology from China and Japan, increase its road network, electricity and clean water infrastructure to the MCH centres/clinics by 37% between 2005 and 2011 and have radios and television programmes that sensitized mothers not to deliver in their homes. These were among the factors that have greatly influenced the implementation of MCH programmes to the tune of 41% from 2005 to 2013 and the country has so far seen a reduction in maternal deaths and infant mortality rates reduced by 46.12% between the said years (UNICEF, 2013). These have been the general trends in east Africa.

In Kenya, although the government's commitment to increase access of health services to common people through approaches like Essential Service Package (ESP), the uptake of health services and the implementation of the various health programmes especially those focusing on women and the infants is still below the acceptable standard (World Bank, 2011). The utilization of health services and the implementation of the ever proposed MCH programmes by various donors and the government since 1990's has been a behavioral phenomenon that is complex. Studies on preventive and curative services often indicate that health services use is related to availability, quality and cost of the services, social structure, beliefs and the user's individual characteristics (UNICEF, 2012).

Across Africa, Maternal Health Programmes success is still a complicated issue. Take an example of Angola, poor implementation of Maternal Health Programmes has been systemic and an ongoing problem leading to decreased level of health in the early 21st century (WHO, 2012). UNICEF (2013) states that Angola has one of the highest maternal death rates currently in the world. The estimated MMR at the end of the Civil War was estimated to be between 1,281-1,500 maternal deaths to 100,000 live births. This estimate was taken in the late 1990s and, in 2002 as reported by UNICEF representing the MMR situation in the country at the end of the War. In 2008-2010, the estimate value decreased to 610 deaths per 100,000 live births. Even though this is an improvement, it is very minimal when compared to Sweden which has an MMR estimate of 5 deaths to 100,000 live births. According to USAID, 2010, the MMR of the country has shown reduction since the end of the Civil War in 2002. This has been attributed to the government's efforts in implementing the various MCH programmes. However, the

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In Kenya, the institutions in Kenya have for a long time been struggling with serious issues of poor supplier management where cases of malpractices have been reported since the relationship existing is not based on trust and commitment which has affected the level of service delivery offered and more so efficiency and effectiveness of the supply chain management (World Bank, 2013). Institutions information sharing is rigid because of the bureaucratic structures and overreliance on manual ways of communication which has affected supply chain management performance because of delay of information from one entity to the other (Lundu & Shale, 2015).

Public Hospitals in Kenya are lagging behind in appreciating how integrated supply chain drives outstanding changes in business activities and work with positive consequences in better quality services, cost saving and efficiency. Past studies have showed that a large portion of small and midsize companies, still depend on manual processes to manage their global trade operations, specifically their exports. On that note, the Public Hospitals in Kenya are likely to adopt SCM practices like customer-supplier partnerships, information sharing, training, information technology, internal systems and processes (Wamalwa, 2014).

The adverse risks from noncompliance with procurement regulations include fraud, corruption and financial loss (PPOA, 2010). At Thika District Hospital for example, the purchases were found to be uncoordinated and uneconomical without planning of quantities, competitive bidding and scheduling of deliveries. There was lack of adequate storage capacity for

pharmaceutical and non-pharmaceuticals leading to undetected deterioration of stores. The capacity of procurement staff in terms of numbers and skills was inadequate and in dire need of strengthening through training (Malaba, Ogolla & Mburu, 2014).

Supply chain management for Maternal Health Programmes among Public Hospitals is the management of information, processes, goods and funds from the earliest supplier to the ultimate customer, including disposal. Services have become increasingly important as the driving force in the economy. However, there has been little research to date on services supply chains. (Ellram, Tate & Billington, 2007). It is believed that service businesses can benefit by applying some best practices from manufacturing to their processes. However, the inherent differences in services create a need for supply chain management tools specific to the services sector (Nyamasege, & Biraori, 2015).

The supplier is then notified of the committee's decision and a Local Purchase Order (LPO) is drawn to allow for the supply and to commit the government to pay. The goods are supplied and received by the stores who verify that they are of the correct quantity and quality. Once received they are stored in proper condition and later issued to the department that ordered the goods. The performance of most public health facilities in supply chain management has been wanting. In a report by the Public Procurement Oversight Authority review of procurement functions and procedures at New Nyanza Provincial General Hospital in 2009 it was found that the NNPGH does not have an internal audit unit. Record keeping, data and documentation controls and contract management is a major challenge. Some records pertaining to execution of procurement process was incomplete (Nyamasege & Biraori, 2015).

Public Hospitals are Government operated hospitals. Hospitals are open systems strongly influenced by the environment in which they operate (McKee and Healy 2002a). They interact with the surrounding environment to secure the resources needed for survival, adaptation and growth. Their policies and activities are constantly influenced by external factors related to the population they serve, patterns of prevailing diseases, public expectations, changes in the hospital system and healthcare system, and the broader socio-economic and political environment. Hospitals represent the largest cost component of national healthcare expenditures, and both medical and non-medical supplies account for one of the largest costs to hospitals (Muma, Nyaoga, Matwere & Nyambega, 2014). Hospitals continue to adopt expensive technology and customized drugs, their costs will likely continue to escalate. Hospital supply chains must be resilient and flexible to accommodate both global and regional

market constraints, as well as government regulations; because they are critical to delivering healthcare services and achieving desired patient outcomes.

A mother's choice of place for delivery varies among different ethnicities, regions, and the choice of health facility the mother uses (GOK, 2013). Factors like strained governmental budgets due to donor's withdrawal in 1995, the lack of proper structured medical infrastructure like the water and wards, the limited space for the erection of new hospitals more specifically in the urban centers, poor political integration that infuses poor leadership and management besides embezzlement of funds and many more have been cited as major hindrances to MCH programmes success in Kenya. Providing healthy maternal solutions through offering the prevention the residents need in disease avoidance as well as health maintenance. It gives the flu shots for old people as well as assisting the pregnancy mother assistance for reduction infant mortality. The baby regular checkups and immunizations are as well provided by the County Maternal Health Program. Additionally, the government have come up with efficient measures of assisting in addressing the health difficulties particularly now when directorate has a huge monitoring and evaluating role in County Maternal Health Program performance. M&E curriculum is as well set to be adopted by a lot of institutions of higher education which will assist in making sure that the employees as well as Kenyans get adequate M&E training (WHO, 2015).

1.2 Statement of the Problem

Implementation of supply chain management for Maternal Health Programmes among Public Hospitals practices in some international organizations is still a key challenge regardless of the rising attention being paid by all modern enterprises to 9 supply chain management practices globally. Although many health care organizations have recognized the importance of adopting supply chain management practices, the application of techniques, methods and best practices originally developed in an industrial setting clearly is often problematic. Organizations even with most efficient internal processes do not facilitate supply chain management across borders. Collaboration is minimized and other players resort to traditional methods of operations that may not be cost effective (Beske, Land & Seuring, 2014). Supply chain management practices and innovation have been found to positively influence supply chain performance as well as the overall performance of the organizations (Wolf, 2014). In his study, Fahimnia, Sarkis and Davarzani (2015) asserts that supply chain management practices in

humanitarian organizations are critical for the performance of the organizations as the speed at which humanitarian aid is delivered at the point of need.

In Public Hospitals in Kenya, there has been a rise in complaints by the public, professionals and other stakeholder's about the supply chain management performance w concluded that lack of understanding of numerous standpoints of the customer would lead in the beneficiaries getting goods and services which are not need based. The complexity of Supply chains management practices has amplified in the last decade among NGOs as different processes, actors, decisions and information have to be mixed to serve the needs of the victims affected by a disaster (Lundu & Shale, 2015). The necessity to enhance delivery in humanitarian aid has recently received increased attention due to the perceived failure in aid delivery systems following major crises resulting in loss of life and huge resource wastage (Wamalwa, 2014). Even though there has been a great effort to enhance efficiency, NGOs systems are composed by a series of phases in which materials and information flow through different steps to fulfill the needs of the recipient (Magutu, Aduda & Nyaoga, 2015).

A number of studies on implementation of SCM practices had been conducted. For instance Mogire (2011) conducted research on Supply Chain Practices in five star hotels in Kenya. Onyango (2011) studied supply chain management practices and performance in cement industry in Kenya. Munguti (2013) speculated that most of the NGOs used numerous supply chain activities such as collaboration with customers and beneficiaries and inventory optimization in their disaster response operations. Nevertheless, according to Thakkar et al (2012), supply chain management issues are more expansively explored in the context of large enterprises but less attention is paid to international humanitarian organizations. Additionally, Mohamed (2012) maintained that there are various SCM practices prevalent among NGO's in Kenya although a bigger percentage of the Supply Chain Management practices have not been effectively implemented among the NGOs in Kenya. However, none of the reviewed studies focused on institutional determinants influencing influences implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya. Therefore, this study sought to bridge this gap by establishing the challenges facing implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya

1.3 Purpose of the Study

The purpose of this study was to assess factors influencing implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya.

1.4 Objectives of the Study

The study sought to achieve the following objectives;

- i. To determine how financial management influence implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya.
- ii. To establish how training influence implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya.
- iii. To assess how transparency and accountability influence implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya.
- iv. To determine how auditing influence implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya.

1.5 Research Questions

The study sought answers to the following questions;

- i) To what extent does financial management influence implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya?
- ii) How does training influence implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya?
- iii) What is the influence of transparency and accountability on implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya?
- iv) How does auditing influence implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya ?

1.6 Significance of the Study

The findings of this research study were of great significance to the existing body of knowledge related to the field of study. The research findings contributed to the literature through an

exploratory study on the challenges facing e-procurement implementation. The findings were of benefit to the stakeholders since it enabled them to address current challenges affecting implementation of supply chain management for Maternal Health Programmes among Public Hospitals (SCM) and therefore streamlining procurement activities in Public Hospitals. The findings also benefited the general public by enabling them to get value for their money from quality service delivered to them by health sector. Full implementation of procurement enables the health sector to transact business smoothly with other stakeholders.

The study or the research aimed at examining challenges facing procurement operations in the Public Hospitals. The study therefore ensured the critical path network approach was applied through strengths, weaknesses, opportunities and threats (SWOT) analysis in dealing with challenges arising from administrative that encompasses staffing competency, transparency and accountability, ethical behavior in procurement while embracing modern technology in procedural steps of procurement operations in public sector.

The findings of the research provided the researcher with skills and ideas on the possible ways of dealing with challenges facing procurement operations. The recommendation made was of importance to the public of which deferent entities could employ to rectify and manage challenges effectively in their procurement operation processes. The recommendations were also useful to future researchers or future scholars in numerous ways.

1.7 Delimitation of the Study

The study sought to establish institutional determinants influencing implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya. The study focused on implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya. The study specifically established the influence of financial management, training, transparency and accountability and auditing on influences implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya. The study collected data from the medical officers, clinical officers, nurses, trained community health workers, county health management team (CHMT) and county delivery unit officers in Meru County. The study was carried out in a period of three months.

1.8 Limitations of the Study

The study encountered some limitations that would hinder access to information that the study sought. The respondents targeted in this study were reluctant in giving information fearing that the information being sought would be used to intimidate them or print a negative image about them. The researcher handled this by carrying an introduction letter from the University to assure them that the information they gave was treated with confidentiality and was used purely for academic purposes.

Further, the results of the study were limited to the extent to which the respondents were willing to provide accurate, objective and reliable information. The researcher checked for consistency and test the reliability of the data collected.

1.9 Basic Assumptions of the Study

It was assumed that there would be no serious changes in the composition of the target population which would affect the effectiveness of the study sample. This study also assumed that the respondents were honest, cooperative and objective in the response to the research instruments and would be available to respond to the research instruments in time. Finally, the study assumed that the authorities would grant the required permission to collect data from their institutions.

1.10 Definition of Significant Terms Used in the Study

The following are the operational definitions of terms that were used throughout this study:

Auditing This is the process of examining an organization's financial records to determine if they are accurate and in accordance with the supply chain regulations.

Financial management This a vital activity in any organization. It is the process of planning, organizing, controlling and monitoring financial resources with a view to achieve organizational goals and objectives.

Implementation of supply chain management This is execution of the broad range of activities required to plan, control and execute a product's flow, from acquiring raw materials and production through distribution to the final customer, in the most streamlined and cost-effective way possible.

Training This is development of any skills and knowledge that relate to specific useful competencies in supply chain management.

Transparency and accountability Transparency is a powerful force that, when consistently applied, can help fight corruption, improve governance and promote accountability in supply chain activities. Accountability is not separable from transparency, they both encompass many of the same actions, for instance, public reporting.

1.11 Organization of the Study

This study was organized into five chapters. Chapter one contains the introduction to the study. It presents background of the study, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the Study, delimitations of the study, limitations of the Study and the definition of significant terms. On the other hand, chapter two contains reviewed literature based on the objectives of the study. It further looks at the conceptual framework and finally the summary. Chapter three covers the research methodology of the study. The chapter describes the research design, target population, sampling procedure, tools and techniques of data collection, pre-testing, data analysis, ethical considerations and finally the operational definition of variables. Chapter four presents data analysis, presentation and interpretation. The study closed with chapter five which presented summary of findings, discussion, conclusion, and recommendations for action and areas for further research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter contains review of work done by other researchers on challenges facing implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Public Hospitals. The review is based on the study where the emphasis lies on the extent to which factors such as financial management, training, transparency and accountability and auditing influences supply chain management process. Towards the end, the theoretical review and the conceptual framework is presented. Knowledge gap that has resulted to the need for this study is pointed out just before the presentation of a summary of the literature review.

2.2 Implementation of Supply Chain Management for Maternal Health Programmes Among Public Hospitals

Supply chain management is the management of information, processes, goods and funds from the earliest supplier to the ultimate customer, including disposal. Services have become increasingly important as the driving force in the economy. However, there has been little research to date on services supply chains. (Ellram, Tate & Billington, 2007). It is believed that service businesses can benefit by applying some best practices from manufacturing to their processes. However, the inherent differences in services create a need for supply chain management tools specific to the services sector (Nyamasege, & Biraori, 2015).

Implementation of supply chain management for Maternal Health Programmes among Public Hospitals practices in some international organizations is still a key challenge regardless of the rising attention being paid by all modern enterprises to supply chain management practices globally. Although many health care organizations have recognized the importance of adopting supply chain management practices, the application of techniques, methods and best practices originally developed in an industrial setting clearly is often problematic. Organizations even with most efficient internal processes do not facilitate supply chain management across borders. Collaboration is minimized and other players resort to traditional methods of operations that may not be cost effective (Beske, Land & Seuring, 2014). Supply chain management practices and innovation have been found to positively influence supply chain performance as well as the overall performance of the organizations (Wolf, 2014). In his study, Fahimnia, Sarkis and Davarzani (2015) asserts that supply chain management practices in

humanitarian organizations are critical for the performance of the organizations as the speed at which humanitarian aid is delivered at the point of need

The supplier is then notified of the committee's decision and a Local Purchase Order (LPO) is drawn to allow for the supply and to commit the government to pay. The goods are supplied and received by the stores who verify that they are of the correct quantity and quality. Once received they are stored in proper condition and later issued to the department that ordered the goods. The performance of most public health facilities in supply chain management has been wanting. In a report by the Public Procurement Oversight Authority review of procurement functions and procedures at New Nyanza Provincial General Hospital in 2009 it was found that the NNPGH does not have an internal audit unit. Record keeping, data and documentation controls and contract management is a major challenge. Some records pertaining to execution of procurement process was incomplete (Nyamasege & Biraori, 2015).

2.3 Financial Management and Implementation of Supply Chain Management for Maternal Health Programmes Among Public Hospitals

Financial Management refers to the application of general management principles to the various financial resources of the project. This encompasses planning, organizing, directing and controlling of the financial activities such as procurement and utilization of project funds. Corruption, while not a direct measure of Public Financial Management quality, may nevertheless reduce the ability of public financial allocations to affect health outcomes, as well as being a general proxy for the quality of various public institutions, including PFM systems. Corruption and a lack of transparent budgeting are known to lead to mismanagement of public funds and thus to misallocation of resources. It should be noted, however, that an alternative view on corruption regards corruption as a possible antidote to red tape in certain circumstances (Banerjee, Mullainathan & Hanna, 2012). The potential for misallocation arises mainly from problems in the relationships between principals and agents, whereby the incentives of the principals (i.e. the voters) and the agents (i.e. elected and appointed public officials) are misaligned and information asymmetries exist that agents can exploit to their advantage (Sarr, 2015; Carlitz, 2013).

Corruption can also lead to higher prices for health sector consumables and thus result in lower utilisation of health services, since such prices will usually include various bribes and other unofficial payments in the supply chain (Gupta, Davoodi & Tiongson, 2000). This may negatively impact on service delivery (as measured by accessibility), and this effect is likely to

be exacerbated by the unwillingness of donors to provide resources in highly corrupt environments (Fonchamnyo & Sama, 2016). Corruption may also lead to a reduction in governmental expenditures on health, which may ultimately result in poorer quality health service delivery.

One important function of well-designed PFM systems is that of reducing or preventing corruption and the misuse of public funds by reducing informational asymmetries or by adjusting incentives for agents. These effects should be achieved because well-designed PFM systems establish and implement rules about who has access to public resources and about the processes for accessing these resources, for example through effective procurement mechanisms (Cabezon & Prakash, 2008). This is challenging, however, since politicians may not necessarily hand it in their self-interest to increase transparency and accountability (Sarr, 2015).

Higher levels of corruption can also lead to less efficiency in PFM, since even well-designed PFM systems may not function well if bribery, stealing and fraud are widespread (Akin, Hutchinson & Strumpf, 2005). For example, a PFM system that is malfunctioning due to a lack of transparency and accountability in the use of public funds may promote corruption if rules are not observed, leading to misallocation and leakages of resources, as well as inflated prices, ultimately resulting in poor-quality health service delivery. Governmental transfers designed to encourage greater utilisation of health services through reductions in user fees may be ineffective, moreover, if there are significant resource leakages in the process (Gauthier & Wane, 2009) or if inadequate procurement rules result in the payment of exceedingly high prices.

2.4 Training and Implementation of Supply Chain Management for Maternal Health Programmes Among Public Hospitals

Training is the acquisition of knowledge, skills and competencies of a job holder so as to improve one's capability, capacity and performance (Lyles & Salk, 1996). In purchasing ethics, training is more crucial to any member per taking in purchasing and supplies functions because it brings a sense of guidance on the individual in recognizing what is wrong and right especially in procedures that are complex and pertains to legal issues.

Saunders (1997) believed that successful functioning of organizational structures and effective operation of planning control systems is dependent on the quality and ability of staff employed. Strategic plans should include information on the acquisition, development, use and reward of

human assets. Plans need to take into account the current state of development of the procurement function and the strategic direction in which its state might change. Multi-skilling provides employees with a variety of skills and should be developed extensively. Training is beneficial and generates more than the equivalent cost in payback. To further the goals of value-based management, all employees need broad and continuous education and training. Education, training and professional development should be skill, process oriented and continuous.

Lysons (1998) states that ethical training sessions for purchasing staff can serve such purpose as: reinforcing the organization's ethical codes and policies, remind staff that top management expects participants to consider ethical issues when making purchasing decisions and clarify what is and what is not acceptable, what members of staff should do if they discover a superior, colleague or subordinate acting contrary to the company's ethical code penalties of unethical behavior, fostering ethical standards when dealing with suppliers among others.

In Kenya, the public procurement oversight Authority (PPOA) which is a body created through the public procurement oversight Authority (PPOA) to oversee the operations and procedures in public entities, is tasked with training stakeholders in the purchasing and supplies professions who include both employees in public entities and suppliers of those entities. These training include purchasing ethics for all stakeholders through organized forums across the country and also through using the internet where publications are posted so for interested person to have access to them

2.5 Transparency and Implementation of Supply Chain Management for Maternal Health Programmes Among Public Hospitals

Transparency is generally regarded as a key feature of good governance, and an essential prerequisite for accountability between states and citizens. At its most basic, transparent governance signifies 'an openness of the governance system through clear processes and procedures and easy access to public information for citizens [stimulating] ethical awareness in public service through information sharing, which ultimately ensures accountability for the performance of the individuals and organisations handling resources or holding public office' (Suk Kim, Halligan, Cho, Oh & Eikenberry, 2005). According to Transparency International, transparency is a 'characteristic of governments, companies, organisations and individuals of being open in the clear disclosure of information rules, plans, processes and actions' (Transparency International, 2009).

By general consensus, accountability ideally involves both answerability – the responsibility of duty-bearers to provide information and justification about their actions – and enforceability – the possibility of penalties or consequences for failing to answer accountability claims (Goetz & Jenkins, 2005). In fact, much of what we call accountability reflects only the weaker category, answerability. While citizen-led or public initiatives often involve ‘soft’ peer or reputational pressure, they rarely involve strong enforceability. Accountability is government's obligation to demonstrate effectiveness in carrying out goals and producing the types of services that the public wants and needs (Segal & Summers, 2002). Lack of accountability creates opportunities for corruption.

Ethics and integrity that presuppose honesty and openness are integral components of any undertaking to ensure efficiency in the utilization of resources and effectiveness in service delivery. This requires a minimum threshold of transparency and accountability in the conduct of public affair. For this to occur, a measure of moral standing among individuals and institutions must exist to check on their excesses and more so when these act in contradistinction to their calling. The foregoing is expected to arrest such vices as corruption, enshrine appropriate work ethics and prevent other underhand deals that disadvantage the public with regard to service delivery. Corruption, which is deep-rooted in Kenya, has largely been blamed for scaling down domestic saving and investment and the misallocation of inventive talent. While in the last few decades transparency and accountability have been catchwords in the Public Service of Kenya, this is yet to completely tame corruption therein

2.6 Auditing and Implementation of Supply Chain Management for Maternal Health Programmes Among Public Hospitals

Procurement process audit is necessary to check the balance and conformity to the rules and standards sets by regulatory bodies. On this basis a firm that is strategic will possess an internal auditor who helps to examine issues related to business or institution practices and risk from time to time in a year. As an oversight the external auditors are hired to carry out single audit and give their opinion on the records and statements of the organisation or the companies. Therefore, procurement compliance is subject to audit reports. According to Bota-Avram, Popa and Stefanescu (2011), the performance of auditing can be narrowed down based on; employee experience; auditing viewed by the audit committee; management expectations of internal auditing; level of audit recommendations implemented; and auditor education levels.

Governmental entities should undertake a full-scale competitive process for the selection of independent auditors at the end of the term of each audit contract, consistent with applicable legal requirements. Ideally, auditor independence would be enhanced by a policy requiring that the independent auditor be replaced at the end of the audit contract, as is often the case in the private sector. Unfortunately, the frequent lack of competition among audit firms fully qualified to perform public-sector audits could make a policy of mandatory auditor rotation counterproductive.

Professional standards allow independent auditors to perform certain types of non-audit services for their audit clients. Any significant non-audit services should always be approved in advance by a governmental entity's audit committee. Furthermore, governmental entities should routinely explore the possibility of alternative service providers before making a decision to engage their independent auditors to perform significant non-audit services. Abbott (2001) states that audit procurement process should be structured so that the principal factor in the selection of an independent auditor is the auditor's ability to perform a quality audit. In no case should price be allowed to serve as the sole criterion for the selection of an independent auditor.

A procurement audit process that conforms to the expected standards of integrity, uprightness and honesty is one in which clear procedures are consistent with Government policies and legislation are established, understood and followed from the outset. These procedures need to consider the legitimate interests of public and ensure that all suppliers are treated equitably (Wee, 2002). An important and effective way to maintain ethics awareness in agencies is to provide training for employees. Wright and Wright (1997) argued that auditor independence is at the heart of the integrity of the audit process. When auditors and clients negotiate issues about financial reporting, maintaining the integrity of the independent audit function is mandatory for auditors and required by the standards of the accounting profession. Recently, financial scandals at companies such as Enron and WorldCom have eroded public confidence in the independence of the accounting profession and the quality of audit services.

2.7 Theoretical Review

There are many models that exist in order to analyze the creation of policies and implementation of procurement processes. These models were used to identify the challenges facing implementation of supply chain management for Maternal Health Programmes among Public Hospitals.

2.7.1 Linear Policy Model

This model was developed by Grindle and Thomas (2000) also known as rational model and is the most widely-held view of the way in which policy is made. It outlines policy-making as a problem-solving process which is rational, balanced, objective and analytical. In the model, decisions are made in a series of sequential phases, starting with the identification of a problem or issue, and ending with a set of activities to solve or deal with it. The policy model phases include; recognizing and defining the nature of the issue to be dealt with; identifying possible courses of action to deal with the issue; weighing the advantages and disadvantages of each of these alternatives; choosing the option which offers the best solution; implementing the policy and possibly evaluating the outcome (Grindle & Thomas, 2000).

This model assumes that policymakers approach the issues rationally, going through each logical stage of the process, and carefully considering all relevant information. If policies do not achieve what they are intended to achieve, blame is often not laid on the policy itself, but rather on political or managerial failure in implementing it (Pearson & Clair, 1998). Failure can be blamed on a lack of political will, poor management or shortage of resources that eventually hinders formulation and effective implementation of procurement practices (Pearson & Clair, 1998).

Linear Policy Model determines the process under which policies are made and implemented in an organization. The model assumes that failure in policy implementation can be blamed to poor management and shortage of resources and this implies that management support and budgetary allocation plays a key role in supporting policy implementation. Implementation of procurement policies is greatly determined by procurement planning, management support, budgetary allocation, and preparation of procurement progress reports, procurement records management and the employed procurement methods. The study thus used this model to determine how financial management influences implementation of procurement processes in Public Hospitals in Kenya.

2.7.2 Kirkpatrick Model

Donald Kirkpatrick has developed a very popular evaluation model that has been used since the late 1950s by the training community. The focus is on measuring four kinds of outcomes that should result from a highly effective training programme (Kirkpatrick, 1994). Kirkpatrick's model includes four levels or steps of outcome evaluation: Level 1 Evaluation is

called Reaction level; Level 2 Evaluation is called Learning level; Level 3 Evaluation is called Behavior level and finally Level 4 Evaluation is called Results level.

In Level 1, Reaction level, the goal is to measure participants' reactions to the training programme. One should measure their reactions immediately after the program. Level one evaluation should not just include reactions toward the overall programme; it should also include measurement of participants' reactions or attitudes toward specific components of the programme, such as the instructor, the topics, the presentation style, the schedule, audiovisuals, etc. Furthermore, each of these components can be broken further down into sub-components for evaluation for example you can ask participants to evaluate specific characteristics of the instructor. In short, level one evaluation is far more than just the measurement of overall customer satisfaction (Oliver, 2014).

In level 2, learning level, the goal is to determine what the training programme participants learned during the training event. Because the training instructor should have specific learning objective, one hopes to find clear learning outcomes. Learning outcomes can include changes in knowledge. The evaluation should focus on measuring what was covered in the training event (i.e., the learning objectives. Level two evaluations should be done immediately after the training event to determine if participants gained the knowledge, skills, or attitudes. A couple of issues here are (a) how shall one measure knowledge, skills, attitudes, and (b) what research design should be use to demonstrate improvement in level two outcomes? (Oliver, 2014).

In Level 3 Behaviour, the goal is to find out if training programme participants change their on-the-job-behaviour (OJB) as a result of their having attended and participated in the training programme. If the behaviour change does not occur, you also want to find out why the change did not occur. The level three question is, did the training have a positive effect on job performance? Level three evaluation specifically involves measuring the transfer of knowledge, skills, and attitudes from the training context to the workplace (Oliver, 2014).

In Level 4 The goal is to find out if the training programme led to final results, especially business results that contribute to the "bottom line" (i.e., business profits). Level four outcomes are not limited return on training investment (ROI). Level four outcomes can include other major results that contribute to the well-functioning of an organization. Level four includes any outcome that most people would agree is "good for the business." Level four outcomes are either changes in financial outcomes (such as positive ROI or increased profits) or changes in

variables that should have a relatively direct effect on financial outcomes at some point in the future (Oliver, 2014).

Kirkpartick Model helps in determining the organization training needs and establishing how employees should be trained in order to fill the organization skills gaps. The model is important in assessing training need, determining how staff should be qualified, finding out the impact of the offered training and equipping the employees with additional skills. The study used this model to evaluate the effect of training on effective implementation of procurement practices in Public Hospitals in Kenya.

2.7.3 Agency Theory

Agency theory is concerned with agency relationships. The two parties have an agency relationship when they cooperate and engage in an association wherein one party (the principal) delegates decisions and/or work to another (an agent) act on its behalf (Eisenhardt, 2009; Rungtusanatham, Rabinovich, Ashenbaum & Wallin, 2007). The important assumptions underlying agency theory is that; potential goal conflicts exist between principals and agents; each party acts in its own self-interest; information asymmetry frequently exists between principals and agents; agents are more risk averse than the principal; and efficiency is the effectiveness criterion. Two potential problems stemming from these assumptions may arise in agency relationships: an agency problem and a risk-sharing problem (Xingxing, 2012). An agency problem appears when agents' goals differ from the principals' and it is difficult or expensive to verify whether agents have appropriately performed the delegated work (i.e. moral hazard). This problem also arises when it is difficult or expensive to verify that agents have the expertise to perform the delegated work (i.e. adverse selection) that they claim to have. A risk-sharing problem arises when principals and agents have different attitudes towards risk that cause disagreements about actions to be taken (Xingxing, 2012).

The assumptions and prescriptions of agency theory fit naturally with the issues inherent in supply chain quality management. In the process of managing supplier quality, buyers in agency relations are faced with potential problems. By their nature, buyers expect suppliers to provide good quality and to improve the quality of supplied products and/or services, but suppliers may be reluctant to invest substantially in quality, especially if they perceive that buyers are reaping all the benefits. The difference between buyers and suppliers will result in the two parties concerning themselves only with their self-interests (Xingxing, 2012).

Agency theory determines how procurement managers execute procurement practices on behalf of Public Institutions. Existence of poor principle agent relationship leads to low level of top management commitment and this also affects the relationship between institutions and the suppliers. Existence of conflict of interest amongst the agents leads to execution of procurement practices against the procurement the procurement policies and this leads to increased procurement budget and loss of procurement funds. The study thus used this model to determine the effect of transparency and accountability on implementation of procurement practices in Public Hospitals in Kenya.

2.7.4 The Principal Agent Theory

The Principal Agent Theory was modified by Bossert (1998). The Principal Agent Approach as advocated by Bossert is also known as the Decision Space Approach. Whereas the principal agent approach looks at decentralization in the context of the objectives of the principal and how the principal uses various mechanisms of control to assure that agents work toward achieving those objectives. Bossert is of the view that decentralization requires additional concepts to capture the widening range of discretion or choice allowed to agents in the process of decentralization which differentiates decentralized principal agent relationships from centralized relationship, this concept is called —decision space (Bossert, 1998). The theory looks at various functions and activities over which local authorities will have increased choice. It looks at decisions in selected functional areas. According to the theory, decisions in these areas are likely to affect the systems performance in achieving the objectives of equity, efficiency, quality and financial soundness. In this case, decisions made regarding functional areas could affect delivery care either positively or negatively.

First element is the human resources function. Bossert (1998) advocates for increased flexibility when making decisions about human resources. He particularly emphasizes that managers should be given room to hire and fire so as to increase efficiency and quality of service. However, there is need for a cautious approach as this power can be abused if not managed well. Currently, county governments guided by the national standards prescribed by an Act of Parliament (Constitution of Kenya, Article 235) are responsible for hiring and firing of staff. Each county has a public service that recruits its public servants (health workers) and undertakes disciplinary measures (KPMG, 2013).

The theory as espoused by Bossert (1998) is not devoid of weakness. One such weakness is that the theory does not touch the issue of governance in terms of political setup. The political

setup in different countries differs and Kenya's political structure is unique and its impact on devolved healthcare needs to be investigated. Second, it does not talk about service delivery function that hinges on facilities and medical supplies, an important variable in this study. Despite this weakness, the theory was seen as progressive in the sense that it is concerned with issues that matter such as equity, efficiency, quality and financial soundness. Therefore, this model was used to determine the influence of auditing on implementation of procurement practices in Public Hospitals in Kenya.

2.8 Conceptual Framework

The purpose of this study was to determine to what levels the dependent variable relies on the independent variables. The conceptual framework usually illustrates how the system of concepts, expectations, beliefs, assumptions and theories informs and support the research and forms a key part of the research design. In this study, the dependent variable is the implementation of supply chain management for Maternal Health Programmes among Public Hospitals while the independent variables include financial management, training, transparency and accountability and auditing. The Conceptual Framework which is Illustrated diagrammatically shows how these variables are related to each other (Figure 1).

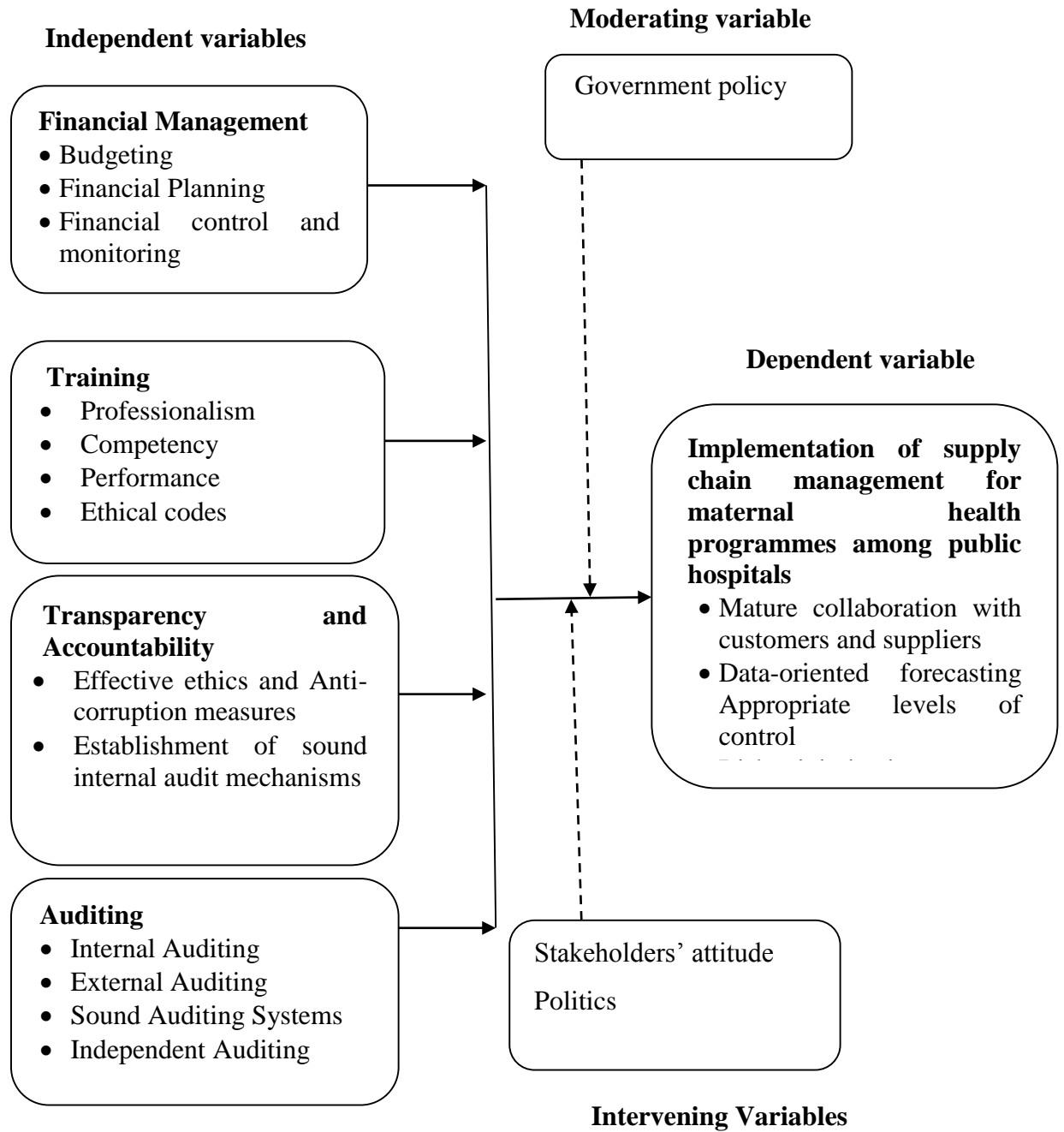


Figure 1: Conceptual Framework

2.9 Research Gap

Despite the importance of Public Sector Procurement, the number of studies which have investigated the role of Public authorities in effective supply is still limited. Studies by Thomson and Jackson (2007), DEFRA (2006) and Brulhart (2009), draw much emphasis on effective procurement in developed nations but failed to address the factors affecting adoption of effective procurement practices in developing nations. Studies by Fitzgerald (2008) and Njeru (2015) attempted to explain the status of effective procurement practices in Kenya but do not offer practical solution on how government training institutions should embrace effective procurement practices. A study by Kull and Talluri (2008) found that many government organizations in United India and Malaysia lack effective procurement policies for supporting effective implementation of procurement practices. A study by Sobczak (2008) notes that many Japanese firms that employ just in time inventory management technique have succeeded in embracing efficient procurement practices. A study by Simpson and Power (2007) found that in many African government institutions, many procurement managers are not trained on implementation of effective procurement practices since most African public institutions have not embraced effective procurement practices in Public procurement institutions.

These studies have not specifically addressed the key effective procurement practices implementation challenges hence developing a major knowledge gap on challenges facing implementation of effective procurement practices in public institutions in Kenya. This study aimed at filling the missing gaps by determining the major factors which influence the implementation of effective procurement practices in Public Training Institutions in Kenya and offering recommendations on implementation of effective procurement practices in Public Hospitals. The researcher obtained data on this aspect in Meru County.

2.10 Summary

This chapter gives a summary of existing literature on factors influencing implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Public Hospitals in accordance with the objectives. The chapter gives theoretical review, review of the variables, conceptual framework and research gaps.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Research methodology is the approach by which the meaning of data is extracted and is a continuous process. The research methodology gives the direction to following order to get answers to issues which are of concern. This chapter describes the research methods which were used to gather information on the area of the study. The chapter presents details of the research design, target population, sampling procedures, methods of data collection, validity and reliability of instruments, data collection process, methods of data analysis and ethical considerations while conducting the study.

3.2 Research Design

A research design is the overall strategy that you choose to integrate the different components of the study in a coherent and logical way, thereby, ensuring you address the research problem; it constitutes the blueprint for the collection, measurement, and analysis of data (Gorard, 2013). The study adopted a descriptive research design. A descriptive design is concerned with determining the frequency with which something occurs or the relationship between variables (Lewis, 2015). Descriptive research design was chosen because it enabled the researcher to generalize the findings to a larger population. This type of research design presents facts concerning the nature and status of a situation, as it exists at the time of the study (Creswell & Creswell, 2017). It also brings out relationships and practices that exists, beliefs and processes that are ongoing, influences that are being felt or trends that are developing.

3.3 Target population

A population is the entire group of persons or elements that have at least one thing in common. It is the mass of individuals, cases, events to which the statements of the study refer and which has to be delimited unambiguously beforehand with regard to the research question. According to Meyers, Gamst and Guarino (2016), a population is the total collection of elements about which we wish to make inferences. The target population for this study was Medical officers, Clinical Officers, Nurses, Trained Community health workers, County Health Management Team (CHMT) and County Delivery Unit Officers in Meru County as illustrated in Table 3.1.

Table 3. 1: Target Population Distribution

Population	Total	Percent
Medical officers	47	9.6
Clinical Officers	94	25.9
Nurses	166	32.1
Trained Community health workers	94	21.5
County Health Management Team (CHMT)	329	5.8
County Delivery Unit officers	166	5.1
Total	293	100.0

3.4 Sample Size and Sampling Procedure

This section describes the sample size and sampling procedures to be used in this study.

3.4.1 Sample Size

Sampling procedure for this study was guided by the research design which was mixed method. Both parametric and non-parametric methods were used hence the study employed both concurrent and sequential mixed approaches. Concurrent mixed sampling was preferred, because it allowed triangulation of results, confirm, cross validate or corroborate the findings within a single study. Concurrent sampling allowed use of a single sample generated from probability (random) and non-probability (purposive) techniques to generate data for quantitative and qualitative strands for the study using both closed and open ended survey questionnaire. A sample is a set of a particular population selected for the purpose of the study to make conclusions about the population (Larossi, 2016). A sample population of 166 was arrived at by calculating the target population of 293 with a 95% confidence level and an error of 0.05 using the below formula taken from Kothari (2004).

$$n = \frac{z^2 \cdot N \cdot \hat{p}^2}{(N - 1)e^2 + z^2 \hat{p}^2}$$

Where; n = Size of the sample,

N = Size of the population and given as 293,

e = Acceptable error and given as 0.05,

\hat{p} = The standard deviation of the population and given as 0.5 where not known,

Z = Standard variate at a confidence level given as 1.96 at 95% confidence level

3.4.2 Sampling Procedure

Stratified random sampling was used to obtain a sample from each stratum. Stratified random sampling was chosen because it ensured small groups were represented in the sample. The

categories formed strata from which the study sample was obtained. The formation of strata was based on the county officials linked to health sector making each stratum a group of units with special characteristics.

Table 3. 2: Sampling Design

Population	Total	Ratio	Sample
Medical officers	28	0.57	16
Clinical Officers	76	0.57	43
Nurses	94	0.57	53
Trained Community health workers	63	0.57	36
County Health Management Team (CHMT)	17	0.57	10
County Delivery Unit officers	15	0.57	8
Total	293		166

3.5 Research Instruments

Data collection instrument is used in research and refers to a tool which specifies and objectifies the data collecting process. Instruments are usually written and may be given directly to the subject in order to collect data or may provide objective description of the collection of certain types of data. Primary data was obtained using self-administered questionnaires. The questionnaire was made up of both open ended and closed ended questions. The open-ended questions were used so as to encourage the respondent to give an in-depth and felt response without feeling held back in illuminating of any information and the closed ended questions allowed the respondent to respond from limited options that had been stated. According to Wang (2015), the open ended or unstructured questions allow profound response from the respondents while the closed or structured questions are generally easier to evaluate. The questionnaires were used in an effort to conserve time and money as well as to facilitate an easier analysis as they are in immediate usable form.

3.6 Pilot Testing

Pilot study is the measurement of a dependent variable among subjects. Its purpose is to ensure that items in the instrument are stated clearly and have the same meaning to all respondents. In this study this involved checking whether the questions are clear and revoking any positive or negative response (Wang, 2015). Pilot testing of the research instruments was conducted where 18 questionnaires were administered to the pilot survey respondents who were chosen randomly from 20% of the sample size. After one day the same participants were requested to respond to the same questionnaires but without prior notification in order to ascertain any variation in responses of the first and the second test. This was very important in the research

process because it assisted in identification and correction of vague questions and unclear instructions. It was also a great opportunity to capture the important comments and suggestions from the participants. This helped to improve on the efficiency of the instrument. This process was repeated until the researcher was satisfied that the instrument did not have variations or vagueness.

3.7 Validity of Research Instruments

According to Creswell and Creswell (2017), validity is the accuracy and meaningfulness of inferences, based on the research results. Validity is the degree by which the sample of test items represents the content the test is designed to measure. Content validity which was employed by this study is a measure of the degree to which data collected using a particular instrument represents a specific domain or content of a particular concept. One of the main reasons for conducting the pilot study was to ascertain the validity of the questionnaire. The study used content validity which draws an inference from test scores to a large domain of items similar to those on the test. Content validity was concerned with sample-population representativeness. Gorard (2013) stated that the knowledge and skills covered by the test items should be representative to the larger domain of knowledge and skills. Expert opinion was requested to comment on the representativeness and suitability of questions and give suggestions of corrections to be made to the structure of the research tools. This helped to improve the content validity of the data that was collected. Content validity was obtained by asking for the opinion of the supervisor, lecturers and other professionals on whether the questionnaire was adequate.

3.8 Reliability of Research Instruments

Reliability of a measure indicates the extent to which it is without bias (error free) and hence ensures consistent measurement across time and across the various items in the instrument. It is an indication of the stability and consistency with which the instrument measures the concept and helps to assess the “goodness” of measure (Dwork, et al., 2015). Reliability is concerned with the question of whether the results of a study are repeatable. The questionnaire was administered to a pilot group of 18 randomly selected respondents from the target population and their responses were used to check the reliability of the tool. Reliability of the data collection instrument was done using the split half method then was calculated using Spearman Brown correlation formulae to get the whole test reliability. If the sum scale was perfectly reliable. It is expected that the two halves are correlated perfectly. A construct composite

reliability co-efficient of 0.7 or above, for all the constructs, was considered to be adequate for this study (Rousson, Gasser & Seifer, 2012).

3.9 Data Collection Procedures

The primary data was collected by using questionnaires. The use of questionnaires was based on the fact that they were suitable for a descriptive study because they are easy to administer, ensure fast delivery and the respondent can answer questions at their convenience. The questionnaires were self-administered through drop and pick later method. The researcher delivered the questionnaire and gave the selected respondent a maximum of 3 days after which the researcher collected the completed questionnaire for analysis. The researcher also assured the participants that the information they gave was treated with strict confidentiality. The researcher then proceeded to administer the questionnaires through the designated officers and co-ordinate with them to ensure respondents had adequate time to complete them. This enabled create a conducive environment for the distribution and administration of the questionnaire. Administration of the questionnaire followed the agreed schedule.

3.10 Data Analysis Techniques

Data was analyzed using Statistical Package for Social Sciences Version 25.0. All the questionnaires received were referenced and items in the questionnaire were coded to facilitate data entry. After data cleaning which entailed checking for errors in entry, descriptive statistics such as frequencies, percentages, mean score and standard deviation was estimated for all the quantitative variables and information presented in form of tables. The qualitative data from the open-ended questions were analyzed using thematic content analysis and presented in narrative form.

Inferential data analysis was done using multiple regression analysis. Multiple regression analysis was used to establish the relations between the independent and dependent variables. The multiple regression model was chosen because it is useful in establishing the relative importance of independent variables to the dependent variable (Wang, 2015). Such importance is deduced from standardized regression coefficients (beta-weights), whose magnitudes show how much relative impact the independent variables have on the dependent variable, while the negative and positive signs associated with the coefficients show negative and positive impacts respectively (Park, 2008). Also, it was ideal for the dependent variable to be recorded at a continuous level of measurement. The multiple regression model generally assumed the following equation;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where: -

Y= Implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Public Hospitals

β_0 =constant

$\beta_1, \beta_2, \beta_3, \beta_4$ and β_5 = regression coefficients

X_1 = Financial management

X_2 = Training

X_3 = Transparency and accountability

X_4 = Auditing

ε =Error Term

A One-Way ANOVA was used to test the fitness of the model. The basic principle of ANOVA is to test for differences among the means of the populations by examining the amount of variation within each of these samples, relative to the amount of variation between the samples (Kothari, 2012). Specifically, one-way (or single factor) ANOVA is a way to test the equality of three or more means at one time by using variances (Wang, 2015). The Levine's homogeneity of variance test with p value < 0.05 was interpreted to mean the ANOVA test results are significant and the study rejected the null hypothesis if computed $F > F$ critical at 95% confidence interval (Freedman, 2010). The value for the F-statistic was applied in determining the robustness of the model.

3.11 Ethical Considerations

The researcher observed the following standards of behaviour in relation to the rights of the respondents who become subject of the study or are affected by it: First by dealing with the participants, they were informed about objective of the study and the confidentiality was maintained in the study after the respondents obtained an introduction letter to enable them give informed consent. Once consent was granted, the participants maintained their right, which entailed but was not limited to withdraw or decline to take part in some aspect of the research including rights not to answer any question or set of questions and/or not to provide any data requested; and possibly to withdraw data they had provided. Caution was observed to ensure that no participant was coerced into taking part in the study and, the researcher sought to use minimum time and resources in acquiring the information required. Secondly, the study adopted quantitative research methods for reliability, objectivity and independence of the

researcher. While conducting the study, the researcher ensured that research ethics were observed. Participation in the study was voluntary. Privacy and confidentiality were also observed. The objectives of the study were explained to the respondents with an assurance that the data provided was used for academic purpose only.

3.12 Operationalization of Variables

The operationalization of variables is shown in Table 3.3.

Table 3. 3: Operationalization of variables

Objectives	Type of Variable	Indicators	Type of analysis	Tools of analysis
To evaluate the extent to which financial management influence implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya	Independent: Financial Management	<ul style="list-style-type: none"> • Budgeting • Financial Planning • Financial control and monitoring 	Descriptive statistics	Percentages Mean score
To examine how training on influence implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya	Independent: Training	<ul style="list-style-type: none"> • Professionalism • Competency • Performance • Ethical codes 	Regression analysis	Percentages Mean score
To evaluate how transparency and accountability influence implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya	Independent: Transparency and accountability	<ul style="list-style-type: none"> • Effective ethics and Anti-corruption measures • Establishment of sound internal audit mechanisms 	Descriptive statistics	Percentages Mean score
To examine how auditing influence implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya	Independent: Auditing	<ul style="list-style-type: none"> • Internal Auditing • External Auditing • Sound Auditing Systems • Independent Auditing 	Regression analysis	Percentages Mean score
	Dependent Implementation of supply chain	<ul style="list-style-type: none"> • Mature collaboration with customers and suppliers • Data-oriented forecasting • Appropriate levels of control 	Descriptive statistics	Percentages Mean score

		<ul style="list-style-type: none">• Risk minimization• Optimization of company inventory• Strategic sourcing• Technology adoption		
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CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION OF FINDINGS

4.1 Introduction

This chapter presents data analysis, presentation and interpretation of findings. The findings of the study are summarized using Tables.

4.2 Response Rate

The researcher targeted 166 respondents in order to fill the questionnaires. However, a total of 149 respondents were able to fill and return the questionnaires. This gave a response rate of 89.5% which was within Cooper and Schindler (2011) who prescribed that a significant response rate for statistical analysis must be 50% or more.

Table 4.1: Response Rate

	Number of respondents	Percent
Response	149	89.5
Non- Response	17	10.5
Total	166	100.0

4.3 Reliability Analysis

A reliability analysis was conducted using Cronbach's Alpha which measures the internal consistency by establishing whether certain items within a scale measure the same construct. The results of the reliability analysis are presented in the Table 4.2.

Table 4.2: Reliability Results

Variable	Cronbach's alpha
Financial management	0.811
Training	0.771
Transparency and Accountability	0.843
Auditing	0.766

Table 4.2 findings indicate that transparency and accountability was more reliable as shown by a coefficient of 0.843 followed by financial management as expressed by a coefficient of 0.811

then training as illustrated by a coefficient of 0.771 while auditing was least reliable as indicated by a coefficient of 0.766. All the variables were considered reliable since the results showed that their Cronbach Alpha associated were above 0.70 thresholds as recommended by Alreck and Settle (2003) who noted that Cronbach Alpha's should be in excess of 0.70 for the measurement intervals.

4.4 Background Information

The researcher sought to enquire about the general information of the respondents. This included gender, highest level of education and age. The background information of the respondents was presented in Tables.

4.4.1 Gender of the Respondents

The researcher asked the respondents to indicate their gender. This data was then summarized and presented in Table 4.3.

Table 4.3: Gender of the Respondents

Gender	Frequency	Percent
Male	87	58.4
Female	62	41.6
Total	149	100.0

The findings in Table 4.3, show most of the respondents were male as shown by 58.4% while the rest were female as illustrated by 41.6%. This shows that in data collection the researcher considered all the respondents irrespective of their gender to obtain reliable and accurate information concerning the subject under study.

4.4.2 Highest Level of Education

The respondents were also asked to indicate their highest level of education. Their responses were as shown in Table 4.4.

Table 4.4: Highest Level of Education

	Frequency	Percent
Certificate	2	1.3
Diploma	19	12.8
Degree	62	41.6
Masters	50	33.6
PhD	16	10.7
Total	149	100.0

From the findings, 41.6% of the respondents had attained a degree, 33.6% had masters, 12.8% had a diploma, 10.7% had a PhD while 1.3% had a certificate. This shows that most of the respondents had basic education to be able to respond to the questionnaires effectively and hence the information they gave could be relied upon.

4.4.3 Age bracket of the Respondent

The respondents were also required to indicate the age bracket they belonged to. Their responses are presented below in Table 4.5.

Table 4.5: Age bracket of the Respondent

	Frequency	Percent
20-30 yrs.	11	7.4
31-40 yrs.	49	32.9
41-50 yrs.	65	43.6
51 – 60 yrs.	24	16.1
Total	149	100.0

On the age of the respondents, the respondents indicated that they belonged to age bracket of 41-50 yrs. as illustrated by 43.6%, 31-40 yrs. as shown by 32.9%, 51 – 60 yrs. as shown by 16.1% and 20-30 yrs. as shown by 7.4%. This shows that most of the respondents who filled questionnaires were mature enough to give reliable data on factors influencing implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County.

4.5 Financial Management

The study sought to determine how financial management influence implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya.

4.5.1 Extent of Aspects of Financial Management Influence on Implementation of Supply Chain Management for Maternal Health Programmes

The respondents indicated the extent to which aspects of financial management influence implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya. The findings are presented on Table 4.6.

Table 4.6: Aspects of Financial Management

	Mean	Std. Dev.
Budgeting	3.65	0.58
Financial Planning	4.10	0.81
Financial control and monitoring	4.18	0.77

The findings reveal that financial control and monitoring influenced implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County to a very great extent as shown by a mean of 4.18. Financial Planning also influenced the implementation of supply chain management for Maternal Health Programmes as shown by a mean of 4.10 to a very great extent while budgeting as shown by a mean of 3.65 influenced the implementation of supply chain management for Maternal Health Programmes to a great extent.

The respondents further gave their opinions on how the above aspects of financial management influence implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya. The responses revealed that; lack of financial control and monitoring creates avenues for corruption and mismanagement of funds and resources, budgeting regulates prices for health services, financial management results into better quality service delivery and good financial management practices enhance transparency and accountability.

4.6 Training

The study sought to establish how training influence implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya.

4.6.1 Extent of Aspects of Training Influence on Implementation of Supply Chain Management for Maternal Health Programmes

The study asked the respondents to indicate the extent to which the aspects of training influence implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya. Table 4.7 displays the results.

Table 4. 7: Aspects of Training

	Mean	Std. Dev.
Professionalism	3.58	0.61
Competency	4.17	0.55
Performance	3.86	0.83
Ethical codes	3.68	1.00

The respondents indicated that competency as shown by a mean of 4.17 influenced implementation of supply chain management for Maternal Health Programmes to a very great extent. Further, performance as shown by a mean of 3.86, ethical codes as shown by a mean of 3.68 and professionalism as shown by a mean of 3.58 were found to influence implementation of supply chain management for Maternal Health Programmes to a great extent.

Further, the study sought the respondents' opinions on how the above aspects of training influence implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya. The responses were that; training enhances professionalism as one recognises wrong from right procedures and quality of work depends on the staff's competence.

4.7 Transparency and Accountability

The study sought to assess how transparency and accountability influence implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya.

4.7.1 Extent the Aspects of Transparency and Accountability Influence on Implementation of Supply Chain Management for Maternal Health Programmes

The study sought to find the extent transparency and accountability influenced implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya. The findings are shown in Table 4.8.

Table 4.8: Aspects of Transparency and Accountability

	Mean	Std. Dev.
Effective ethics and Anti-corruption measures	4.03	0.94
Establishment of sound internal audit mechanisms	3.99	0.90

As per the findings, effective ethics and anti-corruption measures influenced implementation of supply chain management for Maternal Health Programmes to a very great extent as shown by a mean of 4.03 while establishment of sound internal audit mechanisms as shown by a mean of 3.99 influenced implementation of supply chain management for Maternal Health Programmes to a great extent.

The respondents further gave their opinions on how the above aspects of transparency and accountability influence implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya. The responses included; effective ethics and anti-corruption measures enhances access of public information to citizens, also it ensures that workers are answerable and responsible in their area of work, it also makes sure that there are consequences for irresponsibility and minimises cases of corruption.

4.8 Auditing

The study sought to determine how auditing influence implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya.

4.8.1 Extent the Aspects of Auditing Influence Implementation of Supply Chain Management for Maternal Health Programmes.

The study sought to establish the extent to which aspects of auditing influence implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya. The findings are presented in Table 4.9.

Table 4.9: Aspects of Auditing

	Mean	Std. Dev.
Internal Auditing	4.02	0.70
External Auditing	3.82	0.82
Sound Auditing Systems	3.96	0.76
Independent Auditing	3.84	0.83

The findings reveal that internal auditing influenced the implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County to a very great extent as shown by a mean of 4.02. Further, the study found that sound auditing systems as shown by a mean of 3.96, independent auditing as shown by a mean of 3.8 and external auditing as shown by a mean of 3.82.

Further, opinions from respondents on how the above aspects of auditing influence implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya include; promotes integrity, reduces financial scandals and the public becomes confident in the services provided.

4.9 Implementation of Supply Chain Management for Maternal Health Programmes Among Public Hospitals

The study sought to determine the trend of the aspects of implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya for the last five years. The findings are shown in Table 4.10.

Table 4. 10: Aspects of Implementation of Supply Chain Management

	Mean	Std. Dev.
Mature collaboration with customers and suppliers	3.93	0.63
Data-oriented forecasting appropriate levels of control	4.01	0.82
Risk minimization	4.35	0.68
Optimization of company inventory	3.77	0.88
Strategic sourcing	3.62	0.98
Technology adoption	3.82	0.66

Table 4.10, show risk minimization with a mean of 4.35 and data-oriented forecasting appropriate levels of control as shown by a mean of 4.01 had greatly improved for the last five years. The study also found that mature collaboration with customers and suppliers as shown by a mean of 3.93, technology adoption as shown by a mean of 3.82, optimization of company inventory as shown by a mean of 3.77 and strategic sourcing as shown by a mean of 3.62 had improved in the last five years.

The respondents gave their opinion on what should be done in order to improve implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya. The respondents indicated that; the Public Hospitals should have a compatible communication and information system with their supplier, the hospitals should recruit and continuously train supply chain management staff on how to improve on the efficiency of supply chain management, the management should develop plans that will ensure that budget is well allocated in every department in the hospital and that there should be formulation of policies to enhance frequent identification of potential risk in supply chain and on-site investigation of existence of risk.

4.10 Regression Analysis

The researcher conducted a multiple regression analysis so as to test relationship among variables that is independent and dependent variables. The researcher applied the statistical package for social sciences to code, enter and compute the measurements of the multiple regressions for the study. The findings are shown in Table 4.11.

Table 4. 11: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.818	0.668	0.663	0.646

From the findings in Table 4.11, it was found out that the adjusted R^2 was 0.663. This implies that financial management, training, transparency and accountability and auditing explained only 66.3% of the variations in implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County which meant that there were other factors accounting for 33.7% variations in implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County that were not covered in this study.

This prompted for further studies in order to uncover the other factors that influence implementation of supply chain management for Maternal Health Programmes among Public Hospitals not covered. The findings are shown in Table 4.12.

Table 4. 12: ANOVA Results

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	226.01	4	56.503	72.568	1.56E-62
Residual	112.12	144	0.779		
Total	338.13	148			

The study results in Table 4.12 show that p-value was 0.000 and the F-calculated was 72.568. Since p-value was less than 0.05 and F-calculated was greater than F-critical (2.4472), it was clear the influence of financial management, training, transparency and accountability and auditing on implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County were significant. The results on regression coefficient are given in Table 4.13.

Table 4. 13: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.818	0.283		2.890	.004
Financial Management	0.811	0.236	0.743	3.436	.001
Training	0.706	0.199	0.621	3.548	.000
Transparency and Accountability	0.791	0.228	0.644	3.469	.001
Auditing	0.613	0.198	0.506	3.096	.002

The established model for the study was: $Y = 0.818 + 0.811X_1 + 0.706X_2 + 0.791X_3 + 0.613X_4 + e$

The results reveal that implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County will be 0.818 if all other factors are held constant. Further, the study showed that if there was a unit change in financial management, a

0.811 increase in the implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County would be realized if all other factors are held constant. This variable was significant since 0.001 was less than 0.05.

Moreover, it was clear that a unit increase in training increases the implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County by 0.706 if other factors were held constant. This variable was significant since 0.000 was less than 0.05.

Further, the study found that if all other factors are held constant, transparency and accountability increase leads to 0.791 increase in the implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County. Since 0.001 was less than 0.05, this variable was significant.

The study results also showed that an increase in auditing can lead to a 0.613 increase in implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County if all other factors are held constant. Since 0.002 was less than 0.05, this variable was significant.

Overall, financial management was found to be having the greatest effect on the implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, followed by transparency and accountability then training while auditing had the least implementation of supply chain management for Maternal Health Programmes among Public Hospitals. All the variables were significant since their p-values were less than 0.05.

CHAPTER FIVE
SUMMARY OF FINDINGS, DISCUSSION, CONCLUSION AND
RECOMMENDATIONS

5.1 Introduction

This chapter presents summary of the findings, discussions, conclusions and recommendations. The conclusions and recommendations drawn focused on the objective of the study.

5.2 Summary of the Findings

The study sought to determine how financial management influence implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County. The study found that financial control and monitoring influenced implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County to a very great extent. Financial Planning also influenced the implementation of supply chain management for Maternal Health Programmes to a very great extent while budgeting influenced the implementation of supply chain management for Maternal Health Programmes to a great extent. Financial management had a strong and positive relationship with the implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, thus, it was statistically significant.

The study sought to establish how training influence implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County. Competency influenced implementation of supply chain management for Maternal Health Programmes to a very great extent. Further, performance, ethical codes and professionalism were found to influence implementation of supply chain management for Maternal Health Programmes to a great extent. The study found that training had a significant effect on the implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County.

The study sought to assess how transparency and accountability influence implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County.

The study found that transparency and accountability had a significant effect on the

implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County. The study also found that effective ethics and anti-corruption measures influenced implementation of supply chain management for Maternal Health Programmes to a very great extent while establishment of sound internal audit mechanisms implementation of supply chain management for Maternal Health Programmes to a great extent.

The study sought to determine how auditing influence implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County. The study also found that internal auditing influenced the implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County to a very great extent. Further, the study found that sound auditing systems, independent auditing and external auditing influenced implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County to a great extent. The study further established that auditing has a significant effect on the implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County.

5.3 Discussion of the Findings

This section entails further discussion on the findings of each variable.

5.3.1 Financial Management

It was found that financial control and monitoring influenced implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County to a very great extent. Financial Planning also influenced the implementation of supply chain management for Maternal Health Programmes to a very great extent while budgeting influenced the implementation of supply chain management for Maternal Health Programmes to a great extent. Financial management had a strong and positive relationship with the implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, thus, it was statistically significant. These findings are in line with Sarr (2015) note that the potential for misallocation arises mainly from problems in the relationships between principals and agents, whereby the incentives of the principals (i.e. the voters) and the agents (i.e. elected and appointed public officials) are misaligned and information asymmetries exist that agents can exploit to their advantage.

5.3.2 Training

It was found that Competency influenced implementation of supply chain management for Maternal Health Programmes to a very great extent. Further, performance, ethical codes and professionalism were found to influence implementation of supply chain management for Maternal Health Programmes to a great extent. These findings are in line with Saunders (1997) who believed that successful functioning of organizational structures and effective operation of planning control systems is dependent on the quality and ability of staff employed. Plans need to consider the current state of development of the procurement function and the strategic direction in which its state might change. Education, training and professional development should be skill, process oriented and continuous.

It was found that training had a significant effect on the implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County. This concurs with Lysons (1998) who states that ethical training sessions serve a purpose of reinforcing the organization's ethical codes and policies, reminding staff that top management expects participants to consider ethical issues and clarify what is and what is not acceptable. Training also leads to better performance of a project as the staff is confident in the work done.

5.3.3 Transparency and Accountability

It was found that transparency and accountability had a significant effect on the implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County. The study also found that effective ethics and anti-corruption measures influenced implementation of supply chain management for Maternal Health Programmes to a very great extent while establishment of sound internal audit mechanisms implementation of supply chain management for Maternal Health Programmes to a great extent. These findings are in line with Segal and Summers (2002) who noted that lack of accountability creates opportunities for corruption. Thus, a measure of moral standing among Individuals and institutions must exist to check on their excesses and more so when these act in contradistinction to their calling. Transparency and Accountability is expected to arrest such vices as corruption, enshrine appropriate work ethics and prevent other underhand deals that disadvantage the public with regard to service delivery.

5.3.4 Auditing

The study findings show that internal auditing influenced implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County to a very great extent. Further, the study found that sound auditing systems, independent auditing and external auditing influenced implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County to a great extent. The study further established that auditing has a significant effect on the implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County. The findings are in agreement with those reported by Bota-Avram, Popa and Stefanescu (2011) who noted that the performance of auditing can be narrowed down based on; employee experience; auditing viewed by the audit committee; management expectations of internal auditing; level of audit recommendations implemented; and auditor education levels. Auditor independence would be enhanced by a policy requiring that the independent auditor be replaced at the end of the audit contract, as is often the case in the private sector.

5.4 Conclusion

It is concluded from the study that planning is essential in project implementation as it's fundamental for the project implementing team to understand the project and all the specifics in project execution. It is also concluded that the staff should be made aware at the planning stage of what they are expected to do and the consequences of not sticking to the rules so as to avoid cases of corruption and mismanagement of resources.

It is also concluded that the Public Hospital structure plays a very critical role in ensuring that the project implementation runs smoothly devoid of any institutional barriers that can be attributed to the hospital administration. The study concludes that hospital management forms the heart of administrative support towards project implementation. Of key importance the study makes a conclusion that the project should have adequate, experienced and qualified personnel in relation to budgeting, donor protocols, organization procedures, implementation, monitoring and evaluation.

It is also concluded that the mechanism for engaging stakeholders should be well devised at the planning stage to prevent disputes in the course of project implementation. It is further concluded that the stakeholders have considerable influence on the decision making and problem-solving

processes in the course of project implementation. It is concluded that the stakeholders help in improving on reporting and project performance and the community should be involved as part of the stakeholders to encourage transparency and accountability.

5.5 Recommendations

It is recommended that organizations which offer Health Services and conduct Health Projects which are funded by donors should strengthen up their monitoring and audit systems on financial management. This is critical as it helps in keeping up high standards for financial accountability which was the perquisite in raising donor confidence in offering more funds.

It is recommended that formulation of operational strategy for implementing health projects should be the foundational framework through which guides the project implementation. It is also recommended that all the teams and stakeholders involved in implementing a given project, should be privy on all the specifics of the project.

It is recommended also that capacity building be the central factor before the commencing of a particular project. This hospital leadership should take charge in ensuring that every phase of the whole project have adequate personnel, whom have the operational pedigree to deliver on their duties as assigned in different phases of the project.

It is further recommended that during implementation of health projects, the responsible organizations should ensure partnerships with all the stakeholders in the execution of the project. The partnership should be all through from the initial stages of planning through the final implementation phases. It is also recommended that the hospitals should adopt compatible communication and information system with their supplier because information sharing and data exchange plays a major role in reducing lead time and reducing chances of stock out and improving on quality.

It is further recommended the managers of Public Hospitals should recruit and continuously train supply chain management staff on how to improve on the efficiency of supply chain management. The managers should also recruit competent staff with Knowledge and Skills on SCM and the recruitment process should be based on professional qualifications and experience in supply chain management functions. Managers of Public Hospitals should ensure that budget is well allocated in every department in the hospitals.

The government should come up with a policy requiring suppliers to have compatible information system with public institutions. This study recommends that the government of Kenya should formulate policies to enhance frequent identification of potential risk in supply chain and on-site investigation of existence of risk.

The study found that the Government Ministries in Kenya were not updating their procurement risk register and other public assets disposal documents. The study also recommends that the government ministries should ensure full adoption of information technology in procurement and supply chain departments. It is recommended that the Government of Kenya should ensure that supply chain Departments in Public Hospitals frequently conduct risk audit, risk analysis and regular risk check-ups.

5.6 Recommendations for Further Studies

The study was mainly centralized on the factors influencing implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County. This study mainly covered scope of implementation and the main issues which influenced the realization of implementation objectives. It is suggested that future scholars should try and expand the scope on other factors which arise in implementation and assess in indicators for success the implementation of the project.

This research study was conducted in Public Hospitals in Meru County and hence the findings cannot be generalized to other Public Hospitals. The findings of the study suggest country further studies on influence of supply chain management practices on performance of other institutions in Kenya such as parastatals, manufacturing or banking. There is need of doing research on the conventional accepted supply chain management practices for harmonization and improvement on the overall performance of the public and private sector. The relationship between e- procurement and supply chain management practices should also be researched in order to improve on the body of knowledge on supply chain management practices and performance.

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APPENDICES

Appendix I: Letter of Transmittal

Consolata Muthoni

P.O.Box 3054

Meru

Dear Respondent,

Re: Request for filling Questionnaire

I am a student taking a Master of Arts Degree in Project Planning at the University of Nairobi, and I am carrying out a study on factors Influencing Implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya

You have been identified as one of the person who could be of assistance with the research and I thus request your participation in the research. Essentially, you would be required to complete a questionnaire. You will be treated anonymously and your responses will be treated with utmost confidentiality. The information you provide will be used only for academic purposes.

The questionnaire is strictly for academic purposes and any information given will be treated with strict confidentiality. Please give information as accurately as possible. Thank you very much.

Yours faithfully,

Consolata Muthoni

L50/9827/2018

Appendix II: Research Questionnaire

Instructions

Answer all questions as indicated by either filling in the blank spaces or ticking the option which applies.

SECTION A: Background Information (Please tick (√) appropriate answer)

1) Please indicate your gender: Female [] Male []

2) State your highest level of education

Certificate [] Diploma [] Degree [] Masters [] PhD []

Others (Specify) -----

3) Please Indicate your age bracket 20-30 yrs [] 31-40 yrs []

41-50 yrs [] 51 – 60 []

PART B: Factors Influencing Implementation of Supply Chain Management for Maternal Health Programmes Among Public Hospitals in Public Hospitals

Financial management

4) To what extent do the following aspects of financial management influence implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya?

Very great extent [5] Moderate extent [3] Very low extent [1]

Great extent [4] Low extent [2]

	Very great extent	Great extent	Moderate extent	Low extent	Very low extent
Budgeting					
Financial Planning					
Financial control and monitoring					

5) In your own opinion, how do the above aspects of financial management influence Implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya?

.....

.....

Training

6) To what extent do the following aspects of training influence Implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya?

Very great extent [5] Moderate extent [3] Very low extent [1]
 Great extent [4] Low extent [2]

	Very great extent	Great extent	Moderate extent	Low extent	Very low extent
Professionalism					
Competency					
Performance					
Ethical codes					

7) In your own opinion, how do the above aspects of training influence Implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya?

.....

.....

Transparency and accountability

8) To what extent do the following aspects of transparency and accountability influence Implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya?

Very great extent [5] Moderate extent [3] Very low extent [1]
 Great extent [4] Low extent [2]

	Very great extent	Great extent	Moderate extent	Low extent	Very low extent
Effective ethics and Anti-corruption measures					
Establishment of sound internal audit mechanisms					

9) In your own opinion, how do the above aspects of transparency and accountability influence Implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya?

.....

Auditing

10) To what extent do the following aspects of auditing influence Implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya?

Very great extent [5] Moderate extent [3] Very low extent [1]
 Great extent [4] Low extent [2]

	Very great extent	Great extent	Moderate extent	Low extent	Very low extent
Internal Auditing					
External Auditing					
Sound Auditing Systems					
Independent Auditing					

11) In your own opinion, how do the above aspects of auditing influence Implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya?

.....

Implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya

What is the trend on in the following aspects of Implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya for the last five years?

1= Greatly decreased 2= Decreased 3= Constant 4= Improved 5= Greatly Improved

	Greatly decreased	Decreased	Constant	Improved	Greatly Improved
Mature collaboration with customers and suppliers					
Data-oriented forecasting appropriate levels of control					
Risk minimization					
Optimization of company inventory					
Strategic sourcing					
Technology adoption					

12) In your own opinion, give one recommendation on what should be done in order to improve implementation of supply chain management for Maternal Health Programmes among Public Hospitals in Meru County, Kenya ?

.....

Thank You for Your Participation

Appendix III: Plagiarism Report