

**THE INFLUENCE OF DEVOLVED HEALTHCARE SYSTEM ON DELIVERY
OF HEALTH SERVICES IN MERU COUNTY, KENYA**

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REQUIREMENTS FOR THE CONFERMENT MASTER OF HEALTH
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DECLARATION

I declare that this thesis is my original work and has not been presented in any other university.

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APPROVAL

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ABSTRACT

The promulgation of the Constitution of Kenya, 2010 birthed devolution. After the General Elections held on 4th of March of 2013, devolution of various public functions including healthcare gained momentum. However, challenges facing around the delivery of public healthcare exist. The influence of devolution on the delivery of health services in Kenya had not been evaluated, necessitating this study. The study analyzed how the various components of devolution, including devolved healthcare financing, devolved leadership, devolved healthcare workforce, and devolved medical supply system influence delivery of health services in Meru County, guided by the sequential theory of decentralization and systems theory. A descriptive survey research design was adopted. All the healthcare managers and members of the Sub-County Hospital Management Committees in Meru County council and Meru Level V Hospital Committee totaling 168 comprised the study population. One hundred and sixty eight (168) respondents were required to get a representative sample of healthcare managers in Meru County. A self-administered questionnaire was to collect data. The instruments' validity and reliability were assessed and data analysis done using version 24 of the Statistical Package for Social Sciences software. Data was screened for completeness and variables with missing or complete data deleted. Cases with >20% missing responses and outliers were also excluded. Data was analysed using descriptive statistics and logistic regression. Descriptive and inferential statistics were used to link the predictor or explanatory independent variables to the outcome or response variable. Of the 168 questionnaires sent out, 112 were returned, translating to a response rate of 66.7%. Most respondents were undergraduates (51.8%) and had than three years of experience (35.7%) in their current capacity. Close to a third (30.4%) had held a managerial position for 3-5 years at the time of the study. A majority (59.0%) concluded that the delivery of healthcare services was efficient and that devolved financing (85.7%), devolved leadership (57.1%), devolved healthcare workforce (81.2%) and devolved medical supply system (60.7%) was optimal. In multivariable logistic regression, suboptimal devolved healthcare financing lowered health service delivery 0.735 fold significantly (P=0.042). Having suboptimal devolved leadership lowered health service delivery 0.525 fold statistically significantly (P=0.028). Suboptimal healthcare workforce lowered health service delivery 0.194 fold statistically significantly (P=0.03), while suboptimal devolved medical supply system lowered health service delivery 0.116 fold statistically significantly (P<0.01). Based on the findings, health facilities should seek additional financing to supplement the traditional income in order to cover operational costs and procure state-of-the-art equipment. The management should recruit qualified personnel such as nurses and supporting staff to avoid gaps in service delivery. Medicine or drug allotment should be prioritized on need basis to avoid stock outs, thus ensuring reliable supplies. A similar study should be done in different counties, preferably those in urban areas, where there has been doctors and nurses strikes.

DEDICATION

This thesis is dedicated to my family for all their support during my study period. To my late son Giovanni Mario and my husband Joseph Mario who have supported me throughout this journey. It is also dedicated to all health workers and health managers who tirelessly work to ensure that our health systems deliver the promise of better health to the deserving patients and clients in health sector.

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TABLE OF CONTENTS

DECLARATION	i
ABSTRACT.....	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENTS.....	v
LIST OF TABLES	viii
LIST OF FIGURES	ix
ABBREVIATIONS AND ACRONYMS	x
CHAPTER ONE	1
INTRODUCTION	1
1.1 Background	1
1.2 Statement of the Problem.....	7
1.3 Objectives of the Study.....	9
1.4 Null Hypotheses.....	9
1.5 Justification of the Study	10
1.6 Scope of the Study	11
1.7 Limitations of the Study.....	12
1.8 Delimitation of the Study.....	13
1.9 Significance of the Study.....	13
1.10 Operational Definition of Terms.....	14
CHAPTER TWO	16
LITERATURE REVIEW	16

2.1	Introduction.....	16
2.2	Empirical Review.....	16
2.3	Theoretical Review	28
2.4	Conceptual Framework	31
CHAPTER THREE		33
RESEARCH METHODOLOGY		33
3.1	Introduction.....	33
3.2	Research Design.....	33
3.3	Study Site	34
3.4	Target Population.....	34
3.5	Sample Size and Sampling Procedure	35
3.6	Research Instruments	35
3.7	Validity of the Research Instruments.....	36
3.8	Reliability of the Research Instrument.....	37
3.9	Data Collection Procedure	37
3.10	Data Analysis	37
3.11	Ethical Considerations	40
CHAPTER FOUR.....		41
RESEARCH FINDINGS, INTERPRETATION AND DISCUSSION		41
4.1	Introduction.....	41
4.2	Response Rate	41
4.3	Reliability Test Results	41
4.4	Socio-demographic Characteristics.....	42

4.5	Descriptive Analysis of the Study Variable	44
4.6	Hypotheses Testing	62
CHAPTER FIVE		67
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.....		67
5.1	Introduction.....	67
5.2	Summary of the findings.....	67
5.3	Conclusions	69
5.4	Recommendations	70
5.5	Suggestions for Further Research	71
REFERENCES		73
APPENDICES		80
APPENDIX I: INFORMED CONSENT FORM.....		80
APPENDIX II: INFORMED CONSENT (KISWAHILI)		83
APPENDIX III: RESEARCH QUESTIONNAIRE.....		86
APPENDIX IV: ETHICAL CLEARANCE CERTIFICATE.....		92
APPENDIX V: NACOSTI CLEARANCE CERTIFICATE		94
APPENDIX VI: MERU DEPARTMENT OF HEALTH CLEARANCE		95
APPENDIX VII. MAP OF KENYA SHOWING MERU COUNTY		96

LIST OF TABLES

Table 3.1: Distribution of Study Population	34
Table 4.1. Results of Reliability Testing	42
Table 4.2: Omnibus Tests of Model Coefficients	63
Table 4.3: The Model Summary	63
Table 4.4: Hosmer and Lemeshow Test.....	64
Table 4.5: Multivariate logistic regression results	64

LIST OF FIGURES

Figure 2.1. Conceptual framework	32
Figure 4.1. Educational level of members in the Hospital Management Committees	43
Figure 4.2. Experience of members in the Hospital Management Committees	44
Figure 4.3: Perceptions on delivery of health services	46
Figure 4.4: Descriptive Statistics for Devolved Healthcare Financing.....	48
Figure 4.5. Descriptive Statistics for Devolved Leadership	51
Figure 4.6: Descriptive Statistics for Devolved Health Care Workforce	55
Figure 4.7: Descriptive Statistics for Devolved Medical Supply System.....	59

ABBREVIATIONS AND ACRONYMS

ACT:	Atremisinin-Based Combination Therapies
ANC:	Antenatal Care
CD4:	Cluster of Differentiation 4
CHS:	Centre for Health Solutions
EMMS:	Essential Medicines and Medical Supplies
HRH:	Human Resources for Health
KEMU:	Kenya Methodist University
KEPI:	Kenya Expanded Program on immunization
NACOSTI:	National Council of Science, Technology, and Innovation
SSA:	Sub-Saharan Africa
SPSS:	Statistical Package for Social Sciences
UK:	United Kingdom
WHO:	World Health Organization

CHAPTER ONE

INTRODUCTION

1.1 Background

Devolution refers decentralization of the authority of the central government to a lower level of government, which can be a state, district, province, county or local government. The form of devolved governments and the extent of devolution of various functions and services vary in various countries. Devolution generally encapsulates the decentralization of various functions to devolved units of governance.

Decentralization requires responsibility and accountability since it involves management of resources such as the health workforce (nurses and doctors) and finances (Williamson & Mulaki, 2015). According to Regmi et al., (2010) and Nyongesa et al., (2015), devolution involves a wide range of events whose results include transfer of decision-making, authority, and “power” to the grassroots governments.

Successful devolution is associated with far-reaching benefits. According to Regmi et al., (2010), there is an improvement in management, access, and utilization health services in countries where devolution has been effectively managed. In the same breadth, it is postulated that health facilities in such countries have adequate health staff, drugs and other medical supplies are ever available, and patient needs are attended quickly.

Against this backdrop, however, there exist crucial challenges in some countries in spite of the elaborate implementation of decentralized healthcare (Okorafor & Thomas, 2007). The challenges in this respect include expenditure queries manifested in delayed and/or inadequate disbursement to various health facilities where favoritism and political networks take precedence. The foregoing challenges oblige public health facilities to resort to extraneous ways of generating requisite funds (Bossert et al., 2003).

Decentralization of healthcare in European countries has had diverse outcomes. It has improved the efficiency of service delivery; patient-centered health provision, the capacity to innovate, and a boost in cost consciousness are some of the positive outcomes of decentralization in county councils. Another gain of decentralization is improvement in the accountability of local, regional, and higher authorities (Jommi & Fattore, 2003).

According to Arrowsmith and Sisson (2003), decentralized further resulted in the change of the organizations of the operations of hospitals such as working times and boost in the implementation of healthcare strategies on a needs basis (Jervis & Plowden, 2003). However, in relation to healthcare decentralization there has been great concern in some European countries particularly in respect of inequity (Jommi & Fattore, 2003).

The United Kingdom (UK) consists of four autonomous countries, which are Northern Ireland, Wales, England, and Scotland. The devolution particularly of the healthcare was initiated at the end of the 20th century. A report commissioned by the Nuffield Trust, which has had an interest in the devolution system of healthcare industry of the United

Kingdom (UK), underscored the fact that these countries have followed diverse paths in healthcare since it was devolved (Connolly et al., 2010).

The report indicated that the benefits to patients vis-a-vis the taxpayer investment varied considerably. Wales, Scotland, and Northern countries compared to England, Ireland received more funding. However, the three countries were more likely to perform worse on waiting time and crude productivity of their healthcare workforce. According to the report, there was inadequate scrutiny of the productivity of healthcare across the four nations, even with the stringent economic climate, and the extent of funding of public health services in the devolved nations by England's taxpayers (Connolly et al., 2010).

In Pakistan, devolution was implemented in 2001 after the military regime promulgated a local government plan in 2000. The aim of the promulgation was to expand democracy to local levels, increasing accountability, and improve service delivery to residents, which includes healthcare. In tandem with devolution, delivery of most healthcare services was decentralized from the provincial administration to districts (Ansari et al., 2011).

A report by the Social Policy and Development Centre [SPDC] (2007) inferred that devolution had not realized the intended changes in health indicators. It also pointed out challenges in implementation of devolution in Pakistan. In addition, it was reported that major provincial government responsibilities were devolved to district governments.

However, the transfer of responsibilities was not accompanied with transfer of requisite funding.

The findings of this report were in agreement with a 2007 health system review mission by the World Health Organization (WHO), which reflected a mixed picture in respect of decentralized health services. The review mission recommended an improvement in planning and managerial skills at both provincial and district levels of governance to execute their roles and responsibilities well (World Health Organization [WHO], 2007).

Another report by the WHO (2014) shows that Sub-Saharan Africa (SSA) grapples with an array of public health problems. A robust healthcare system and workforce that can provide reliable health care services and as such are thus required addressing these challenges. However, the region lacks well-equipped education systems to train healthcare professionals to tackle the drawbacks of the 21st century WHO (2015).

WHO advocates for a transformative agenda for the education of healthcare personnel and workforce and underscores the importance of competencies in reference to patient-centered care (Hurley et al., 2018). A number of countries in Africa have already adopted health system decentralization to address managerial, operational, and political, managerial issues in regard of systemic efficiencies and cost effectiveness. Politically, decentralization is likely to reflect the concerns of the citizens at the grassroots. Managerial challenges, on the other hand, devolution are bound to minimize bureaucracy

and red tape that is often associated with lengthy execution of decisions made by centralized government. In terms of operations, decision-making should be rapid and should occur much closer to the workplace, thus enhancing the quality of leadership of management and boosting employee morale.

South Africa and Rwanda are a case in point. Rwanda has transferred several functions from the provincial administration to local governments. South Africa was encouraged to pursue the Rwanda's devolution model. South Africa's model has hitherto reached the provincial level but is yet to cascade down to lower levels of governance (Watts, 2007).

According to Hendricks et al., (2014), the health system in South Africa has already been structure with significant level of decentralization. It is a requirement for several further steps to be undertaken in decentralizing the country's health system in tandem with the creation of District Health Authorities. In the same breadth, it is held that failure to properly design and/or effectively implement, decentralization is likely to occasion increased inequalities and inefficiencies in the delivery of health services thus creating new problems while exacerbating existing ones.

In 2010, Kenya promulgated a Constitution that replaced the then powerful two-tiered/ centralized form of government (Centre for Health Solutions – Kenya, 2014). Essentially, the Constitution created devolved form of government, which established 47 Counties that assumed the geographical boundaries of districts at independence.

The Counties are governed by their own, who makes them relatively autonomous governments in respect of budgetary allocation including for healthcare. The healthcare system in Kenya is one of the devolved functions to County Governments (Republic of Kenya, 2014).

The 2010 Constitution of Kenya also devolved health functions to the 47 counties across the country including Meru County. In the devolved arrangement, the National Government has the mandate of formulating health policies in addition to coordination, capacity building, and technical assistance to the County Governments in relation to the same (Republic of Kenya, 2014).

It is asserted that this strategy is alive to the transformations brought about by the implementation of the Constitution, which has an unprecedented impact on the healthcare workforce. About budget allocation, the health sector receives approximately 40% public funding in Counties in the 2012-2013 budget, which translated to Kshs 54 billion. Further statistics indicated that the national healthcare budget was increased and that about 33% of the said budget was devolved to County governments in the 2013/2014 financial year.

However, the available data showed a decline in the expenditure of public health funds in the same year. This was interpreted to mean that not all budgeted health funds were used to improve or set up extend healthcare services (World Bank Group, 2014). Challenges of devolved functions including the healthcare have emerged a poor working conditions,

poor management, fear for ethnicity, delayed salaries, and poor distribution of resources among other problems (Centre for Health Solutions – Kenya, 2014).

Moreover, after the healthcare was devolved in Kenya, there was a general fear among healthcare staff in respect of their job security. In concurrence, devolving health service delivery to the counties has raised growing in the medical fraternity characterized by key public health professionals preferring to exit the public service for the private or not for profit sectors in search of greener pastures, and in some instances, they have quit as practitioners altogether (Republic of Kenya, 2014).

According to Kiambati et al., (2013) this issues has occasioned many implications for healthcare workforce. It was thus imperative to analyze the implications of devolution on delivery of healthcare in devolved governments in Kenya.

1.2 Statement of the Problem

There has been conspicuous disparity between the healthcare budgetary allocation and the funds actually spent to dispense health services at County levels. This is exemplified by the increment in healthcare budgetary allocation to about 67% in the 2013/2014 financial year. Yet, this did not translate to the funds eventually improving healthcare (World Bank Group, 2014). In respect of medical equipment, it is evident that devolution had improved their condition and increased their number. However, access to devolved healthcare has been significantly low.

Gimoi (2017) study found that most health facilities served between 5000 and 10000 people on average, which is against the projected 30,000 people. Moreover, according to Waithaka et al., (2018), unrest of health staff has been a thorn in the flesh of county governments thus affecting health service delivery.

Kiambati et al., (2013) further noted that devolution of health services has resulted in growing discontent within the medical fraternity with personnel preferring to leave the public service system for green pastures elsewhere or ceasing to be health practitioners altogether. The foregoing illustrates a clear disconnect between the expected benefits of devolving the healthcare and facts on the ground regarding delivery of health services.

Meru County, on the advent of devolution was among the nine counties in the bottom third in Kenya for over 50% of the 16 county-level health input indicators, suggesting that its capacity to deliver healthcare services to residents under the devolved system is questionable (Barker et al., 2014). Thus, the government has devolved almost the entire health function. However, this has not been accompanied by sufficient pertinent human resource, technical, financial and leadership support.

Local studies on devolved healthcare (Gimoi, 2017; Kiambati et al., 2013; Waithaka et al., 2018) have adequately articulated the impact on devolution of health systems on the delivery of public health services in Kenya particularly in reference to Meru County.

This study was designed to fill this gap by bridging the identified knowledge and research gaps by examining the association between health service delivery and devolved healthcare in Kenya by focusing particularly on Meru County.

1.3 Objectives of the Study

The study addressed both the general and specific objectives as highlighted hereunder.

General Objective

To evaluate the influence of devolved healthcare system on delivery of health services in Meru County, Kenya.

Specific Objectives

- i. To examine the influence of devolved healthcare financing on delivery of health services in Meru County.
- ii. To analyze the influence of devolved leadership on delivery of health services in Meru County.
- iii. To assess the influence of devolved healthcare workforce on delivery of health services in Meru County.
- iv. To examine the influence of devolved medical supply system on delivery of health services in Meru County.

1.4 Null Hypotheses

The following hypotheses were formulated and tested:

H₀₁ Devolved healthcare financing does not influence the delivery of health services in Meru County.

H₀₂: Devolved leadership does not influence the delivery of health services delivery in Meru County.

H₀₃: Devolved healthcare workforce does not influence the health services delivery in Meru County.

H₀₄: Devolved medical supply system does not influence the delivery of health services in Meru County.

1.5 Justification of the Study

The health sector is very fundamental in that a health nation propels the socio-economic wellbeing of a country. Granted that the core objective of devolution was to extend health services among others closer to the citizenry, and then it is imperative to investigate the effectiveness of devolution of healthcare. With many challenges affecting the public health sector particularly since the decentralization of the health function to county governments in 2013; it is crucial to come up with ways of addressing the situation.

According to Barker et al., (2014), at the onset of devolution, Meru County was identified as one of the few counties that were ranked in the bottom third in respect of more than half of the 16 indicators for health input at the County-level. The indicators are the

number of functional theatres per hospital, primary care centers with an antenatal ward, ambulances (total number) found in each hospital, the count of refrigerators for Kenya

Expanded Program on Immunization (KEPI) in child health facilities, family planning units, and maternal units; and in all health facilities with laboratories, the number of functional CD4 machines. Other indicators are the availability of child tracer drugs (11 recommended ones), health tracer drugs for mothers, and the first line malarial treatment (Atremisinin-based combination therapies (ACT)), intensive treatments for tuberculosis (RHZE), metformin, and first-line antiretroviral. Others include proportionate number of doctors and nurses, data registers, work plans, and management boards.

These statistics suggested that the Meru County Government was not prepared for to provide healthcare under the devolved system of governance. As such, it is crucial to evaluate the effect the devolution has had on delivery of health services in Meru County.

1.6 Scope of the Study

The target group was the staff of public health facilities in the County and who were under the payroll of the County Government of Meru. These included the Sub-County Hospital Management Committee and Meru Level V Hospital Committee members.

The focus was to establish the association between devolved healthcare finance, devolved leadership, devolved health workforce, and devolved medical supply system on the

delivery of health services from the perspective of sub-county and Meru Level V hospital managers.

1.7 Limitations of the Study

Meru County is vast, a fact that inhibited data collection due to logistical and time constraints. A questionnaire was used to collect data, this raised the challenge of skewed data collection since the projected respondents were limited with regard to how and the kind of information they were expected to divulge in their response. In this regard, the researcher ensured that the data collection tool facilitated collection of comprehensive data, which addressed study objectives with as little bias as possible.

Moreover, some projected participants were skeptical about being participants in the study. The researcher addressed this shortcoming by seeking the necessary permit, consents and approvals from the relevant authorities including but not limited to the University, County Government of Meru, Superintendents of respective health facilities, and, the National Commission of Science, Technology and Innovation (NACOSTI).

Moreover, ethical considerations were considered and participants enlightened on the same. Such considerations included desisting from requiring the respondents to divulge personal information such as their names or where they work. Moreover, desisting from disseminating the collected data and study findings to third parties, which implies that the study would be used exclusively for academic use. Lastly, the researcher indicated the willingness to share findings of the research with other interested respondents.

1.8 Delimitation of the Study

Delimitation was done to a set of predictor and dependent variables. Predictor variables included devolved healthcare financing, devolved leadership style, devolved healthcare workforce, and devolved medical supply system, while health service delivery constituted the dependent/outcome variable. The questions evaluating these variables were closed ended and therefore more probable to elicit faster and accurate responses. The researcher took leave to have ample time to collect data and ease the process. To minimize probable outliers, the study adopted a structured questionnaire. After going through all the approvals, only managers who signed an informed consent form participated and they were assured of their confidentiality.

1.9 Significance of the Study

The study will be beneficial to policy makers, health practitioners, and scholars. In respect of policy makers, the study findings and recommendations thereof are expected to enable them to formulate policies and strategies for guiding effective decentralization of government functions especially public healthcare to ensure the primary goal of advancing services closer to the citizenry is met.

Moreover, the study findings will shed more light on the most effective ways that health practitioners who include senior medical staff such as medical superintendents, hospital administrators, and county government officials can employ to address the intermittent challenges facing public healthcare at county levels this will contribute to the improvement of delivery of health services within the region.

More so, our findings are anticipated to contribute to the body of scientific knowledge in respect of health management. In this regard, the study will be a suitable source of reference for academicians in the fields of devolution, health, and management.

1.10 Operational Definition of Terms

Devolution: This is a form of decentralization especially in relation to authority, power, responsibility, and accountability to lower level of government from central government (Williamson & Mulaki, 2015). Healthcare financing, leadership and governance, healthcare workforce, and essential medicines and medical supplies characterize devolution of public healthcare.

Devolved healthcare financing: This refers to equipping and/or disbursing the requisite funds to public health facilities for effective operations of the stated facilities. Adequate finances, efficient financing, user fees, and financial sources characterize this financing (Jiminez & Smith, 2005).

Devolved Healthcare workforce: These are staff working to provide health services in health institutions (Williamson & Mulaki, 2015). In the context of the present study, healthcare workforce is operationalized by staffing, skills, expertise, remuneration, recruitment, and promotion of staff.

Devolved leadership: This refer to a concept that constitutes strategic direction, action plans, and policies, effective oversight, regulations, motivation, and partnerships which seek to integrate all building blocks of health systems with the object of realizing specific

results (Watts, 2007). This concept encapsulates political interference, conflict of interest, financial management, and facilities administration.

Devolved medical supply system: These are defined as drugs and related facilities that satisfy the healthcare needs of counties. These are also defined as medications, which the general population should ideally have access to at all times and in sufficient amounts (Tumwine et al., 2011). In respect of the present study, they are characterized by drugs availability or lack thereof (stock outs), quality of medicines, medical infrastructure and capacity of the health facilities, among other facets.

Health Service delivery: This is the provisions of services for the betterment of health wellbeing of individuals seeking such services (Kiambati et al., 2013). Accessibility of the stated services, consumers, providers, regulators, and payers of the services are part of key indicators of health services delivery.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews studies done with respect to healthcare financing, leadership, public healthcare workforce, medical supply system, and delivery of healthcare particularly under the purview of devolution or decentralization. The chapter also presents a review of theories that explain the concept of devolution.

2.2 Empirical Review

This section outlines past studies touching on devolution of health services. In particular, the studies focus on healthcare financing, leadership, healthcare workforce, medical supplies, and crucial medicines in relation to delivery of public health services.

Financing and Health Service Delivery

Financing the public health sector is very crucial since it is bound to improve services delivery. In a study conducted in Canada, Jiminez and Smith (2005) examined health care decentralization and how it affects health outcomes. The purpose of the study was to investigate the hypothesis that decentralization was likely improve population health. Ten provinces of Canada were used as a case study.

The findings of the empirical analysis showed that decentralization in Canada influenced public policy positively in respect to improving the health of a population. The study further established that provinces regulate health facilities and other institutions of health,

where financing schedules are deliberated on with health professionals. It was also found that provinces set global budgets for hospitals in their jurisdictions. The decentralized health facilities in Canada were also found to rely on user fees in their financing.

Sparrow et al., (2017) analyzed the effects of decentralization of health care financing on the delivery of maternal care in Indonesia in 2015. The study examined how health care financing initiatives in the sub national level (several districts) in Indonesian vary and assessed the influence of the stated local schemes on provision of maternal care over the period between 2004 and 2010. Pseudo panel data were employed.

The findings showed an increase in antenatal care visits after implementation of district schemes. Moreover, an upsurge of the accessibility of basic and recommended antenatal care services by households that lack the national health insurance financing scheme also increased significantly. Finally, schemes such as the Antenatal Care (ANC) package had a positive effect on the local financing schemes for healthcare in the study area.

Health budget decentralization and health outcomes are evaluated in the context of Chad. This was in a study by Douzounet and Yogo (2015) whose primary objective was to analyze both the direct and indirect effects of health budget decentralization on health outcomes in the country. Statistical panel data of 23 regions in Chad for a period spanning from 2007 to 2014 were utilized. The study results indicated that in general, decentralization of the health budget improved health outcomes.

It was established that increasing regional health budget by 5% increased the deliveries by assisted births by 0.25% margin. In addition, the study found that increasing the regional health budget by 10% could reduce the number of malnourished kids by 1.35%.

In Kenya, Koikai (2015) checked the effect of devolution in Nakuru County on healthcare in Nakuru County. Its aim was to examine how the various components of devolution affected delivery of health services in Nakuru County. A quasi-experimental design was adopted in rating the performance of healthcare prior to and after devolution.

Health care financing was one of the key aspects that were examined in relation to how they affect healthcare delivery. According to the study, that broad-based health financing steered the other aspects of health system strengthening. More than 60% of the respondents disputed that health financing for health had improved. Moreover, it was found that health financing had worsened under a devolved structure of governance.

Decentralization affected planning and financial management in the health sector to some extent (Tsofa et al., 2017). The study to the effect, a case study was done in Kilifi County, located at the Coastal region of Kenya. The aim was to evaluate the relationship between the decentralization on health sector planning and financial management in the County.

This case study found that devolution had improved community involvement and prioritization of health services, budgeting, and health sector planning in at the local

level. This subsequently led to equity in local resource allocation. The study also found that there was some degree of recentralization of the management of finances from health facilities to the County level.

Leadership and Health Service Delivery

Leadership in the management of public health facilities is an issue, which cannot be understated. In this regard, Emilian et al., (2009) evaluated leadership and management in health care systems. The study examined leadership the perceptions of leaders in Cluj County Children's Hospital in Romania and analyzed both the role and functions of management and leadership in delivery of healthcare services in Romania.

The study examined the new legal framework had a managerial component and whether leadership could be an important aspect in changing the system. According to the study results, the authors found that perceptions of managers and their leadership styles on their leadership style were inconsistent. The perceptions of medical staff were similar.

In India, Panda and Thakur (2016) evaluated the performance of healthcare systems after decentralization. The reviewed the difficulties, dimensions, and the derivatives in India and acknowledged that decentralization objects had a positive impact on health outcomes and management protocols and has political, administrative, and financial connotations. The study involved a review of existing literature through web-based search algorithms of Google Scholar and PubMed. In total, 180 pertinent articles were analyzed. The study findings indicated that decentralization in public health sector is associated with multiple

facets. In this respect, it was noted that at facility level, in the governance of health unit successfully would be subject to factors such as leadership capabilities, community involvement, or genuine interests of decision makers.

Decentralization and governance in Ghana are two crucial aspects. Their importance necessitated a study, which was commissioned by Couttolenc (2012). In particular, the study examined the effects of decentralization on the health sector. The study findings showed that the country has put in place many important building blocks over the years to have a truly decentralized health system. However, it was found that the effectiveness of these building blocks have diminished and their effectiveness hampered by the lack of strong policy and regulatory frameworks for regulatory conflicts, health, and duplications that have occurred due to fragmented health systems of staff management, poor budgeting or financing, and a weak capacity to manage the devolved system of health.

Governance is a crucial element in the management of health facilities in Kenya. Muchomba and Karanja (2015) examined the influence of devolved governance and functionality of the Kenyan health sector. One of its specific objectives was to determine the relationship between the performance of the health system and leadership. This was a descriptive survey, which recruited health care providers and patients from both Nairobi and Mombasa Counties. The study demonstrated a relationship between the performance of level IV hospitals and devolved leadership and thus the overall performance of the health sector. Moreover, most respondents held the view that devolved leadership was not

associated with hospital development planning and that devolved leadership influenced development planning positively in all the hospitals that were included in the survey.

Barasa et al., (2017) did an investigation into recentralization within decentralization. In particular, the study examined autonomy of County hospitals under devolution in Kenya with a special focus on hospitals at the Coastal region of Kenya. The specific objective was to examine devolution-occasioned changes in hospital autonomy and how the stated changes influenced the functioning of hospitals. A case study (qualitative) was done.

The study interviewed county government health managers and hospital managers. Five management aspects were analyzed, that is, finance, human resources, strategic management, procurement, and administration. The study revealed that devolution had resulted in weakened autonomy of the surveyed hospitals in relation to the aforesaid key functions. Moreover, it was established that there was subsequent weakening of both the hospital management and leadership, compromised quality of health services, staff insubordination, and compromised healthcare among other challenges.

The main aim for devolving leadership was to bring management closer to the population and therefore improve health service delivery. However, from literature, devolved health governance seems not to have had its desired impact. McCollum et al., (2018) compared the experiences of devolution of health leadership in Indonesia and Kenya on the context of health system governance.

In the study, community approaches to leadership, including the involvement of the community in health system management could improve equity of service provision and accountability. Unfortunately, in developing countries such as Kenya and Indonesia, challenges or good governance still existed post devolution with limited community accountability identified as a key limitation due to failure of managers to address negative practices and contextual norms in their jurisdictions. According to the authors, implementation of policies that can such issues can boost health service delivery.

Healthcare Workforce and Health Service Delivery

The staffs of public health facilities play a key role in the provision of optimal healthcare services. Ansari et al., (2011) evaluated the perceptions of the public, devolution, and health service delivery in Pakistan. This was a cross-sectional survey between 2002 and 2004 in the country. Essentially, the objective was to evaluate the influence of devolution in Pakistan on health services from the public's perspective. Respondents were recruited via random cluster stratified sampling.

The study established that members of the public avoid government health facilities mostly due to bad treatment from the healthcare workforce, and unavailable or poor quality medicines. The handling of patients by the public healthcare workforce influenced how the public sought medical services from government-funded health facilities.

In Serbia, Milicevic et al., (2015) mapped the governance of health human resources and found that Serbian districts with exception of Sremski had surpassed the 59.4 availability threshold for skilled nurses, midwives, and physicians for every 10,000 inhabitants.

The study, however, observed that there were bottlenecks in relation to financing and the distribution of human resources in the country with the stated bottlenecks were found to adversely affect both healthcare services provision and the implementation of healthcare projects by municipal governments. Moreover, there were significant differences between the district accessibility of healthcare workforce and the national average.

In Kenya, Miranda (2017) assessed satisfaction levels of patients in a County referral hospital. It specifically focused on Busia County Referral Hospital in Western Kenya. The primary objective was to examine level of service satisfaction on inpatients attending the afore-stated health facility. A descriptive cross-sectional study was done. A questionnaire was used to facilitate data collection.

Inpatients were highly satisfied with both procedures and practices. Ninety-seven per cent of the surveyed patients indicated their willingness to return to the hospital for healthcare. Moreover, it was established that patients who visited the hospital for inpatient services were satisfied with the increased number of physicians.

Locally, there was further examination of the challenges related to the devolved health sector in Kenya (Kimathi, 2017). The aim was to understand whether they were teething problems or systemic contradictions. The study noted that one of the rationale for devolving health services to the grassroots was to enable county governments to come up with innovative interventions and models, which could be aligned to the unique health needs in respective counties, encourage effective participation of the locals, and make quick and autonomous decisions on management and resource mobilization.

Kimathi (2017) found that, counties were facing herculean challenges including human resource deficiency. Ultimately, the foregoing challenges were bound to result in stagnation of healthcare, and in some cases, a reversal of the gains all made under the hitherto centralized government health services.

In Kilifi County in Kenya, Tsofa et al., (2017) identified the rapid transfer of management functions such as EMMS and HRH following devolution as a predisposing factor to disruption of healthcare workforce at the county level. In this quantitative case study, they used the decision-space framework to analyze quantitative data from key informants between 2012 and 2014 and made the following observations:

First, devolution of electronic staff management systems was rushed, as most counties lacked the capacity to set and manage such systems. Moreover, during the transfer, the responsibilities and roles of counties were poorly elucidated. Subsequently, promotions

were not effected on merit, while disruption of staff payments was a common occurrence due to laxity and political interference. This led to mass resignations and industrial actions such as strikes, which stifled health service delivery to patients in distress.

Even though devolved healthcare lowered health service delivery, clarifying the roles and responsibilities of the counties around staff recruitment, placement, and remuneration could, reverse such negative outcomes over time. Moreover, while designing health policies, capacity considerations should be central to improve health service delivery.

Medical Supply System and Health Service Delivery

The supply of essential medicines and related equipment to a significant extent influence delivery of health services. On the same perspective, a study commissioned by the WHO (2014) established that unavailability of medication, especially in public health facilities, was major barrier for the access to medicines. The study also found that availability of generic medicines in the public sector across the WHO regions was less than 60% and ranged from 32% to 58% in the Eastern Mediterranean and European region.

In contrast, the availability of generic medicines in the private sector was higher than in the public sector across all the studied regions. However, it was revealed that availability was still lower than 60% in Africa, South East Asia Region, and Western Pacific regions.

Drugs availability is paramount since the stock out of the same can spell possible deaths to patients. In this regard, Tumwine et al., (2011) analyzed the expiry and availability of essential supplies and medicines in a ‘pull’ and ‘push’ system for acquiring drugs in a rural Ugandan hospital. The objective of the study was to evaluate associations between the ‘pull’ and ‘push’ drug acquisition systems on the availability and reduction of expired medical supplies and essential medicines and to determine factors that affect availability at Kilembe Hospital. The results of the study indicated lack of transport, inadequate training, and inadequate funding contributed to availability of essential supplies. The findings led to the inference that the ‘pull’ system not only increased the availability of essential medicines but also lowered the volume of expired drug supplies.

Locally, Tsofa et al., (2017) examined the effects of devolution on commodities hospital management and the healthcare workforce. Specifically, the study evaluated the early implemented experiences in Kilifi County, Kenya. In reference, to one of the major elements of the health system, management of medical supplies and essential medicines, the study analyzed the effect of early implementation of the system at county level.

Tsofa et al., (2017) established that similarly to other county functions, management functions of EMMS were rapidly transferred to the counties prior to putting in place requisite county-level structures and capacity. Concerning EMMS, the study revealed that devolution was characterized by considerable delays in procurement, which consequently resulted in long stock-outs of necessary drugs in devolved public health facilities.

Nevertheless, the study observed that when the counties got the capacity to procure drugs, there was reportedly better order fill-rate particularly when juxtaposed against the period before the health function was devolved.

On the same breadth, Okech (2016) analyzed the implication of devolving public health care services in Kenya on universal health coverage. The study empirically analyzed how devolution has influenced access to universal health in respect to quality of care, equity concerns, and allotment of resources such as medical supplies and essential medicines.

The results of the study pointed out that stock-outs of medical supplies and drugs were some of the leading challenges. Other equity concerns, according to the study, included dilapidated of inadequate health infrastructure and skewed distribution of health resources. The study's recommendations were the need for enhancing the pharmaceutical management information system in order to have both reliable and accurate evidence premised on medical supply needs and the estimation of essential medicines.

From our review of literature, it is evident that the medical supply system of health facilities plays a major role in health service delivery in underprivileged health settings in Kenya, but is currently inadequate. To offer insights on the changes that can enhance the efficacy of supply of medical equipment and interventions. McCollum et al., (2018) .

applied the Tanashi's equity model in a community health system in Kenya between 2015 and 2016 to evaluate the equity of delivery of health services by major actors.

The research study was quantitative in nature and scheduled in-depth interviews with 269 key informants in 14 focus group discussions. According to the authors, devolution of the medical supply system had a significant and positive impact on the supply side of the medical system, mostly due to an improvement in accessibility of health services. However, because there was a limited emphasis on promotion of the demand side of the medical supply system, use, and acceptability of health services has been neglected.

To ensure universal health coverage, the authors proposed adoption of the Tanahashi framework, as it plays a critical role towards health equity in low resource setting of developing countries such as Kenya.

2.3 Theoretical Review

In this section, both the sequential theory of decentralization and systems theory are reviewed and discussed in the context of devolution and delivery of healthcare.

Sequential Theory of Decentralization

Falleti (2004) proposed the sequential theory of decentralization. The theory states that consequences of decentralization can range from substantial to insignificant. Three facets characterize the theory. These describe decentralization. Firstly, it is stated that decentralization is a process. Secondly, decentralization influences territorial interests of

the bargaining power of actors. Thirdly, decentralization encompasses the effect of policy feedback while analyzing bargaining situations.

The theory covers the various types of decentralization, which include, political, fiscal, and managerial, and is a major predictor for the fruition of balance of power in the intergovernmental sphere (Falleti, 2004). Relative to this theory, Shah (1994) and Weingast (1995) posited that decentralization results in an improvement in fiscal efficiency, political participation, administration, and accountability. However, critics argue that soft-budget constraints, bureaucracies, clientalism, and macro-economic instability are a result of decentralization (Rodden, 2000; Rodden & Wibbels, 2002).

According to Falleti (2004), even though there is no consensus on the positivity and negativity of decentralization, it is assumed that an increase in the power of sub-national officials confounds decentralization and its outcomes being either good or bad.

The sequential theory of decentralization could be adopted to explain the concept of devolution and delivery of healthcare services. Similarly to Falleti (2004) assertion that there exists three forms of decentralization (political, administrative, and fiscal), in Kenya, devolution is characterized by decentralization of political power to counties (governors and members of county assemblies), administration or leadership (of various devolved public functions including healthcare), fiscal policies as manifested to the budgetary issues and financial disbursement to the counties.

In tandem with this theory, the administrative, fiscal and leadership, functions are not devolved in entirety to the devolved health function. This is evident by the reliance of devolved health facilities leadership on the policies made by the national government touching on the workforce and their operating environment.

Systems Theory

The systems theory was proposed in 1940's by von Bertalanffy and later advanced by Bertalanffy (1972) under the general systems theory, and Klir (1991) under facets of systems science. The systems theory state that a system is made of several components (sub-systems) that work in synergy.

The theory also holds that systems are open and tend to interact with their environments. It postulates further that the systems theory revolves around organizations, wholes, and systems and covers disciplines on parts, wholes, connectedness, and organizations and how these disciplines relate with their environment (Swanson & Holton, 2001).

Further, in the systems theory, there is conceptualization on how organizations should be viewed as a system. For a deeper understanding, for instance, it provides important information on the organizational behaviors and structures and the processes and nature of the changes in systems (Swanson & Holton, 2001). Therefore, through the systems theory, researchers can have a better understanding of the basic structure of systems, which include the interrelation between components with the environment, arrangement of parts, and the purposes of the design if the system in question.

Every organization is a system. As such, all actions taken in the system can affect people and or other parts of the system (Wyckoff, 1998). Though the theory was developed around biological concepts, it has been applied in other disciplines including physics, technology, and social sciences). Even with devolution, it is expected that the health systems building blocks work together and lead to effective delivery of services.

2.4 Conceptual Framework

A conceptual framework is a written or diagrammatic (visual) product that shows either in narrative form or graphically the key factors (variables or constructs) to be studied, and also their alleged relationships (Miles & Huberman, 1994). Therefore, the framework is premised on assumptions, beliefs and expectations (Robson, 2002).

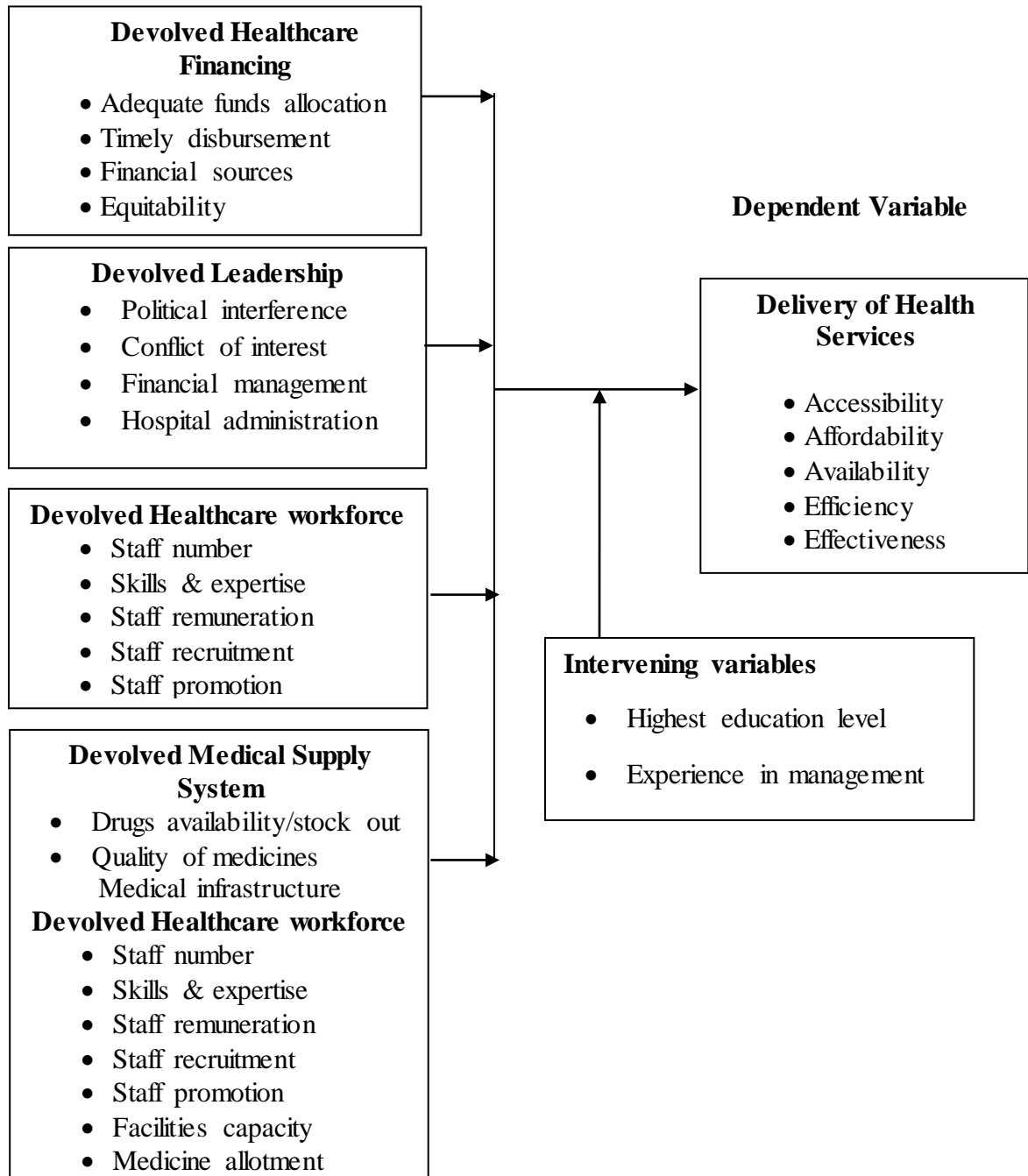
The conceptual framework that steered the present study is outlined in Figure 2.1. As indicated in the framework, no two distinct sets of variables were available; predictor (independent) and outcome variables. Predictor variables were devolved healthcare financing, devolved leadership, devolved healthcare workforce, and devolved medical supply system. Delivery of health services constituted the dependent variable.

All the stated variables were operationalized using specific parameters as shown below. As illustrated by the framework, it was hypothesized that the various aspects characterizing devolved healthcare systems influenced delivery of health services.

Figure 2.1

Conceptual Framework

Independent Variables



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Research methodology elucidates the systematic protocol that was followed to arrive at results that are able to address the study objectives and the questions the study aims to answer. In this regard, thus, this chapter covers the study design that guided the research. Others include target population, sampling protocol, data collection instrument and procedure, and lastly the data collection and analysis and presentation of results.

3.2 Research Design

A descriptive research design was adopted. This was based on the argument that the current study purposed to have a precise description of devolved healthcare system and health services delivery, and the association (or relationship) between these two study constructs. In addition to adopting a descriptive survey, the study used a quantitative methodology. This was premised on the assertion that the study sought to collect quantitative data using a structured questionnaire in tandem with all the study constructs characterizing devolution and health services delivery in Meru County. According to Kothari (2004), quantitative approach can be narrowed down to inferential approach that enables drawing conclusions regarding relationships in a given population.

3.3 Study Site

The coverage of this study was in Meru County in the Eastern region of Kenya. The areas borders Laikipia, Nyeri, Isiolo, and Tharaka-Nithi Counties and has nine administrative sub-counties, namely Igembe, North Imenti, Tigania East, Igembe South, Buuri, Igembe Central, South Imenti, Tigania West, and Central Imenti (Republic of Kenya, 2013). The study was conducted in all the Sub-county hospitals in the region including Meru Level V hospital. A map of the location of Meru County in Kenya is in APPENDIX VII below.

3.4 Target Population

Target population refers to an aggregate of subjects sharing common or similar characteristics. In respect of this study, all the healthcare managers in Kenya constituted the target population. The study population is derived from the target population, which is referred to as a subset of the target population, which a researcher can get. The members of Sub-County Hospital Management Committee and Meru Level V Hospital Committee totaling 168 comprised the study population. The distribution of the study population is as elucidated in Table 3.1.

Table 3.1

Distribution of Study Population

Level of Management	Number of Managers
Sub-County Hospital Management Committee Members	156
Meru Level V Hospital Committee Members	12
Total	168

3.5 Sample Size and Sampling Procedure

Sample Size

According to Kothari (2004), census design is an approach where all member of the study population constitutes the unit of analysis. In other word, all the subjects or individuals constituting the accessible population are approached to be participants. Therefore, all the aforementioned committee members totaling 168 were projected to take part in the study; this meant that all the members who are part of these committees were eligible to participate in the study. The relatively small population and our aim of maximizing reliability of tools and results guided our preference for the design. In this respect, the approach eliminated the sampling bias and sampling error and as such enhanced the generalization of findings to the study or target populations (Cooper & Schindler, 2008).

Sampling Procedure

Meetings were scheduled with all members of the health management committee of Meru County and the objectives of the study discussed. Informed consent was sought and consecutive sampling used to recruit participants. After provision of consent, participants were recruited into the study until the sample size (168) was reached.

3.6 Research Instruments

According to Mugenda and Mugenda (2003), questionnaires ideal research tools for facilitating collection of data in surveys with dispersed populations. Therefore, given that this study has a relatively large population (168) widely dispersed across the nine Sub-

Counties constituting Meru County and the Meru Level V Hospital, questionnaires consisting of exclusively close-ended items were employed to aid in data collection.

The use of questionnaires was delimited to the members of the Meru Level V Hospital Management Committee and the nine Sub-County Hospital Management Committees. The choice of the structured questionnaires made because the study adopted quantitative approach, which is synonymous with numerical data. Structured questionnaires enabled collection of categorical data, which were numerical in nature. In addition, the data items were on a 5-point Likert scale and were ensured to be precise and explicit in order to mitigate probable ambiguity to the projected respondents.

3.7 Validity of the Research Instruments

The face validity technique was used to ascertain the validity of questionnaires before use in the study. The protocol, including the data collection instruments were shared with supervisors from the Kenya Methodist University for review and input. They assessed the suitability of the questionnaire in answering the study objectives and provided their input, which were addressed before using the questionnaires in the definitive study.

3.8 Reliability of the Research Instrument

The Cronbach alpha reliability test was used to ascertain the reliability and internal consistency of the multiple item measures used to compute the dependent/independent variable. Each construct was considered reliable at an alpha level greater than 0.7.

3.9 Data Collection Procedure

Having determined both the reliability and the validity our study-specific data collection tool, the principal investigator disbursed questionnaires, which were self-administered. The respondents were granted a maximum of five working days to respond to closed ended questions and resubmit for analysis. Upon collection, the questionnaires were screened and data analysis done.

3.10 Data Analysis

Data was screened for completeness and variables with missing or complete data deleted. Cases with >20% missing responses were also eliminated from analyses. The rationale of data cleaning was to make sure outliers, which often compromise the authenticity and reliability of study results, were reduced. Data analysis, including descriptive statistics and logistic regression was done using version 24 of the Statistical Package for Social Sciences (SPSS) tool. Descriptive statistics included the use of frequencies, percentages and cross tabulations. Logistic regression was used to link the dependent to independent variables because the dependent variable was binary or simply dichotomous.

That is, it had only two possible outcomes. The delivery of quality health services can be either timely or delayed. Logistic regression was used to establish the best fitting model that describes the association between the binary characteristics of the dependent (outcome or response variable) and independent (explanatory or predictor) variables. This method generated coefficients, significance levels, and standard errors of a formula to predict a logit transformation of probability of presence of the characteristic of interest.

The logistic regression is expressed as

$$f(p) = \frac{1}{1 + e^{-p}} \dots\dots\dots 1$$

Equation 1 can be simplified as

$$\text{logit } (p) = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + \dots\dots + b_nX_n \dots\dots\dots 2$$

Where:

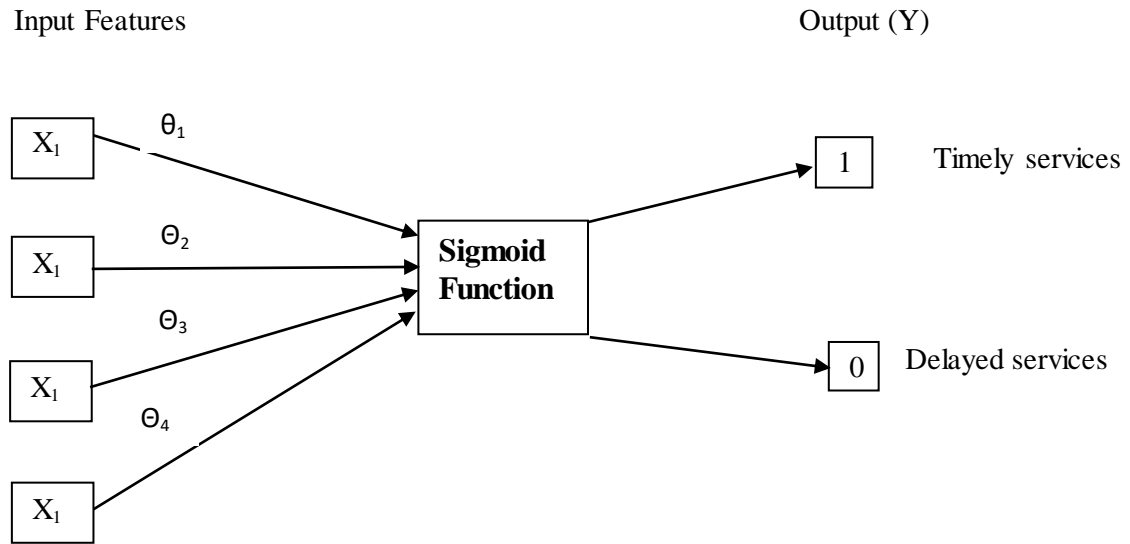
p = probability of presence of the characteristic of interest

b₀ = representation of the reference group

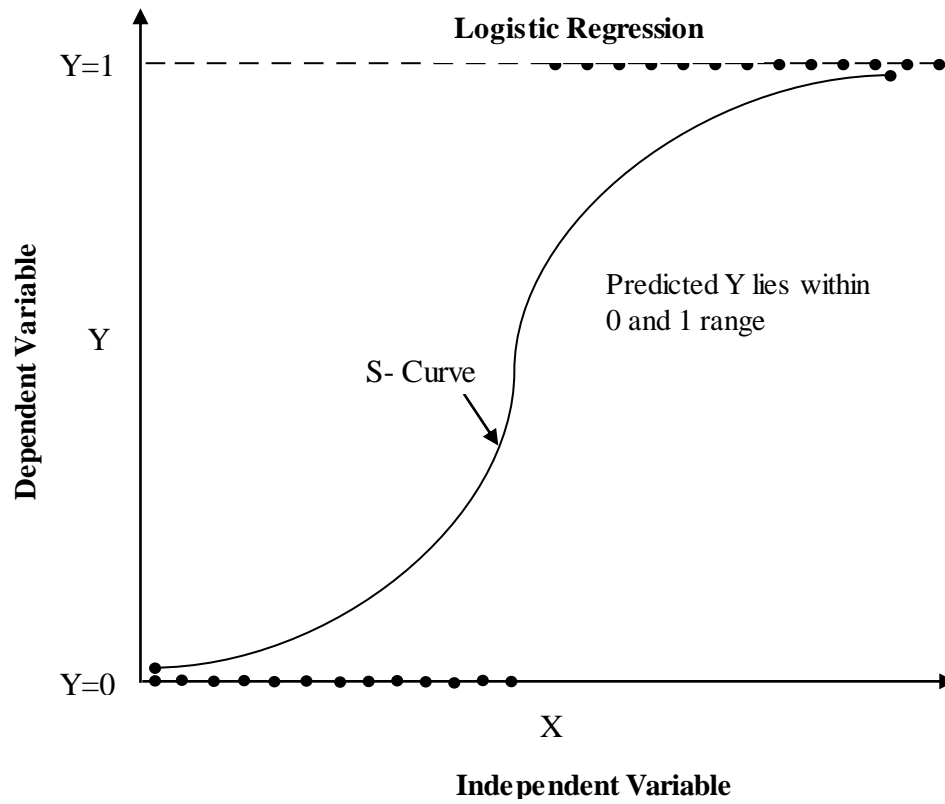
b₁ = the regression coefficients associated with the reference group

X₁..._n = explanatory variables

Logistic Regression Model can be expressed using a schematic diagram as follows:



The dataset presentation Sigmoid Curve is presented below



3.11 Ethical Considerations

Requisite permits, consents, and approvals were sought before data collection. Authority to do the research the study was also attained from the Graduate School, KEMU and a research permit/authorization letter from the National Commission for Science, Technology, and Innovation (NACOSTI) were sought. Finally, approval to do the study in Meru County was requested for County Government of Meru: Department of Health, which wrote to all the medical superintendents of the health facilities from which respondents were projected to be drawn. Informed consent was sought from study participants before recruitment and data collection. A printed consent form was provided to potential participants for review and signing. The Principle Investigator addressed all questions before recruitment. The questionnaire was self-administered. Personal data such as names were not collected to uphold confidentiality of the participants.

CHAPTER FOUR

RESEARCH FINDINGS, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter elucidates results of the analysis based on the study objectives. The chapter starts with a presentation on the response rate from the field survey. Descriptive analysis of variables of the study is also presented. The chapter then ends by presenting the results of the hypotheses testing.

4.2 Response Rate

One hundred and sixty eight (168) questionnaires were issued to the health management committee members at nine sub county hospitals and Meru level V Hospital. However, 112 questionnaires were filled following the instructions. This translated to a response rate of 66.67% that is acceptable for descriptive surveys, as postulated by Nulty (2008).

4.3 Reliability Test Results

The reliability of questionnaires was done using the Cronbach's alpha coefficient (α), where the reliability threshold was 0.7, that is, $\alpha \geq 0.7$. The choice of Cronbach's alpha coefficient was premised on the fact that the questionnaire had items on a Likert scale. It was revealed that the questionnaire used for research was reliable. All variables in the study questionnaire had alpha coefficients greater than the 0.7 (Table 4.1). Therefore, the tool was found reliable for data collection for the definitive study.

Table 4.1

Results of Reliability Testing

Study Constructs	Test Items	Cronbach's Alpha Coefficient
Devolved healthcare financing	7	0.822
Devolved leadership	7	0.804
Devolved healthcare workforce	7	0.830
Devolved medical supply system	6	0.783
Delivery of health services	8	0.842

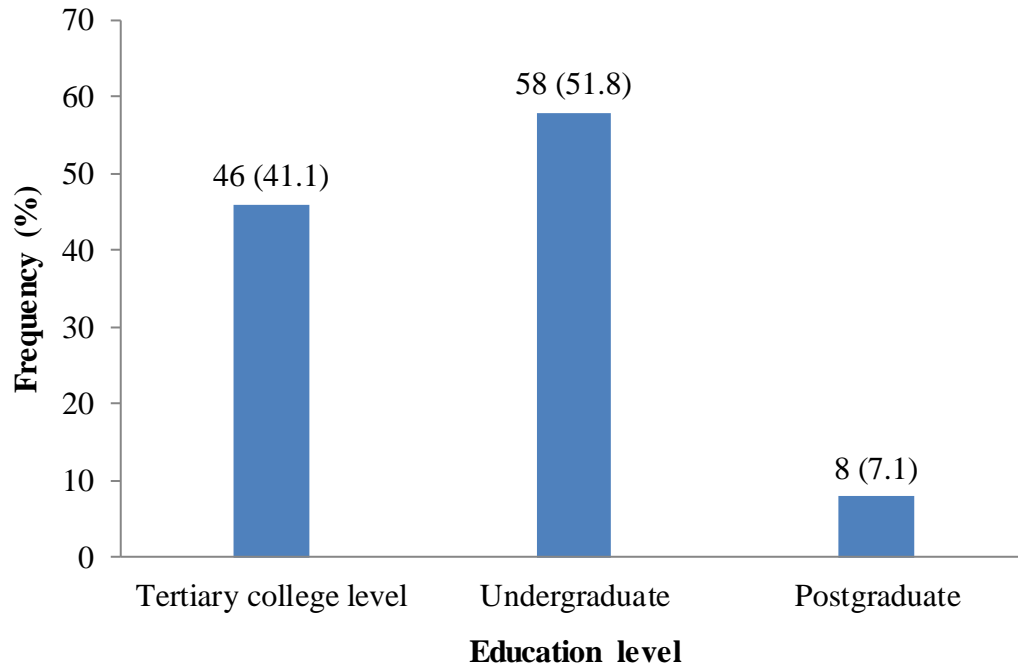
4.4 Socio-demographic Characteristics

The members of the sub county Hospital Management Committees in Meru County and those at the Meru Level V Hospital Management Committee had a modest level of education with up to 51.8% (58/112) of our respondents having an undergraduate degree.

The study also established that 41.1% (46/112) of the respondents have attained tertiary (university or college) level of education. However, only 7.1% (8/112) had a postgraduate qualification. It was therefore evident that these members were privy to the matters of devolved health care systems and delivery of health services (Figure 4.1).

Figure 4.1

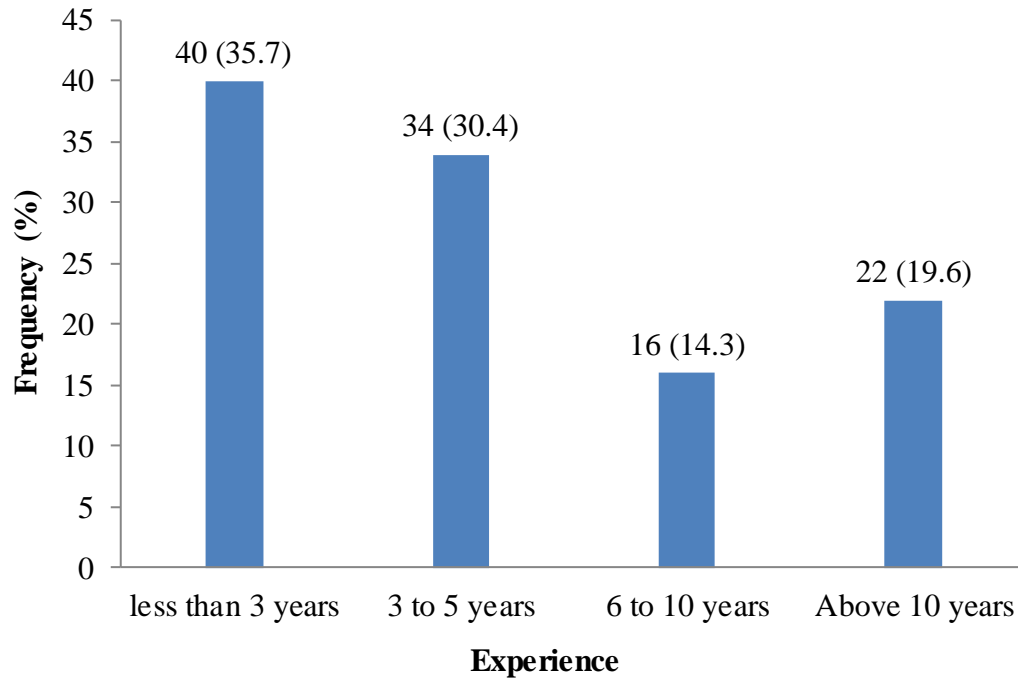
Educational Level of Members in the Hospital Management Committees



In terms of experience, a majority of respondents 35.7% (40/112) had spent less than three years executing their duties in their current capacity in the study area. Further, it was noted that close to a third of the respondents 30.4% (34/112) had held the managerial position for a duration ranging from three to five years. Furthermore, it was established that respondents with over 10 years of experience were the least at 19.6% (22/112). From these findings, it was noted that most committee members assumed management positions in early 2013 i.e. after the introduction of devolution. Therefore, taking over of the leadership of the County by a new regime might have affected the membership of the County and Sub-county Health Management Committees in Meru County directly.

Figure 4.2

Experience of Members in the Hospital Management Committees



4.5 Descriptive Analysis of the Study Variable

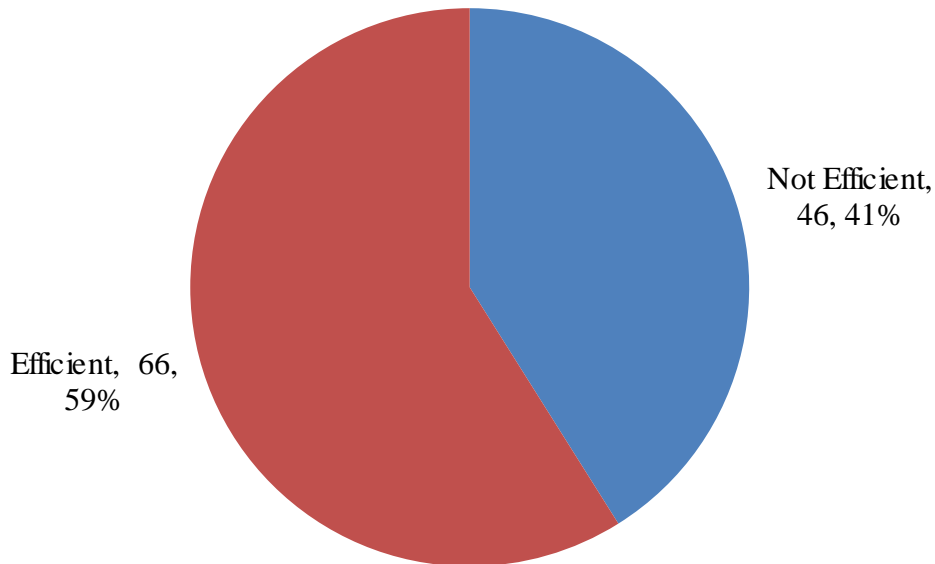
This section presents the views or opinions of the participants in respect to devolved healthcare financing, devolved leadership, devolved healthcare workforce, devolved medical supply system, and delivery of health services. The views of participants were on a 5-point Likert Scale where: 1=Strongly Disagree (SD), 2= Disagree (D), 3= Not Sure (NS), 4=Agree (A), 5=Strongly Agree (SA). The views were then consolidated to compute each of the study variables using the compute function in SPSS version 24. The results are as presented in the succeeding sections.

Delivery of Health Services

Delivery of health services was the dependent variable. This variable was deemed very important in this study because quality health care services are associated with general well-being of the population. Responses on delivery of health services were coded and keyed into SPSS software. The indicators were measured using 5-point Likert scale. For ease of interpretation on perception scores relating to delivery of health services, the Likert scaled data was transformed into nominal scale with two categories. The variable was measured using nine items (responses). The nine responses were consolidated into one response using the compute function in SPSS to compute the variable called “delivery of health care services” with two nominal categories namely “efficient” and “not efficient”. Since delivery of health care services had 9 items with 5 possible rating outcomes, the minimum possible perception score was 9 and maximum possible perception score was 45. Respondents whose Perception score ranged from 9 to 18 were further classified as “Not efficient” while respondents whose perception score was above 18 perceived that “delivery of health care is efficient. The results are in Figure 4.3.

Figure 4.3

Perceptions on Delivery of Health Services



The results in Figure 4.3 indicated that 59% (66/112) of respondents felt that the delivery of health care services in the current devolved systems is efficient, implying that the devolved systems of health care is beneficial at the county level. Only 41% (46/112) stated that health care service delivery is not efficient in the devolved government.

These findings were in agreement with Jiminez et al., (2005) in a study on the impact on decentralization of healthcare on health outcomes. This case study established that decentralization in Canada had a significant positive influence on the efficacy of public health policy in respect of improving healthcare services to the population.

The similarity picked here by the increase in number of patients served in the facilities and increase in accessibility, acceptability, affordability and availability of health services, shows that in both Canada and Meru, health services have been driven closer to citizens and thus devolution is serving the purpose for which it was conceived.

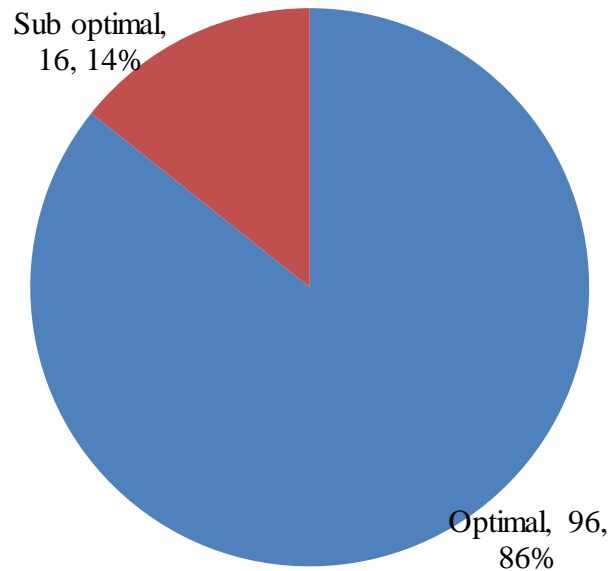
However, these findings contradict those of Ansari et al., (2011) which indicated that members of the public in Pakistan tended to avoid government health facilities mostly due to bad treatment from healthcare workers and unavailability of medicines.

Devolved Health Care Financing

Devolved health care financing is the first independent variable. The variable was intended to show the source of finances to finance health care budget at the county level. Adequate finances indicate that there is enough money to purchase health related equipment. Adequate finances also imply that the counties are able to pay their staff on time and this is likely to motivate health care workers. Motivated workforce is likely to deliver health care services on time. The variable had nine perception items measured using five perception scores namely strongly agree, agree, neutral, disagree, and strongly disagree. The minimum possible perception score therefore was 9 and maximum 45. All respondents whose perception score was less or equal to 18 perceive that devolution of health care financing is optimal. Perception scores greater than 18 implied that devolution of health care financing is not optimal. Results of the analysis are in Figure 4.4.

Figure 4.4

Descriptive Statistics for Devolved Healthcare Financing



The results indicate that (96) 85.7% of the selected members of the hospital management committees opined that devolution of healthcare financing is optimal at the county level. Only 14.3% (16/112) felt that devolution of health care financing was suboptimal.

The finding is similar to those of Jiminez and Smith (2005) in Canada who found that decentralization of health finances had a significant and positive influence on the efficacy of public policy. Herein, provinces regulate health facilities, deliberate on the financing schedules with healthcare providers, and rely on user fees in their financing. The current scenario in Meru County is that the health managers sit quarterly to draft the hospital budgets, which then have to be approved by the county government. These bureaucracies

lead to delay in disbursement as well as poor equitability of funds. The difference seen in these studies may be attributed to different management policies in Canada and in Meru.

In addition, the findings agree with those of Tsofa et al., (2017) and Douzounet and Yogo (2015). In the cross-sectional study by Tsofa et al., (2017), devolution had created a chance for prioritization and the participations of the community in both health sector budgeting and planning at the local level, leading in the optimal dissemination of local resources in health facilities. Moreover, decentralization of health services also affected planning and financial management to some extent, with a positive impact on health service delivery at the Kenyan coast, particularly in in Kilifi County, reported.

Tsofa et al., (2017) also found that devolution had improved community involvement and prioritization of health services, budgeting, and health sector planning in at the local level, which led to equity in local resource allocation. Moreover, some degree of recentralization of the management of finances from health facilities to the County level was reported, which was in agreement with the findings of our study.

In Chad, Douzounet and Yogo (2015) reported both direct and effects of health budget decentralization on health outcomes over a period spanning from 2007 to 2014. In the study, decentralization of the health budget improved health outcomes. Overall, after the decentralization of health financing, the regional health budget in Chad increased by 5%, in turn increasing the incidence of assisted births by around 0.25%. In the coming years,

decentralization of financing was projected to increase the regional health budget by 10%, which would lower the number of malnourished kids by approximately 1.35%.

Our findings were in line with those of Sparrow et al., (2017) in Indonesia on the effects of decentralization of health care financing on the delivery of maternal care in Indonesia in 2015. Pseudo panel data collected from 2004 to 2010 from several national level districts showed an increase in antenatal care visits after implementation of district schemes. Moreover, an upsurge of the accessibility of basic and recommended antenatal care services by households that lack the national health insurance financing scheme also increased significantly, while schemes such as the Antenatal Care (ANC) package had a positive and significant effect on local financing schemes for healthcare in the study area.

Our finding contradicts data from an earlier study done in Nakuru County, which established that health care financing had worsened after devolution. In line with the current study, observations that the funds disbursed to devolved health facilities are insufficient in line with the budget, the study acknowledges that health financing had been aggravated under devolved structure of governance (Koikai, 2015).

In this regard, it is imperative to conclude that since devolution of the health function from the national government, there have been several financial constraints, which are reflected in drugs stock out and intermittent labor strikes and go-slows. The similarities

seen may be due to similarities of the populations studied in both studies i.e. healthcare workers, and the fact that both countries are in Kenya and devolved during the same time.

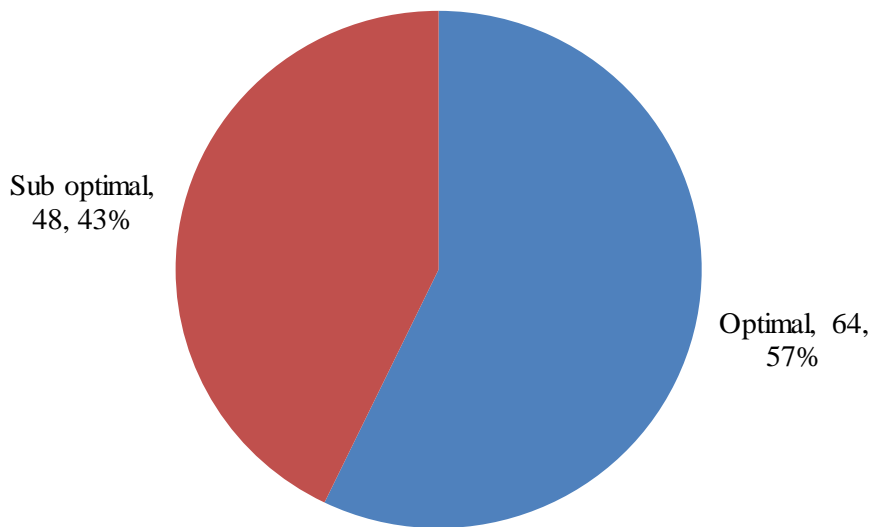
Devolved Leadership

This variable was included in order to determine the management approach adopted in Hospitals operating in Meru County. It was hypothesized that devolved leadership influenced the efficacy of health care services delivery. The variable had seven perception items measured using 5 perception scores namely strongly agree, Agree, Neutral, Disagree and strongly Disagree. The minimum possible perception score therefore was 7 and maximum 35.

All respondents whose perception score was less or equal to 14 perceive that devolved health care leadership is optimal. Perception scores greater than 14 imply that devolution of health care leadership is not optimal. Results of the analysis are as presented in Figure 4.5.

Figure 4.5

Descriptive Statistics for Devolved Leadership



As in Figure 4.5, most respondents (64) 57.1% were of the view that leadership of devolved health care systems are optimal in Meru County. Only (48) 42.9% of the respondents felt that the leadership of devolved health care systems was suboptimal.

The results mirror those of Panda and Thakur (2016) that indicated that decentralization in public health sector in India is associated with multiple facets, key among them being the leadership capabilities of the decision makers. The authors reviewed the difficulties, dimensions, and the derivatives in India and acknowledged that decentralization objects had a positive impact on health outcomes and management protocols with political, administrative, and financial connotations. Moreover, in the systematic review, decentralization of the public health sector was strongly associated with multiple facets, which included devolved leadership at facility level, but was dependent on factors such as leadership capabilities, community involvement, or genuine interests of decision makers.

Moreover, while examining the effects of decentralization on the health sector in Ghana, Couttolenc (2012) showed that the country has put in place many important building blocks over the years to have a truly decentralized health system. However, while devolved leadership was optimal, effectiveness of the health systems building blocks had diminished and their effectiveness hampered by the lack of strong policy and regulatory frameworks for resolving conflicts around health and duplications. Moreover, fragmented staff management systems and poor budgeting or financing also dented the capacity of hospital managers to implement manage the devolved system of health as prescribed.

Finally, as in our study, Muchomba and Karanja (2015) showcased the importance of good governance in the management of health facilities in Kenya. In the study, the influence of devolved governance and functionality of the Kenyan health sector was demonstrated and its relationship with the performance of leaders and therefore health care systems reiterated in Nairobi and Mombasa counties. The study demonstrated a positive association between the performance of level IV hospitals and the devolved leadership and therefore the overall performance of the health sector. Moreover, even devolved leadership influenced development planning positively in all public hospitals.

The findings contradicted Barasa et al., (2017), who reported that leadership of public health facilities had weakened after devolution of services. While studying the autonomy of county hospitals after recentralization within decentralization at the coast region of Kenya, devolution seemed to have weakened the autonomy of the hospital management in the hospitals studied. As a result, many hospitals struggled under weak leadership, which not only compromised quality of health services, but also lead to staff insubordination and compromised healthcare delivery among other challenges. This difference might have resulted because of the differences in population characteristics in Kilifi and Meru. Moreover, Barasa et al., (2017) did not control for confounding.

Our findings also contradicted the results of Emilian et al., (2009) in Romania. While evaluating leadership and management in Cluj County's health care system, the authors found that the perceptions of managers and their leadership styles were inconsistent after devolution yet the perception of medical staff were similar. As such, even though front-

line medical personnel internalized and abided by the tenants of the new changes, hospital management were stuck in their old individuals way of running hospitals, which had a negative bearing on health service delivery. However, Romania has a higher human development index than Kenya. Therefore, health managers have a higher autonomy and leeway to adjust their management styles, unlike in Kenya that has a weak autonomy.

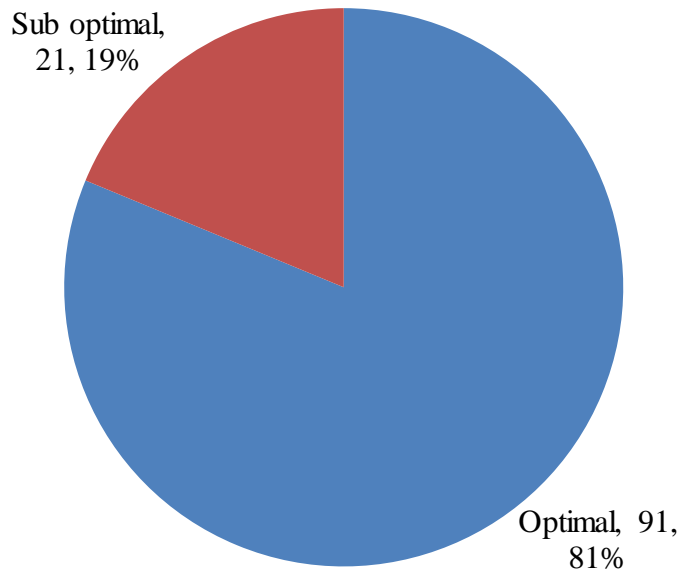
Devolved Health Care Workforce

This variable was included in the study to gauge the status of health care workforce in hospitals in Meru County. Studies have indicated that staffing significantly affect provision of health care services in health facilities (Miriti & Keiyoro, 2017). Consequently, respondents were asked to state their perception on the status of workforce in Hospitals in Meru County. To achieve this objective, 7 perception items measured using 5 perception scores namely strongly agree, Agree, Neutral, Disagree and strongly Disagree. The minimum possible perception score therefore was 7 and maximum 35.

All respondents whose perception score was ≤ 14 perceive that devolution of health care workforce is optimal. Perception scores greater than 14 imply that devolved health care workforce is not optimal. Results of the analysis are as presented in Figure 4.6.

Figure 4.6

Descriptive Statistics for Devolved Health Care Workforce



The data in Figure 4.6 indicate that, most respondents (91) 81.2% believed that devolution of health care workforce was optimal. Only (21) 18.8 % felt that the devolution of health care workforce in Meru County was sub optimal. A 2017 study at Meru Level 5 hospital by Miriti and Keiyoro (2017) found similar results. In the study, staffing was low and influenced the delivery of health services negatively in the County.

The situation is the same in Kenya with the ratio of doctors to nurses reported to be 1:10,000, which is significantly lower than the 1:1000 ratio proposed by the WHO. The ratio of nurses to patients is around 6:50,000, which also over shadows the 1:280 ratio recommended by the WHO. These staff shortages have led to poor service delivery in County hospitals and are projected to worsen as doctors and nurses leave public hospitals

for private practice because of poor working conditions and ongoing conflicts around personnel transfers, terms of service, and continuous education (Okech, 2016).

At Busia County Referral Hospital, patients were very satisfied with the practice and procedure of the health facility, 97% of whom indicated their willingness to return to the hospital for healthcare and those who had visited the hospital for inpatient services were satisfied with the increase in the number of doctors (Miranda, 2017).

Granted that the foregoing is associated with the staff working in the facility, we inferred that devolved health facilities had skilled healthcare staff who could address the needs of patients in their respective jurisdiction.

Our findings were consistent with the findings of Milicevic et al., (2015), which focused on mapping the governance structure of health human resource systems in Serbia. As in our study, Milicevic et al., (2015) reported exceptional healthcare workforce in a majority of Serbian districts (with exception of Sremski), with the threshold of the availability of skilled nurses, midwives, and physicians reported to exceed 59.4 for every 10,000 inhabitants. Moreover, the study identified several bottlenecks that if addressed, could improve health workforce further and improve health service delivery in not only Serbia but also other developed and developing nations.

Poor financing and distribution of human resources in health systems, for instance were found to affect both healthcare services provision and the implementation of healthcare projects by municipal governments adversely. Meru County and Kenya by extension could benefit from such changes.

The findings presented herein differed from those of Ansari et al., (2011) in Pakistan, in which the perception of the public on devolution and health service delivery between 2002 and 2004 was evaluated. In the cross-sectional study, members of the public avoided going to government health facilities due to bad treatment from the healthcare workforce. While the unavailability or provision of low quality medicine was a major concern for a majority, the foul attitude of healthcare personnel worsened service provision, probably due to poor remuneration or unfavorable working conditions.

From the study, the public healthcare workforce influenced how the public sought medical services from government-funded health facilities. Even though we did not evaluate the thoughts of patients on health workforce and association with service delivery, it seems to be a common trend in Kenya too from published data.

Kimathi (2017), while evaluating the challenges related to the devolved health system in Kenya found similar results to Ansari et al., (2011). In the study, it was evident that counties were facing numerous herculean challenges, key among them being human resource deficiency, which contradicted our findings. However, unlike Ansari et al.,

(2011) who linked poor health worker attitudes to poor service delivery, Kimathi linked the deficiencies in health workforce to a stagnation of healthcare post devolution, and in some cases, a reversal of gains made under a centralized system. Addressing deficiencies related to workforce recruitment, management, and remuneration has been proposed.

In Kilifi County, rapid transfer of management functions such as EMMS and HRH after devolution disrupted healthcare workforce at the county level. From the observations of Tsofa et al., (2017), a lack of capacity to manage such electronic systems due to deficiencies in policy led to mass resignations and industrial actions such as strikes, which stifled service delivery to patients attending public health hospitals.

Therefore, clarifying the roles and responsibilities of public hospital managers around staff recruitment, staff placement, and remuneration could, reverse such negative outcomes over time and improve service provision. This was not a concern in Meru as healthcare and auxiliary staff was adequate, and roles elucidated in policy documents.

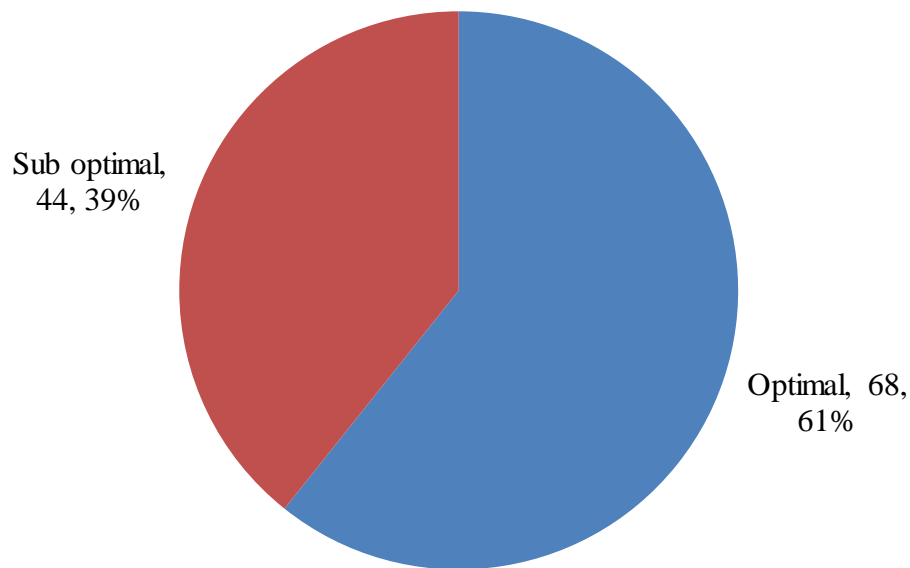
Devolved Medical Supply System

The study evaluated the perception on the status of medical supply systems in Meru County. This was premised on the fact that delivery of health care is only possible if there exist adequate medical supply. Devolution of medical supply system had 6 Likert scaled responses, which after consolidating them using the compute function just like the other indicators yielded to a variable called “Devolved medical supply system.”

Therefore, the minimum possible perception score was 6 and maximum possible perception score was 30. Respondents whose perception score ranged from 6 to 12 perceived that there is optimal medical supply system among public hospitals operating in Meru County while those with perception rating above 12 perceive that there devolution of medical supply system among public hospitals operating in Meru county. The results of the analysis are presented in Figure 4.7.

Figure 4.7

Descriptive Statistics for Devolved Medical Supply System



The results as presented in Figure 4.7 indicate that most of our respondents (68) 60.7 felt that devolution of medical supply system is optimal. Those interviewed cited that that the facilities were always in a position to order medicine directly from KEMSA with less that 40% having the opinion that devolution of medical supply system was sub-optimal.

The findings are in line with the report of McCollum et al., (2018) who offered insights on the changes county governments in Kenya should make to improve the supply of medical equipment and interventions. Using the Tanashi's equity model between 2015 and 2016 in a community health system, the authors demonstrated that devolution medical supply system had a significant and positive impact on the supply side of the medical system and improved accessibility to health services.

Because the counties laid little emphasis on the demand side of the medical supply system, the authors proposed adoption of the Tanahashi framework in totality to improve the acceptability of health services further and ensure universal health coverage for all.

Moreover, our findings contradicted the findings of Tsofa et al., (2017) in Kilifi County, Kenya at the Coast region. While evaluating the effects of devolution on hospital management and the healthcare workforce, and the management of medical supplies and essential medicines, the study established that Nevertheless, the authors observed that counties that had a good capacity to procure drugs and other medical supplies reported better order fill-rate compared to the period before the health function was devolved.

Therefore, according to Tsofa et al., (2017), devolution of the medical supply system seemed to influence access to drugs and medication, which was in line with our finding. However, the need for careful planning and clarification of the responsibilities and roles of management in procurement were reiterated to boost service delivery further. The

rushed implementation of the EMMS system, for instance, seemed to be a major contributor to procurement delays and drug stock outs, as users were not well informed.

However, our findings contradicted the data of Mohamed et al., (2016) in Sudan, in which allotment of medicine in public hospitals worsened with devolution. It also contradicted the findings of a WHO report in 2011, which established that unavailability of medication, especially in public health facilities, was major barrier for the access to medicines. In Africa, for instance, the availability of generic medication in hospitals was lower than 60%, its coverage reported to be worse in the public sector. This presented a significant barrier for the management of patients that should be addresses by hospitals.

A follow-up study by Okech (2016) also reported deviant results. While analyzing the implication of devolving public health care services in Kenya on universal health coverage one of the major findings was that stock-outs of medical supplies and drugs was one of the leading challenges in counties and therefore a limitation of devolution.

Moreover, dilapidated of inadequate health infrastructure and skewed distribution of health resources were other equity concerns, which contributed to disproportional provision of health care services between rural and urban counties. The need for a system for managing pharmaceutical information was reiterated, as it seemed to streamline the drug supply channel of the Kenyan counties studied. The availability of a pharmaceutical management system in the larger Meru County as not evaluated in-depth in this study.

Tumwine et al., (2011) also reported deviant results while evaluating the expiry and availability of essential supplies and medicines through a ‘pull’ and ‘push’ system in rural Ugandan hospital. In the study, access to medical supplies such as drugs was low, but linked to confounding factors such as lack of transport, inadequate training, and inadequate funding. According to Tumwine, implementation of the ‘pull’ system can only increase the availability of essential medicines but also lower the volume of expired drug supplies and thus wastage. Such findings can guide policy formulation in Meru.

4.6 Hypotheses Testing

To elucidate the factors significantly associated with the delivery of health care system in Meru County, logistic regression was used. Logistic regression was deemed the most superb model because the dependent variable was binary in nature. That is, delivery of health care was coded into two categories which are {efficient and in efficient} depending on the respondents perception of delivery of health care. The results of the analysis are as presented in tables 4.2.

Table 4.2***Omnibus Tests of Model Coefficients***

	Chi-square	Df	Sig.
Step	44.34	4	0.001
Block	44.34	4	0.001
Model	44.34	4	0.001

The omnibus test of model coefficients demonstrates the significance of the predictive capability of the model when the predictor variables in a study are considered as a block. It is evident in Table 4.5 that the P – value of the model as a block was $p < 0.01$ which was less than 0.05. This implies that the model has a significant predictive capacity.

Table 4.3***The Model Summary***

-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
13.792 ^a	0.567	0.740

The results in Table 4.3 show that the model predicts 74 % of the variations in delivery of health care in Meru County. This implies that there is room for further studies on delivery of health care at county level given that there is 26 % of variations in delivery of health care, which is still unexplained in this study.

Table 4.4***Hosmer and Lemeshow Test***

Chi-square	Df	Sig.
10.29	3	0.016

The Hosmer and Lemeshow Test measures whether the model is fit for prediction. Table 4.4 shows that the chi-square results, where $\chi^2 = 10.29$, $p=0.016$, which implies that the model is fit and possess significant predictive capability.

Table 4.5***Multivariate Logistic Regression Results***

Variables	B	S.E.	P – value	Odds Ratio
Devolved Health Financing:				
Optimal(reference)	-	-	-	1.000
Suboptimal	-0.308	0.988	0.042	0.735
Devolved Leadership:				
Optimal(reference)	-	-	-	1.000
Suboptimal	-0.645	0.494	0.028	0.525
Devolved Health Care Workforce:				
Optimal(reference)	-	-	-	1.000
Suboptimal	-1.639	0.878	0.032	0.194
Devolved Medical supply system:				
Optimal (reference)	-	-	-	1.000
Suboptimal	-2.151	0.523	0.000	0.116

Hypothesis on Devolved Health Financing

The results indicated that devolved health care financing was significantly associated with efficient health care service delivery in public hospitals in Meru County. Delivery of health care related services among public hospitals in Meru County was 0.735 times lower in hospital with suboptimal devolved health care financing as compared to those with optimal devolved health care financing. The results were significant at 5% level.

These results are in agreement with the findings of Hartwig et al., (2015) which indicated that financing through healthcare schemes facilitated access to critical healthcare services such as antenatal care services. Similarly, the results also agreed with the findings made in a past study which established that healthcare budget decentralization (associated with financing) influenced health outcomes in Chad (Douzounet & Yogo, 2015).

Hypothesis on Devolved leadership

The results also showed that devolved leadership plays a primary role in the delivery of healthcare related services in public hospitals operating in Meru County. Health related services delivery is 0.525 times lower in hospitals, which have suboptimal devolved leadership when compared to those, which have optimally embraced devolved leadership.

These results tallied with findings of an earlier local study by Muchomba and Karanja (2015) that established that devolved leadership influenced development planning and therefore service delivery in decentralized health facilities.

Hypothesis on Devolved Workforce

The study also established that devolved work force is significantly linked with efficiency in the delivery of health care related services among public hospitals in Meru County. Hospitals, which have recorded sub-optimal devolved workforce, are 0.194 times less probable to be efficient in the delivery of health care related services as compared to those hospitals, which have optimally embraced devolved healthcare workforce. The results were significant t at 5% level. The findings tend to agree with those of Miranda (2017) which revealed that, the number of physicians stationed at devolved health centers affected the level of satisfaction of patients seeking services from hospitals.

Hypothesis on Devolved Medical supplies

Lastly, the result shows that devolution of medical supplies is associated with efficient delivery of health services in public hospitals in Meru. Delivery of health care-related services is 0.116 times lower in hospitals where devolution of medical supplies is sub-optimal when compared to those hospitals which have optimally devolved medical supplies. The results were significant at 5% level.

These findings concur with earlier findings that county governments, which had the capacity to procure drugs, had a better fill-rate for orders when equated to the duration prior to devolution of public health services in Kenya (Tsofa et al., 2017).

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

In this chapter, the summary of key findings of this study is presented per research hypotheses. Based on the study's findings, we have drawn conclusions. The chapter ends by making policy recommendations and recommendations for further studies.

5.2 Summary of the findings

Devolved Health Care Financing and Delivery of Health Care Services

The study aimed at establishing whether devolved health care financing is significantly linked with delivery of health care services in Meru County. The results indicated a statistically significant association between devolving health care financing and delivery of health care services in Meru County. Health care-related services delivery in public hospitals in Meru County is 0.735 times lower in hospitals with suboptimal devolved health care financing as compared to those with optimal devolved health care financing.

Devolved Leadership and Delivery of Health Care Services

The study also sought to determine whether devolution of health care leadership is significantly associated with efficient delivery of health care related services in Meru County. As expected, our findings indicated an association between devolved leadership and the efficiency in delivery of health care services among public hospitals in Meru County. Delivery of health care related services is 0.525 times lower in hospitals, which

have suboptimal devolved leadership when compared to those, which have optimally embraced devolved leadership. The results were significant at 5% level.

Devolved Health care Workforce and Delivery of Health Care Services

The third objective of this study was to determine whether devolution of health care workforce influence health care-related services delivery in public hospitals operating in Meru County. The study reported a statistically and significant relationship between devolution of health care workforce and delivery of health care services in public hospitals operating in Meru. Indeed, hospitals with sub-optimal devolved workforce are 0.194 times less likely to deliver efficient health care related services as compared to those hospitals, which have optimally embraced devolved healthcare workforce.

Thus, devolving health care workforce has increased efficiency in delivery of healthcare related services in Public hospitals operating in Meru County.

Devolved Medical Supply System and Delivery of Health Care Services

The last objective of this study was to establish whether devolving medical supply system has increased efficiency in delivery of health care services in public hospitals operating in Meru County. The results of the analysis indicated that devolution of medical supply system increased the efficiency in delivery of health care services provision in public hospitals operating in Meru County. Provision of health care-related services is 0.116 times lower in hospitals where devolution of medical supplies is sub-optimal when compared to hospitals which have optimally devolved acquisition of medical supplies.

5.3 Conclusions

Based on the results of this study, it is evident that all the study objectives were achieved. First, the study sought to establish whether devolution of health financing is significantly associated with efficiency in provision of health care services in Meru County. The study established that devolution of health care financing indeed influenced efficiency in provision of healthcare related services in public hospitals operating in Meru County. Delivery of health care related services among public hospitals in Meru County is 0.735 times lower in hospitals, which have not optimally devolved their health care financing as compared to those, which have optimally devolved their health care financing.

The second objective of this study was to establish whether devolution of leadership to specific hospital is associated with efficiency in provision of health care services in public hospitals operating in Meru County. The findings show that this objective was indeed achieved. Provision of health care-related services is 0.525 times lower in hospitals, which have suboptimal devolved leadership when compared to those, which have optimally embraced devolved leadership.

The third objective was to establish the association between devolved workforce and provision of health care services in Meru County. It is clear that this objective was achieved. The results of the study indicated that hospitals, which have not optimally devolved their workforce, are 0.194 times less likely to be efficient in the delivery of health care related services as compared to those hospitals, which have optimally embraced devolved healthcare workforce. If health care personnel were not managed at

the county level, then delivery of healthcare related services would be 0.194 times lower than it is now in the devolved health care scenario.

The last objective was to determine whether devolving health care medical supply system influence the efficiency of provision of health care in public hospitals operating in Meru County. From the results of the study, it is evident that this objective was also achieved. Delivery of health care related services is 0.116 times lower in hospitals where devolution of medical supplies is sub-optimal when compared to those hospitals which have optimally devolved acquisition of medical supplies.

5.4 Recommendations

The surveyed health care facilities should exercise equitability in the allocation of finances. The facilities should also seek additional financing to supplement the traditional income to cover operational costs and procure state-of-the-art equipment. Seeking additional funds could be coupled with coming up with income generating activities.

Concerning devolved leadership, it is important for the management of the health facilities to be transparent in administration activities. The entire fraternity of the surveyed health facilities should be transparent in addressing patient concerns. Transparency and accountability are vital for ensuring better service delivery. In cases of difficulties in management of finances, it would be prudent for the facilities to recruit high-qualified individuals in positions concerning finance administration and

management. This would avoid mismanagement, embezzlement and would enhance better commitment of funds to prioritized areas.

It is recommended that the health facilities in Meru County should do appraisal of its human resource in order to determine grey areas that need improvement. The management should further recruit qualified personnel such as nurses and supporting staff in order to avoid gaps in service delivery. The workforce should be appropriately remunerated and motivated. Better-remunerated workforce translates to better performance and hence better service delivery. The management should further follow the policy guidelines about promotion and salary rise in the facilities. Stagnation in one position could cause dissatisfaction and adverse provision of health care services.

Concerning devolved medical supply, it is recommended that the County Governments should, on behalf of the devolved health facilities, put up medical infrastructure necessary to up their service delivery. These infrastructures include well-equipped laboratories and other support facilities. It is also advisable for the facilities to have reliable and high-quality supplies of drugs and medical equipment. Furthermore, the medicine and drug allotment should be prioritized on need basis in order to avoid stock outs, thus ensuring reliable supplies.

5.5 Suggestions for Further Research

The study only concentrated on public hospitals operating in Meru County. A similar study should be conducted in different counties, preferably urban, where there have been

doctors and nurses strikes. Devolution in Kenya has brought close the service delivery to Kenyans, it is important to investigate the impact of devolved governance on the performance of health sector. A comparative study on private and public health facilities may be conducted to ascertain the health care service delivery in Kenya.

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APPENDICES

APPENDIX I: INFORMED CONSENT FORM

SUBJECT: INFORMED CONSENT

Dear Participant,

Introduction:

My name is LYDIA WANJA NJIRU, a Master of Science student at the Kenya Methodist University. For the conferment of a degree of Master of Health Systems Management, I intend to do a study on the “THE INFLUENCE OF DEVOLVED HEALTH SYSTEM ON HEALTH SERVICE DELIVERY.” This is a cross-sectional study whose findings will inform the government, researcher, and health professional in management on how the devolved system in Kenya has influenced the delivery of health services in Meru County. Such information will help the management of hospitals and the government to improve service delivery with regard to health to counties. It will also inform management on strategies for optimizing health care and therefore have a health population that contributes the development and growth of Meru county and Kenya.

Study protocols

Participation in our research study is not mandatory. However, if you are willing to be a participant, you will be required to fill a questionnaire that evaluates the six pillars of the devolved healthcare system of Meru County and Kenya. The questionnaire has short closed ended questions that will take you a few minutes to complete. As stated earlier, you are not obliged to be a participant in our study. There are no penalties for refusing to participate. Moreover, your refusing to participate will not have a bearing on your in the country nor affect how you access and or utilize health care services in Kenya and Meru County. If you have any questions during this process or at any stage of the study, feel free to ask. You can also request for withdrawal from the study whenever you feel like or to decline to respond to some statements and or questions that you deem inappropriate or that you do not feel comfortable answering.

Discomfort and risks

This will be a self-administered interview and therefore will not harm you in any way. However, the questionnaire that we will offer you might have intimate questions that you might feel uncomfortable or embarrassed to answer. If this is a problem for you, feel free to skip the question or ask the principle investigator for clarifications. You are also at

liberty to stop the interview process if you deem that to be appropriate or to relax your mind. We estimate that the questionnaire will take you 40 minutes to fill.

Benefits

Your participation in this study will benefit Meru County and the government of Kenya in many ways. First, by providing truthful information, you will help us to identify gap in the health system on Meru County and therefore formulate policies on how to improve and or strengthen it. As a result, men, women, and children from Meru county and Kenya in general will have better access to health care and live healthier and more productive lives as a result. Your participation will help us to learn more about this area of research.

Rewards

You will not be offered any monetary compensation for being a participant in our study.

Confidentiality

We will strive to maintain your confidentiality throughout the data collection process and dissemination of results. We will not capture your name, ID number, or any other personal identifier in the questionnaire. Second, this will be a self-administered questionnaire. You can complete at the privacy of your home or office and submit without anybody knowing. All consent forms will be kept in locked cupboards after completion of the study.

Contact Information

If you happen to have concerns, sentiments, and or questions about our research study, feel free to contact the deputy vice chancellor in charge of academics at the Kenya Methodist University Meru.

Statement from participant

The details about my being a participant in this research study have been clarified to me. Moreover, I have had the opportunity to read the consent and the principle investigator has answered my questions satisfactorily. I understand that being a participant in this research study is voluntary. I have also been informed that, whenever I want, I can stop participating in the study at any time without prejudice in my workplace or daily life.

Participant's name:
Date:
Signature:

Investigator's Statement

I, the undersigned, have given the participant a chance to read and understand the consent form. The procedures have been explained and the participant offers a chance to ask questions.

Interviewers name:

Date:

Interviewer signature:

APPENDIX II: INFORMED CONSENT (KISWAHILI)

FOMU YA IDHINI

Mpenzi Mshiriki,

Utangulizi:

Jina langu ni LYDIA WANJA NJIRU, mwanafunzi katika Chuo Kikuu cha Methodist cha Kenya. Kwa dhamana ya shahada ya Usimamizi wa Mifumo ya Afya, ninakusudia kufanya utafiti juu ya "THE INFLUENCE OF DEVOLVED HEALTH SYSTEM ON HEALTH SERVICE DELIVERY ." Matokeo ya huu utafitiyataarifu serikali, mtafiti, na mtaalamu wa afya katika usimamizi juu ya jinsi mfumo uliowekwa nchini Kenya umeathiri utoaji wa huduma za afya katika kaunti ya Meru. Habari kama hii itasaidia usimamizi wa hospitali na serikali kuboresha utoaji wa huduma kuhusu afya kwa kaunti. Pia itahamisha usimamizi juu ya mikakati ya kuongeza utunzaji wa afya na kwa hivyo kuwa na idadi ya afya ambayo inachangia maendeleo na ukuaji wa kata ya Meru na Kenya.

Itifaki za utafiti

Ushiriki katika utafiti wetu wa utafiti sio lazima. Walakini, ikiwa uko tayari kuwa mshiriki, utahitajika kujaza dodoso ambalo linatathmini nguzo sita za mfumo wa huduma ya afya ya kaunti ya Meru na Kenya. Dodoso lina maswali mafupi yaliyomalizika ambayo itachukua dakika chache kukamilisha. Kama ilivyoelezwa hapo awali, sio lazima kuwa mshiriki wa masomo yetu. Hakuna adhabu ya kukataa kushiriki. Isitoshe, kukataa kwako kushiriki hautakuwa na athari yoyote nchini au kuathiri jinsi unavyopata na kutumia huduma za utunzaji wa afya nchini Kenya na Kaunti ya Meru. Ikiwa una maswali yoyote wakati wa mchakato huu au katika hatua yoyote ya utafiti, jisikie huru kuuliza. Unaweza pia kuomba kujiondoa kutoka kwa masomo wakati wowote unahisi kama au kukataa kujibu taarifa fulani na au maswali ambayo unahisi hayafai au haujisikii kujibu. Usumbufu na hatari Hii itakuwa mahojiano ya kujisimamia mwenyewe na kwa hivyo haitakuumiza kwa njia yoyote. Walakini, dodoso ambalo tutakupa linaweza kuwa na maswali ya ndani ambayo unaweza kuhisi vizuri au aibu kujibu. Ikiwa hili ni shida kwako, jisikie huru kuruka swali au uulize mpelelezi wa kanuni kwa ufafanuzi. Pia uko katika uhuru wa kumaliza mchakato wa mahojiano ikiwa unaona hiyo inafaa au kupumzika akili yako. Tunakadiria kuwa dodoso litakuchukua dakika 40 kujaza.

Usumbufu na hatari

Hii itakuwa mahojiano ya kujisimamia mwenyewe na kwa hivyo haitakuumiza kwa njia yoyote. Walakini, dodoso ambalo tutakupa linaweza kuwa na maswali ya ndani ambayo

unaweza kuhisi vizuri au aibu kujibu. Ikiwa hili ni shida kwako, jisikie huru kuruka swali au uulize mpelelezi wa kanuni kwa ufafanuzi. Pia uko katika uhuru wa kumaliza mchakato wa mahojiano ikiwa unaona hiyo inafaa au kupumzika akili yako. Tunakadiria kuwa dodoso litakuchukua dakika 40 kujaza.

Faida

Ushiriki wako katika utafiti huu utafaidika Kaunti ya Meru na serikali ya Kenya kwa njia nyingi. Kwanza, kwa kutoa habari ya kweli, utatusaidia kutambua pengo katika mfumo wa afya kwenye kaunti ya Meri na kwa hivyo tunga sera za jinsi ya kuiboresha na au kuiimarisha. Kama matokeo, wanaume, wanawake, na watoto kutoka kaunti ya Meru na Kenya kwa ujumla watapata huduma bora ya kiafya na kuishi maisha bora na yenye tija kama matokeo. Ushiriki wako utatusaidia kujifunza zaidi juu ya eneo hili la utafiti.

Zawadi

Hautapewa fidia yoyote ya pesa kwa kuwa mshiriki katika masomo yetu.

Usiri

Tutajitahidi kudumisha usiri wako wakati wote wa mchakato wa ukusanyaji wa data na usambazaji wa matokeo. Hatutachukua jina lako, nambari ya kitambulisho, au kitambulisho chochote cha kibinafsi kwenye dodoso. Pili, hii itakuwa dodoso la kujisimania mwenyewe. Unaweza kukamilisha usiri wa nyumba yako au ofisi na uwasilishe bila mtu yeyote kujua. Fomu zote za idhini zitahifadhiwa kwenye kabati zilizofungwa baada ya kumaliza masomo.

Habari ya Mawasiliano

Ikiwa utatokea kuwa na wasiwasi, hisia, na au maswali juu ya utafiti wetu wa utafiti, jisikie huru kuwasiliana na naibu wa kansela wa malipo ya wasomi katika Chuo Kikuu cha Methodist cha Kenya Meru.

Taarifa kutoka kwa mshiriki

Maelezo juu yangu kuwa mshiriki katika utafiti huu yamefafanuliwa kwangu. Kwa kuongezea, nimepata nafasi ya kusoma idhini na mchunguzi wa kanuni amejibu maswali yangu kwa kuridhisha. Ninaelewa kuwa kushiriki katika utafiti huu ni hiari. Pia nimejulishwa kuwa, wakati wowote ninapotaka, naweza kuacha kushiriki katika masomo wakati wowote bila ubaguzi katika kazi yangu ya maisha au maisha ya kila siku.

Jina la Mshiriki:

Tarehe:.....

Sahihi:

Taarifa ya Mpelelezi

Mimi, niliowekwa chini, nimempa mshiriki nafasi ya kusoma na kuelewa fomu ya idhini. Taratibu zimeelezewa na mshiriki hutoa nafasi ya kuuliza maswali.

Wahojiwa jina:

Tarehe:

Saini ya Mhojiwa:.....

APPENDIX III: RESEARCH QUESTIONNAIRE

RESEARCH QUESTIONNAIRE FOR COUNTY AND SUB-COUNTY HEALTH MANAGEMENT COMMITTEES

Instructions:

This questionnaire will be used to collect data for a research study on “*Influence of Devolved Healthcare System on Delivery of Health Services in Meru County, Kenya*”. To contribute to knowledge on this subject, we have invited you to be a participant in our research by completing this closed ended questionnaire. Mark a responses with a tick (√) on your choice. While responding to the questionnaire you are advised not write your name, facility or institution, or information that somebody can use to identify you on the questionnaire. The data that we collect from you will be handled with confidentiality and shared only for informational purses and for the attainment of an academic degree.

Part I: Background Information

1. Kindly indicate highest level of education that you have attained

Tertiary college level []

Undergraduate level []

Postgraduate level []

2. How long have you been in a management position?

Less than 3 years []

3 to 5 years []

6 to 10 years []

Above 10 years []

Part II: Devolved Healthcare Financing

Using the Likert scale that we have provided you below, please indicate whether you agree or disagree with the illustrated statements and to what level.

5=Strongly Agree (SA)

4=Agree (A)

3= Not Sure (NS)

2=Disagree (D)

1=Strongly Disagree (SD)

	SA	A	NS	D	SD
3. The funds disbursed to this health facility are ALWAYS sufficient to cater for the hospital budget.					
4. Funds disbursement to this health facility is ALWAYS executed timely.					
5. There is ALWAYS equitability in disbursement of funds to county health facilities.					
6. This health facility MOSTLY gets significant finances from user fees charged on patients					
7. This health facility OFTENLY receive significant funding from donors.					
8. This health facility RARELY receives minimal funds from private corporate bodies.					
9. ALL health facilities have income generating activities that bring in significant revenue.					

Part III: Devolved Leadership

Using the Likert scale that we have provided you below, please indicate whether you agree or disagree with the illustrated statements and to what level.

5=Strongly Agree (SA)

4=Agree (A)

3= Not Sure (NS)

2=Disagree (D)

1=Strongly Disagree (SD)

	SA	A	NS	D	SD
10. There is ALWAYS political interference in decision making process in this facility.					
11. RARELY do the managers of this health facility face conflict of interest in managing the facility.					
12. The administration of this health facility HARDLY faces difficulties in managing finances disbursed to them.					
13. The administration of this health facility is RARELY executed in a transparent manner.					
14. The managers of this health facility is ALWAYS held to account for the operations of the entities.					
15. The management of this facility is up to the task.					
16. The county's health vision and plans for the future have been clearly communicated to this facility's managers					

Part IV: Devolved Healthcare Workforce

Using the Likert scale that we have provided you below, please indicate whether you agree or disagree with the illustrated statements and to what level.

5=Strongly Agree (SA)

4=Agree (A)

3= Not Sure (NS)

2=Disagree (D)

1=Strongly Disagree (SD)

	SA	A	NS	D	SD
15. This facility is ALWAYS adequately staffed in all departments.					
17. The healthcare workers have ALL requisite skills and expertise to undertake their responsibilities.					
18. The healthcare staff are ALWAYS adequately remunerated as per their job group placements.					
19. The facility's management is HARDLY involved in recruitment of the devolved healthcare staff.					
20. The healthcare staff recruitment is OFTENLY done regularly (at least every year).					
21. The staff promotion is ALWAYS effected on merit.					
22. The staff promotion is ALWAYS done regularly (at most in every 3 years).					

Part V: Devolved Medical Supply System

Using the Likert scale that we have provided you below, please indicate whether you agree or disagree with the illustrated statements and to what level.

5) = Strongly Agree (SA)

4) = Agree (A)

3) = Not Sure (NS)

2) = Disagree (D)

1) = Strongly Disagree (SD)

	SA	A	NS	D	SD
23. There are ALWAYS regular cases of medicines and supplies stock-out in this facility.					
24. The medicines and supplies stocked in this health facility are ALWAYS of high quality.					
25. This facility RARELY experiences cases of expired drugs and supplies.					
26. This health facility OFTENLY has adequate infrastructure to address all health needs of patients.					
27. The medicine allotment is ALWAYS premised on need basis of recipient health facility.					
28. This facility ALWAYS in a position to order medicines directly from KEMSA even with the devolved healthcare system.					

Part IV: Delivery of Health Services

Using the Likert scale that we have provided you below, please indicate whether you agree or disagree with the illustrated statements and to what level.

5) = Strongly Agree (SA)

4) = Agree (A)

3) = Not Sure (NS)

2) = Disagree (D)

1) = Strongly Disagree (SD)

	SA	A	NS	D	SD
29. Health services provided in this facility are ALWAYS accessible, acceptable, affordable and available.					
30. There are RARELY complaints lodged by patients in this facility.					
31. The healthcare workers are ALWAYS available to offer requisite health services.					
32. The County Government OFTENLY supervises delivery of health services in this facility.					
33. The Ministry of Health is ALWAYS involved in all health service delivery in this facility.					
34. The suppliers of this facility RARELY have an influence on the health service delivery in this facility.					
35. The Payers (such as NHIF and other insurance firms) HARDLY affect health service delivery.					
36. The waiting time required to serve patient has GREATLY reduced since healthcare was devolved.					
37. The number of patients seeking services from this health facility has GREATLY increased since healthcare was devolved.					

Thank you for your time and cooperation.

APPENDIX IV: ETHICAL CLEARANCE CERTIFICATE



KENYA METHODIST UNIVERSITY

P. O. BOX 267 MERU - 60200, KENYA
TEL: 254-064-30301/31229/30367/31171

FAX: 254-64-30162
EMAIL: info@kemu.ac.ke

22ND NOVEMBER 2018

Lydia Wanja Njiru
HSM-3-0967-3/2014

Dear Lydia,

RE: ETHICAL CLEARANCE OF A MASTERS' RESEARCH THESIS

Your request for ethical clearance for your Masters' Research Thesis titled "Influence of Devolved Healthcare System on Delivery of Health Services in Meru County, Kenya" has been provisionally granted to you in accordance with the content of your project proposal subject to tabling it in the full Board of Scientific and Ethics Review Committee (SERC) for ratification.

As Principal Investigator, you are responsible for fulfilling the following requirements of approval:

1. All co-investigators must be kept informed of the status of the project.
2. Changes, amendments, and addenda to the protocol or the consent form must be submitted to the SERC for re-review and approval prior to the activation of the changes. The Proposal number assigned to the project should be cited in any correspondence.
3. Adverse events should be reported to the SERC. New information that becomes available which could change the risk: benefit ratio must be submitted promptly for SERC review. The SERC and outside agencies must review the information to determine if the protocol should be modified, discontinued, or continued as originally approved.
4. Only approved consent forms are to be used in the enrollment of participants. All consent forms signed by subjects and/or witnesses should be retained on file. The SERC may conduct audits of all study records, and consent documentation may be part of such audits.

5. SERC regulations require review of an approved study not less than once per 12-month period. Therefore, a continuing review application must be submitted to the SERC in order to continue the study beyond the approved period. Failure to submit a continuing review application in a timely fashion will result in termination of the study, at which point new participants may not be enrolled and currently enrolled participants must be taken off the study.

Please note that any substantial changes on the scope of your research will require an approval.

Yours sincerely,


DR. WAMACHI
Chair, SERC

cc: Director, RI & PGS


APPENDIX V: NACOSTI CLEARANCE CERTIFICATE

THIS IS TO CERTIFY THAT:
MISS. LYDIA WANJA NJIRU
of KENYA METHODIST UNIVERSITY,
11551-100 NAIROBI, has been permitted
to conduct research in Meru County
on the topic: INFLUENCE OF DEVOLVED
HEALTHCARE SYSTEM ON DELIVERY OF
HEALTH SERVICES IN MERU
COUNTY, KENYA
for the period ending:
17th January, 2020

Permit No : NACOSTI/P/19/99161/27491
Date Of Issue : 17th January, 2019
Fee Received :Ksh 1000

[Handwritten Signature]
Applicant's Signature

[Handwritten Signature]
Director General
National Commission for Science,
Technology & Innovation



APPENDIX VI: MERU DEPARTMENT OF HEALTH CLEARANCE

COUNTY GOVERNMENT OF MERU DEPARTMENT OF HEALTH

Telegrams: "HEALTH" Meru
Telephone: Meru 064-32370/1
Fax: 31242
Email: hospitalmeru@gmail.com
When replying should be to:
County Director Medical Services



COUNTY DIRECTOR MEDICAL SERVICES
MERU COUNTY
P.O. BOX 8 – 60200
MERU

Ref: MRU/MED/GEN/C.50

Date: 4th February, 2019

TO

Dr. Lydia Wanja Njiru
Kenya Methodist University

RE: RESEARCH APPROVAL

Following your request via your letter dated 21st January 2020, I am pleased to inform you that your request to conduct research titled "INFLUENCE OF DEVOLVED HEALTHCARE SYSTEM ON DELIVERY OF HEALTH SERVICES IN MERU" has been approved.

By a copy of this letter, all SCMOH's and CHMT members are requested to offer you the necessary support in your research.

You are expected to share the final report with the department.

I wish you all the best.


Dr. Lilian Karoki
Director of Medical Services
Meru County



Cc

- CECM – Health
- Chief Officer of Health
- All CHMT Members
- CEO MeTRH
- SCMOH's

APPENDIX VII. MAP OF KENYA SHOWING MERU COUNTY

