AN ASSESSMENT OF ELEMENTS INFLUENCING IMPLEMENTATION OF UNIVERSAL HEALTH COVERAGE AMONG COUNTIES IN KENYA: A CASE OF MAKUENI COUNTY

By

Benjamin Njeru

A Research Project Submitted to Faculty of Business, Computer Science and Communication Studies in Partial Fulfilment of the Requirements for the Award of Master of Business Administration Degree (Strategic Management Option) of St. Paul's University

2019

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Supervisor: Dr Charity Muraguri and Mr Robert Abayo

2019

DECLARATION

This research project is a product of my own work and is not the result of anything done in collaboration. It has not been previously presented to any other institution. I agree that this project may be available for reference and photocopying, at the discretion of the College.

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I confirm that the work reported in this research project was carried out by the student under our supervision.

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DEDICATION

This study is dedicated to my wife Gladys and my two children Wesley and Shanice for according me time and enduring my absence in order to allow me to concentrate.

I also wish to dedicate it to my parents who sacrificed their resources to educate me even without any assurance for a job at the end.

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First, I wish to thank God for good health and sound mind all through my studies. He provided me with all resources necessary to undertake my studies and for this I will always remain grateful.

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To my supervisors Dr. Charity Muraguri and Mr. Robert Abayo no words can be enough to thank you for your patience, commitment and support you gave me in coming up with a document that can contribute towards scholarly body of knowledge.

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OPERATIONAL DEFINITION OF TERMS

Infrastructure: It is the essential physical and structures or offices which are required for the task of a general public.

Human resource capacity: Improving learning and skills in individuals and meetings of individuals is crucial in structuring, advancing, managing and maintaining organizational and operational foundations and processes that are essential locally.

Funding: Refers to the act of providing financial resources, inform of money, or other characteristics, such as effort or time, to finance a requirement, program and assignment, mostly by an association or organisation.

Financing: Used synonymously with Funding.

Technology: Is a collection of systems, capabilities, strategies and methodologies used, for instance, in assembling products or administrations or in achieving goals.

Universal Health Coverage: Means that all individuals and networks can use the promotional, preventive, remedial, rehabilitative and palliative welfare administrations they need to be of adequate quality in order to be sustainable, while at the same time ensuring that the use of these administrations does not open the client to monetary hardship.

LIST OF ABBREVIATIONS AND ACRONYMS

AMREF	:	Africa Medical Research Foundation
CME	:	Continuous Medical Education
COK	:	Constitution of Kenya
GoK	:	Government of Kenya
HRD	:	Human Resource Development
ICT	:	Information Communication Technology
HRH	:	Human Resource for Health
MDG	:	Millennium Development Goals
MOH	:	Ministry of Health
NGO	:	Non-Governmental Organization
NHIF	:	National Health Insurance Fund
NHIF	:	National Hospital Insurance Fund
OOP	:	Household Out of Pocket Expenditure
PHC	:	Primary Healthcare
UHC	:	Universal Health Coverage
WHO	:	World Health Organisation

ABSTRACT

Universal Health Coverage (UHC) is an initiative which promotes access to quality healthcare service, equitably and to everybody regardless of their financial capabilities. The aim of UHC was to ensure that people can get quality, adequate and timely health care services they need without being exposed to any financial risks (WHO, 2010). The aim of this study was to assess the elements influencing the implementation of Universal Health Coverage among Counties in Kenya. The specific objectives were to investigate the effect of funding; infrastructure, technology and human resource capacity on implementation of Universal Health Coverage among Counties in Kenya.This study adopted the descriptive research design targeting 291respondents made up of 7 specialist doctors, 22 medical officers, 201 nurses and 61 clinical officers in county and sub-county hospitals in the county. The study conducted a census of the entire target population responding to the data collection instrument which was a questionnaire. The study carried out a descriptive analysis to measure the effects of the independent variables on the dependent variables. Regression analysis was used to measure the relationship between the independent and dependent variables. The findings from this study will be of significance to national and county governments in identifying the most critical pillars for the achievement of the overall success of the Universal Health Coverage. The research would further add knowledge to the existing body of literature by providing empirical findings that can be used as a useful reference point for other scholars. From the study key findings, it was concluded that infrastructure was the key driver of success in the implementation of Universal Health Coverage in Makueni County in Kenya. The success realised in the implementation of Universal Health Coverage in Makueni County in Kenya was as a result of the county's investment in availing and maintaining a vigorous infrastructure. The human resource capacity was one of the major determinants of success behind the implementation of Universal Health Coverage. Funding had a greatest and positive effect on implementation of UHC among Counties in terms of adequacy of funds, prudent and efficient use of funds, timely disbursement of funds and accountability and prioritization in financial resources. Technology too was identified as critical element explaining success of implementation of Universal Health Coverage. Technology helped to improve the efficiency and productivity in the hospitals in the Makueni County. Government policies and regulations had a significant moderating effect on implementation of universal health coverage. The study recommends that the Makueni County management should continuously upgrade its infrastructure to meet the increasing and emerging needs of UHC implementation. The Makueni County management should ensure that all the human resources are retrained on UHC requirements to endure their competence was aligned with UHC components. The management of Makueni County should institute stringent measures to curb pilferage and ensure that UHC implementation funds are utilised accordingly. The management of Makueni County should continue to invest in emerging medical technology to enhance the UHC implementation. Finally, the management of Makueni County should continuously seek to comply and work closely with National government policies and regulations on UHC to achieve the best standards and quality in provision of healthcare.

CHAPTER ONE
INTRODUCTION

1.1. Background Information

The 2017 UHC Global Monitoring Report showed that more than half of the population in the world has limited access to important health services. Besides, more than 10% of 800 million people household budget is directed to health care and almost 100 million people are pushed into risky poverty every time as a result of out-of-pocket health (European Patients Forum, 2017). As Africa's population expands, it is estimated to reach 2.5 billion by 2050, the region faces critical healthcare challenges with high levels of child and maternal mortality, malnutrition, inefficient health systems and the growing burden of chronic diseases, such as diabetes. The high levels of out-of-pocket expenditure pushing large numbers of households into extreme poverty, poor social, economic and environmental status and the fact that a sizable majority of African citizens work in the informal sectors, further compound the problem (World Bank, 2016).

For most of the families in Kenya, the health care cost is as difficult with the majority of the population unable to afford the costs associated with basic health care. As per the WHO, the bigger proportions of the Kenyan poor households are not able to cater for health care with no financial challenges. Nearly 4 out of 5 of the citizens in Kenya have limited access to medical insurance, thus most of the population is not included in quality health care services. Every year over a million Kenyans gets trapped into poverty because of a catastrophic out of pocket payments due to health reasons. Several health indicators show the urgent need for action, especially at the primary health care level, in order to ensure every Kenyan can live a healthy and full life (Schultink, Eggers & Chatterjee, 2018).

Universal Health Coverage has the potential to transform the lives of millions guaranteeing access to life-saving health services while helping individuals and families avoid crippling health expenses and the poverty trap.UHC is a system in which everybody has equal access to the health care services they need without facing any monetary tribulations (Karanja, 2014).The goal of UHC is to provide every single person with affordable access to health services. This entails three correlated objectives

which are; fairness and lack of discrimination towards access to health services, that the quality of health care services is desirable and should improve the condition of the patients receiving them; and ensuring that the patients are protected from any financial risks arising from access to healthcare services (KPMG Africa, 2014).

The Government of Kenya has prioritized UHC in its Big 4 agenda over the next 5 years to ensure a healthy and productive population. The government of Kenya has joined hands with various development partners to initiate a number of policies and strategies whose aims are to achieve Universal Health Coverage. Kenya has undertaken several reforms on the health system and financing to increase coverage for quality health services improve the availability of healthcare services and reduce out of pocket expenses (Owino, 2018). Other government projects towards UHC have managed world-class medical equipment in all counties, free maternity health program and expanded National Hospital Insurance Fund. The path to achieving UHC is not always straightforward, as countries progress toward UHC, they grapple with dual challenges of how to provide universal access to essential health services and ensure financial sustainability (Pandey, 2018). This study seeks to assess the elements that influence implementation of Universal Health Coverage among Counties in Kenya.

1.1.1. Healthcare Systems in Kenya

The healthcare sector in Kenya is organized into several hierarchies that include both public and private institutions. The private sector players are categorized as private for-profit and private non-profit making which includes non-public organizations and faith-based organizations (Netherlands Enterprise Agency, 2016).

The Kenya Constitution (2010) has put in place the necessary legal structures and procedures that will ensure a more detailed and inclusive health care system which will enhance access to quality health care. The Ministry of Health (MOH) provides the necessary leadership in the healthcare sector in Kenya at the national level while at the same time; it is tasked with developing the national policy, providing technical support at all stages and checking for quality and standards in the provision of healthcare services. MOH also provides guidelines on the charges for health care services and conducts studies that can be used to manage and run the entire health care sector in the country (Ministry of Health, 2014).Kenyan health services and programs funding are

from three primary sources: the government through the exchequer; donors who fund health programs; and the private sector and NGOs (Onyango, 2016).

In August 2010, Kenya embraced a new constitution that tabled a new system of governance away from the initial centralized system. The new structure of governance involved a national government and 47 county governments (Barker, Mulaki, Mwai& Dutta, 2014). Under this new structure, the county governments are responsible for the delivery of health care services while the national government is tasked with management of the national hospitals, policy formulation and capacity building as far as health care is concerned (Gimoi, 2017).At the county level, the responsibility of the devolved health units is to make the appropriate laws and plans in place, in addition to establishing and staffing of public service bodies. Although the two levels of governments are different, they occasionally consult and depend on each other and also work together when conducting their day to day businesses (Muri, Odour., & Nguti, 2013).

1.1.2. Makueni County

Makueni County is county number 17, located in the former Eastern province of Kenya. It sits on an area of 8,008.7 Km^2borderingMachakos, Kitui, TaitaTaveta, and Kajiado Counties to the North, East, South and West respectively. Makueni County is divided into six sub-counties, which are Makueni, Mbooni, Kibwezi East, Kibwezi West, Kaiti and Kilome constituencies. The projected population for 2018 based on the 2009 census is 1,002,979 where 488,378 are males and 514,601 are females. The population density in the county is 125 persons per Km^2 (Annual Development Plan (ADP) 2019/20).

Makueni County has one level five hospital, nine level four hospitals that include: Makindu, Makueni, Mbooni, Tawa, Kilungu, Sultan Hamud, Matiliku, Kathonzweni, and Kibwezi. The County also has twenty-one level -three hospitals previously referred to as health Centres and 125 dispensaries. In total, the County has 156 public health facilities. The county has 2 private hospitals, 36 clinics and 27 dispensaries that complement the efforts of the government. However, the healthcare facilities and services in the County are inadequate given its vastness. On Average, one has to travel a distance of 6 kilometres to dispensary/health centre. The current doctor to population ratio is 1: 22,000 against the recommended standard 1:10,000. The nurse to patient ratio

is 1:2,000which is way below the required standard of 1:1,000 (Makueni County Government Vision 2025).

Currently, Makueni County has an average morbidity rate of 33.3%, which is more than the national average of 24.7%. The most common diseases in this county are Malaria, flu, stomach-ache, upper and lower respiratory disease and diarrhoea with prevalence rates of 51.1%, 12.7%, 5%, 3.3% and 2.5% respectively. Between the year 2013 and 2017, the county health department has promoted universal healthcare programme where the coverage rose from 30% of the total population to 38%. The 100% target was not achieved due to limited access, poor health-seeking behaviour, and poverty that create a financial barrier (First County Integrated Development Plan 2013-2017).

1.1.3. UHC in Makueni County

The aim of health sector devolvement is to attain universal coverage by bringing citizens closer to health decisions, making sure that there is effective and accessible, well distributed resources, thereby enhancing the health facilities accessibility and services and reforms to the NHIF to comprehensively cover a lot of defenceless people and enhance the health systems to assist in lowering the delivering health care services costs via telemedicine, reduction of inadequacies in provider payment systems and generation of better data are some of the initiatives undertaken by the Kenyan government to drive towards UHC (Flores, et al., 2017).

Makueni County Health Department has invested in the various WHO building blocks to lay the foundation for Universal Healthcare. These include; investing in service delivery including operating procedures; robust leadership and governance for healthcare; investing in health information for evidence-based practise; expanding infrastructure for both primary health care and specialised care; ensuring regular supply of medical products, vaccines and technologies; recruitment of human resources for health; and allocating at least 30% of County Budget to health care financing.

In September 2016, Makueni piloted a programme of Universal Healthcare for senior citizens over 65 years. In this programme, all bills incurred by patients at the County Hospitals are reimbursed by the Government of Makueni County. The County population is mainly rural based, with the County's poverty index at 64.3% necessitating social programmes to cushion citizens from catastrophic healthcare expenditure. All citizens residing in Makueni County are eligible and have to undergo

a registration process that aims to register the principal beneficiary, their spouse(s) and direct dependents below the age of 18 or 24 years for school-going dependents. There is an annual non-refundable registration fee of KES 500 per household and payment mechanism is 'fee for service'.

The County holds the vision to further pursue UHC in the Makueni County Vision 2025. According to the vision, the County seeks to enhance health care access for the over 65 percent of the population by facilitating enrolment in the NHIF scheme. It will also undertake to work with NHIF and its health department to popularize subscription to the scheme and further provide care to vulnerable communities through outreach programmes. In addition, the County Government will sensitize Makueni citizens living outside the County to promote insurance purchase through NHIF for relatives back home. Other interventions include promoting group health financing through community groups, associations and cooperatives; working with partners and actors in health care in the County to close the financial gap and enhance resource mobilization (Makueni County Government Vision, 2025).

In order to ensure that citizens get quality services, costs are managed and diagnosis time is minimized, the Makueni County Government will strengthen the health information data management system leading to better data collection, storage retrieval and reporting in the health sector. The county also seeks to establish a telecentre complete with requisite infrastructure in one of the referral hospitals to offer diagnostic services to patients located in remote locations. The Centre will house specialized doctors and will be equipped with ICT technology for providing distant diagnostic services. The health management information data system will be configured to support the management of drugs and equipment supplies in all the medical facilities in the County.

To address the issue of staff shortage the county is looking to recruit, redistribute existing staff and use e-health services. Additional measures include: collaboration with training institutions for attachment opportunities for students and setting up a telemedicalcenter to facilitate access to specialized medical services for patients in remote areas where there are no specialized doctors. Further, the County Government will invest in specialized diagnostic infrastructure, technology, and equipment such as

X-ray, Ultrasound, CT scan, MRI and other equipment to facilitate thorough investigation and screening at all health facilities (Makueni County Government Vision, 2025).

1.1.4. Elements of Universal Health Coverage

World Health Organization identifies four significant elements essential for universal coverage realization include a well-managed health system, a system for funding health services, essential medicines accessibility and technologies, and sufficient capability of well-trained health staff (WHO, 2010).The main aim of the healthcare funding/financing system is to have equitable access to healthcare with the aim of attaining universal coverage. This also enables people with the limited financial ability to make their contribution to healthcare financing system while still having the ability to access quality services without discrimination on basis of their financial capacity (Munge, 2014). The main source of Kenyan health services funding is Household Out Of Pocket Expenditure (OOPs). The donor funding level is moderately high, with a noteworthy portion of this funding being off-budget. A substantial donor funding share is for important programmes such as HIV/AIDS, TB, malaria, reproductive health and immunization (Ministry of Health, 2015).

The NHIF cover was expanded by the Government enabling it to cover Kenyans from all walks of life to get medical cover at costs which are affordable. NHIF in 2013, only offered inpatient and non-comprehensive cover for civil servants & disciplined services (National Health Insurance Fund, 2015). The NHIF expansion has seen increased in registration of members from 3,812,261 in 2013 to 6,200,000 in 2017.Health funding envelope in Kenya is advancing slowly with allocation to healthcare growing every financial year, increasing for example from about Ksh 34.4 billion in 2008/09 to Ksh 60.9 billion in 2017/2018 financial year. This is expected to rise in the mid-term to Ksh 61.9 billion and Ksh 62.7 billion for 2018/19 and 2019/20, respectively (Koon, 2017).

Health infrastructure links to all the physical facilities, non-medical equipment, transportation and technology infrastructure needed for efficient services delivery by the governments at county and national level as well as other providers of health services. WHO suggests increase in accessibility to health services, there is need for

health facilities within a 5km radius Sixty-two percent (62%) of the Kenyan population meets this norm (Ministry of Devolution and National Planning, 2015).

The infrastructure available has continuously impacted negatively on the care and the retention capability of various significant health staff personnel. Presently, there are 9,630 enrolled and health facilities which are functional. Majority of the said facilities have limited and derelict equipment and are not able to meet the necessary norms and standards. More investments have been directed to health sector by focusing on accessibility of specialized services via the specialized equipment provision (MES)(World Bank, 2014).

The workforce in health sector includes the people employed principally for providing and managing health and related services in the national government as well as private sectors that have definitely and officially training. A satisfactory, industrious and justifiably distributed trained health staff pool that is easily reached is essential for the efficient healthcare delivery (Mwaniki, 2016). Health services availability and comprehensiveness offered at a health facility are crucial in Universal Health Care realization. This though partly needs a strong, effective and well-managed health system, a sufficient well-trained capacity, motivated health staff as well as financing health services system (Oketch, 2016). The WHO suggests 21.7 doctors per 100,000 populations and 228 nurses per 100,000 populations. Kenya had 22 doctors per 100,000 population and only 173 nurses per 100,000 respectively in 2015(Ministry of Health, 2016).

The health sector based on this background have taken the responsibility of defining long-term strategies for dealing with limitations and challenges to development of HR and management in order to efficiently enhance the delivery of health services. Thus, this strategy gives the analytical situation of the human resources presently in the state, the contextual factors as well as various effects, key problems and restraints across the sector. In dealing with such difficulties, the plan suggests interlinked strategies series for remedying the situation as well as enhancing the service delivery quality and efficiency under the government's devolved system (Ministry of Health, 2014).The objectives of the Human Resource Strategy include adequate and equitably distributed health, conducive environment that attracts and retains health workforce, a strategic

responsive institutional framework that supports workforce performance management, strategic responsive HRD systems and practices, adequate financial resources mobilized to support investment in HRH strategic and training and development in order to be aligned with most modern medical technology.

Integrating technology into Kenya's healthcare systems is key to reaching the poorest and most vulnerable people. Technology can pave the way to improvements in data management, training for health workers and making referrals (Waithera, Muhia& Songole, 2017).Due to the continuing spread and evolution of information and communications technology (ICT) in health care and education, ICT should be considered as an essential tool for attaining and sustaining UHC as well as strengthening health-system accountability. Electronic health (e-Health) applications, including e-learning, are flourishing, as a result of recent global advances in ICT such as fibre and wireless technology. Currently, ICT is used in medical education, clinical practice, for Continuous Medical Education (CME), and in developing professional social networks (Wasonga, 2015).

For the last 10 years, the usage of ICT use has assisted in development of new ways of efficient and secure healthcare provision. This has led in a fast increase in the ICT applications use in health care, cooperatively, commonly referred to as e-Health (European Patients Forum, 2017).Primary health care (PHC) system which is strong and supported is the best ways of UHC delivery, making sure each individual, universally may access health services of high quality without being forced into poverty. ICT is a change transformative catalyst; connecting its power for PHC strengthening will need a lot of stakeholders to invest their time, attention and resources (Etienne, 2014).

1.2. Statement of the Problem

It is estimated by WHO that about 150 million people around the world suffer financial catastrophes annually from out of pocket expenditure on health services while about 100 Million are pushed below the poverty line (WHO, 2010). Further according to 2013 Kenya household health expenditure and utilization survey medical expenses account for over 40% of non-food bill in over half of the counties in Kenya. Access to universal

health coverage is anchored on the constitution of Kenya 2010, millennium development goals (MDGs), vision 2030, the president's big 4 agenda as well as legislatively through session paper no 7 2012.In order to ensure the realization of the right to healthcare, the national and county governments have been assigned specific functions and mandates which must effectively and efficiently be executed with the limited resources in an effort to fulfil the constitutional requirement (MoH, 2016).

While access to quality health care is a constitutional right, millions of Kenyans are denied access to quality health care due to various reasons such as affordability, geographical barriers, shortage of health care providers among others (World Bank, 2014) Makueni County remains the only county in the country to have successfully implemented universal health coverage. Through its Makueni care social welfare coverage all enrolled residents are entitled to Ambulance services, outpatient services, inpatient services as well as maternity care. In being a trailblazer, the county has set a good precedent to all other counties and national government who currently are in pilot stage of UHC implementation (Lancet, 2016).

A number of studies revolving around Universal Health Coverage have been conducted both locally and internationally. Oketch (2016) examined Devolution and Universal Health Coverage in Kenya: Situational Analysis of Health Financing, Infrastructure & Personnel. Karanja (2014) studied the Challenges in Provision of Universal Health Care by the National Hospital Insurance Fund, Kenya. Onyango (2016) focused on Response Strategies adopted by the Ministry of Health to Challenges of Devolved Healthcare Services in Kenya.UHC being a relatively new concept in Kenya, this research provides foundation and reference material to build upon and establish further the current issues surrounding UHC. This research, therefore, seeks to assess the influence of elements of Universal Health Coverage Program among Counties in Kenya.

1.3. Objectives of the Study

1.3.1. General Objectives

To assess the elements influencing implementation of Universal Health Coverage implementation among Counties in Kenya

1.3.2. Specific Objectives

The study was based on the following specific objectives;

i. To examine the influence of healthcare infrastructures on the implementation of Universal Health Coverage among Counties in Kenya.
ii. To establish the influence of healthcare human resource capacity on implementation of Universal Health Coverage among Counties in Kenya.
iii. To determine the influence of healthcare funding on the implementation of Universal Health Coverage among Counties in Kenya.
iv. To determine the influence of technology on the implementation of Universal Health Coverage among Counties in Kenya.
v. To determine the moderating effect of government policies and regulations on implementation of universal health coverage.

1.4. Research Questions

The study sought to answer the following research questions:

i. What is the influence of healthcare infrastructure on the implementation of Universal Health Coverage among Counties in Kenya?
ii. How does healthcare human resource capacity influence the implementation of Universal Health Coverage among Counties in Kenya?
iii. What is the influence of healthcare funding on the implementation of Universal Health Coverage among Counties in Kenya?
iv. What is the influence of technology on the implementation of Universal Health Coverage among Counties in Kenya?
v. What moderating effect does the government policies and regulation have on implementation of universal health coverage?

1.5. Significance of the Study

Both National and county governments through the relevant ministries will be able to identify the most critical pillars for the achievement of the overall success of the Universal Health Coverage. The government strategic partners in this program will gain useful insights into the unmet needs with regard to strategy implementation, and thus enable them to develop a strategic management system to meet these needs. The study will further contribute to the body of knowledge by providing empirical evidence that can be used as a useful reference point for other scholars on the factors influencing implementation of universal health Coverage among Counties in Kenya.

1.6. Limitations of the Study

This research only focused on Universal Health Coverage among Counties in Kenya. The main concern of the study was accessibility of the health professionals considering Makueni County is fast in terms of surface area and the different shifts medical workers under which they operate. To overcome this, the researcher coordinated with the hospitals' management to help with the distribution of questionnaires to those that the researcher may not access directly.

CHAPTER TWO
LITERATURE REVIEW

2.1. Introduction

This chapter presents a review of theoretical and empirical literature on the factors influencing the implementation of Universal Health Coverage. The chapter will thereafter present the conceptual framework of the study.

2.2. Theoretical Review

2.2.1. Resource Dependency Theory

This theory founded by Salancik (1978) seeks to explain organizational and inter-organizational behaviour focusing on critical resources which an organization must have in order to survive and function. The resource dependence argument suggests that a given organization will respond to and become dependent on those organizations that control resources which are both critical to its operations and over which it has limited control. Such dependence makes the external constraint and control of organizational behaviour possible as asymmetric exchange and power relations are created between organizations (Hillman, Withers & Collins, 2008).

The resource dependency theory has been used in previous studies. For instance, Maina (2016) on this theory his research on factors influencing the effective implementation of health projects: a case of AMREF health Africa in Kenya. The researcher identified financing (donor funding) as a major determinant in health project implementation. Implementation of Universal Health Coverage at the county levels is highly dependent on the coordinated efforts of the national government, county government, and health insurance agencies among other stakeholders for various resources including funding and appropriate policies in order to meet the desired outcome.

This theory explains organizational and inter-organizational behaviour focusing on critical resources which an organization must have in order to survive and function. This explains key concept on how to control organization resources to effectively ensure that the organization survive and prosper. Universal Health Coverage at the county levels is highly dependent on the coordinated efforts of the national government, county government, and health insurance agencies among other stakeholders for various resources including funding and appropriate policies in order to meet the

desired outcome. This theory therefore is relevant to the study because of its relevant concept on how to control Universal Health Coverage resources to effectively ensure that the project survive and prosper by ensuring effectively coordinating effort from the national government, county government, and health insurance agencies among other stakeholders.

2.2.2. Optimal Resource Allocation Theory

The Optimal Resource Allocation theory was advanced by Laska, Meisner, and Siegel in 1972. It is founded on the fact that tasks having same service times distribution are at risk of collapse if there is no universal allocation of resources. In development of the theory, they noted that the resources are needed in undertaking various tasks through the origin and that that the source is romanticised with the supposition that it possesses the capability of randomly allocating the service resources fractional proportions to one or more of its projects any time (Laska, Meisner& Siegel, 1972). Nevertheless, the source is needed to adopt strategies which make sure that the resource apportionment is conducted in an ideal manner which enhances the completion time as well as chance reduction of the project failure (Gitonga&Keiyoro, 2017).In adoption of this theory, this study notes that for health care projects, effective implementation reliable strategies existence which might improve the optimal resources allocation is a necessity (Keshtkar, Salimifard & Faghih, 2015).

This theory mainly concentrates on resource allocation which is the centre of Universal Health Coverage. This theory relates to the study advancing that without appropriate allocation of resources including financial, staff and equipment, implementation of universal health coverage would be adversely influenced.

2.2.3. Human Capital Theory

The theory of human capital was proposed by Schultz (1961) and advanced by Nobel Prize-winning economist GaryBecker (1964). Human capital theory advocates that education or training informs workers with significant knowledge and skills that leads to their productivity and incomes increase (Becker, 1964). Becker differentiates amongst the definite human capital and common human capital. Specific human capital comprises of the acquired expertise via training as well as education that is specific to a specific company. On the other hand, general human capital is gained knowledge via

education as well as training that is treasured across the board (McCracken, McIvor, Treacy& Wall, 2015).

Various researchers have criticized the human capital theory for being too simplistic in its employee productivity analysis as well as having argued that education only may not lead to productivity of the firm but must be complemented by other variables. Levin and Kelley (1994) points out that economists and other social scientists have overestimated the payoffs from increased education and ignored complementary inputs such as, training, contract terms and management practices that needs to be there for enhancing performance.

This theory provides relevant information on how human capital is important to organization projects, in this case to Universal Health Coverage. This theory also has a close association with this study as it confers with the study's assumption that health staff's education, skill, and training have a significant influence over their service delivery and overall productivity. This directly impacts on the implementation of universal healthcare in the hospitals.

2.2.4. Innovation Diffusion Theory

This theory was advanced by Everett Rogers (1995). The theory sought to describe how, why, and at which rate does new ideas and technology spreads. He noted that diffusion is the procedure through which the innovation is interconnected over time between the contributors in a social system whereas innovation is an idea, practice, or object that is perceived as new by an individual or another unit of adoption (Orr, 2003). Therefore, Innovation diffusion theory argues that potential users make decisions of adopting or rejecting the beliefs founding the innovation which forms about the innovation (Agarwal, 2000).

Innovation, communication channels, time, and social system are the four key components of the diffusion of innovations. It is essential for a wide adoption of innovation so as to sustain themselves. Within the adoption rate, there is a point at which an innovation attains critical mass. The information flows through networks. The networks nature and the roles played by opinion leaders establish the likelihood of adopting the innovation. There is an influence exerted on audience behaviour by leaders

through their personal conduct, however extra mediators known as agents of change as well as gatekeepers are also part of the diffusion process (Orr, 2003).

Innovation increases the effectiveness on any organization. With reference to this study the Universal Health Coverage has to have the technological aspect to increase service quality and effectives in providing health coverage. Research on the diffusion of innovation has been widely applied in disciplines such as education, sociology, communication, agriculture, marketing, and information technology. This study will adopt innovation diffusion theory in the field of health to explain the spreading of the universal health coverage concept from inception to implementation of the idea in Kenya.

2.3 Empirical Review

2.3.1 Funding and Universal Health Coverage Implementation

Healthcare funding/ financing according to WHO refers to a system that is specifically designed to provide all people access to needed health services of sufficient quality and to be effective band to ensure that the use of these services does not expose the user to financial hardship (WHO, 2010). Funding enables the health system to maximize the attainment of goals and objectives. The objectives of funding policy are mainly to promote universal protection against financial risk, equitable distribution of funding burden, promote equitable use and provision of services relative to the need of those services, improve transparency of the system, promote quality in service delivery, and improving efficiency in organizations and delivery of health services (Kutzin, 2013). Countries need to mobilize sufficient resources to provide essential health services for their populations, reduce inequalities in the ability to pay for those services, and provide financial protection against impoverishment from catastrophic health care costs The health sector relies on several sources of funding: public (government), private firms, households and donors (including faith-based organizations and NGOs) as well as health insurance schemes (Nyakundi, 2011).

A study by Addae-Korankye (2013) explored the difficulties facing the funding of the Ghanaian health care based on the National Health Insurance Scheme (NHIS). The study was conducted in Ghanaian health care. The study indicated that lack of sources for funding as well as inadequate premium were among the difficulties facing the funding of the health care delivery singled out by studies in Ghana. The study deduced

that National health insurance needs to be viewed as a key means of eliminating the barrier of funding in a bid of attaining the universal health care accessibility for all the residents. The research recommends an increase in uptake and operative pooling of risk, compulsory membership to NHIS needs to be implemented. Among the mechanisms of funding the study recommends everyone to have a medical savings account.

A research by Muiya and Kamau (2013) attempted to analyse Kenyan universal health care based on chances and barriers for the informal sector workers. The study concentrated on Kenyan universal health care based on chances and barriers for the informal sector worker. The research explored the methods utilised by the by particular governments in a bid of achieving the universal health coverage for their citizens. The study specifically explored the existing opportunities and difficulties that the government of Kenya is facing in registering informal sector workers to health insurance. The informal sector doesn't willingly guarantee accessibility of finances to health care by most of its workers. Majority of informal sector staff are more susceptible to shocks of the economy which leads to catastrophic health expenditure out-of-pocket. Although informal sector worker's health insurance raises their access to the needed services and enhances the protection from financial risk, their health insurance uptake is low. The study found that various nations (German, Singapore, Taiwan, Ghana, and Tanzania) have registered workers in the informal sector to health insurance schemes, an approach that may also be done in Kenya.

According to Odiwuor and Macharia (2014), there are various difficulties facing the health systems as well as the public governance issues among which the main ones include the inadequate operative quality mechanism of assurance as well as ineffectual commercial supremacy and answerability mechanisms that have led to lack of trust in the funding of the Kenyan health institutions. So as to enhance the efficient service delivery in the health sector in Kenya, structures through inter-sectoral collaboration have been developed by the MOH at different levels. Notwithstanding government as well as relevant stakeholder's efforts to enhance the health sector, health services utilization still remains the main barrier. For a significant progress in achieving the Universal Health Coverage (UHC), all areas need to be addressed.

A research was done by Mosquera (2014) which tried to examine the difficulties facing the execution of the Primary Health Care (PHC) strategy in the market-oriented health

care system context in Bangota. The aim of this study was to single out the enablers as well as challenges facing the implementation of PHC in Bogota. The study found that the major barriers were the inadequate stable funds source, the guidelines which are unclear and rigid, the high human resources turnover, the incompetent health workers as well as lack of participation of the institutions outside the sector of health in producing inter-sectoral responses and promotion of the participation of the community. It was concluded by the study that interventions need to be planned to determine the existing and stable PHC strategy financial resources.

A survey by Odiwuor and Macharia (2014) examined the factors that influence the health services utilization in Homa Bay County, Kenya. Survey design was employed in this study and targeted the health beneficiaries, District Health Management Team as well as other main health stakeholders. The study used both quantitative and qualitative data. It was revealed by the study that health funding, delivery of services, quality, approachability and equity influence the health services utilization in Homa Bay County. For these reasons the study recommended that government needs to adequately allocate funds for the efficient delivery of health services, recruit competent health staff as well as enhancement of the health facilities infrastructure, drugs and other supplies.

A study by Oketch and Lelegwe (2015) conducted an analysis to critically review the various initiatives that the government of Kenya has over the years initiated towards the realization of Universal Health Coverage (UHC) and how this has impacted on health equity. The main results of the study included UHC commitment; health care financing minimal solidarity; health care system dis-functionality cases; lack of continuous medical training opportunities; concerns in the drugs and other medical supplies stock-outs quality, decrepit health organisation and the less health staff. Other results included issues of leadership in NHIF attributed to high costs of operations, low duty, facility levels fraud, reduced ratio of pay-out, facilities accreditation, and benefits package narrowness and many others. It was recommended by the study that solidarity promotion in funding of health care which can be relied upon and economical; political leaders needs to improve their commitment in devolving the health sector, various stakeholders participation, engaging both county and national government in fast-tracking the Health Act enactment; investing in the infrastructure of health as well as

human resources training; NHIF revamping into a social health insurance scheme which is full-fledged, and improving the human resources capacity of NHIF, improving the awareness amongst members, improved package of benefits among others.

A study by Otieno (2016) sought to evaluate the process of resource allocation to the health sector in Baringo County and its implication to equity. The target population for this study included county/sub-county health department administrators, finance department administrators, and health care providers. The findings indicated that the average utilization rate of the health services in Baringo county was 1.30 per capita/year which was below the national average rate of 3.1 per capita/year; public finance act of 2012 was followed in the budget-making process but there was no criteria or formula for financial resource allocation; there was skewed distribution of the human resources with some sub-counties being favoured and finally there was evidence of political interference with the distribution of the health resources. The study recommended immediate redistribution of the available health resources as a short-term measure while formulating and using a need-based resources allocation formula as a medium-term and a long-term measure.

Based on all the studies and research reviewed financing and financing policy plays a critical role in ensuring both access, equitable and quality healthcare services. It also guarantees the sustainability of the strategy adopted. Further research for the financing of UHC and its implementation among Counties in Kenya is important as proposed by (Koon, 2017) in a study that suggested that financing attracts a lot of politics in Kenya.

2.3.2 Infrastructure and Universal Health Coverage Implementation

For realization of UHC, there is a need for a strong, efficient, well-run health system. This in turn needs a vigorous infrastructure in the health sector in terms of physical infrastructure, medical equipment, communication and ICT as well as transportation. The availability of adequate infrastructure has an impact on the care as well as the ability to retain some key health personnel.

A research by Essendi, Johnson and Madise (2015) examined how members of the community and their health providers identify the challenges facing accessibility and provision of the necessary maternity as well as care services for the infants, the coping ways employed by providers together with service users and their influence on health

care quality in rural communities in Eastern Kenya. The study used the collected qualitative data using interview guides as well as Focus Group Discussions (FGDs). It was revealed by the study that society views some challenges, majority being infrastructural, including water and electricity lack and undeveloped roads which affect the necessary life-saving maternal and new-born care services provision and accessibility in the two sub-locations. The study established a need for enhancing the health facilities serving rural communities as well as infrastructure strengthening with the purpose of increasing the accessibility of basic routine and emergency obstetric and care services for infants.

Another study by Kamau, Osuga and Njuguna (2017) examined the effect of infrastructure, health care workers capacity, information systems of health and financial resources on the health care referral system implementation. The study adopted the cross-sectional research design and targeted health care staff in Kiambu County public health care facilities and 271 respondents participated in the study. The study found that the implementation of Kiambu County health care referral system faces various challenges like in infrastructure, health information systems, health care staff capacity and financial resources and recommended improvement of infrastructure, implementation a standard referral system monitoring toolkit and provision of adequate funds for implementation monitoring and evaluation. Like other unindustrialized nation in Africa. Kenya has been experiencing high infant mortality and avoidable diseases among communities. Insufficiency in accessibility to basic health services is disturbing distinct regions, areas, communities, and social groups in these nations.

Kaibung *et al.*, (2017) carried out research to establish the extent to which poor infrastructure affects healthcare service delivery in Tiaty sub-County. The target population of the study was the employees and patients who visit the healthcare institutions in Tiaty sub-County. The study concluded that road networks, power coverage, healthcare facilities, and water and telecommunication, positively affect the healthcare service delivery in Tiaty sub-County. The study recommended that the government ensure the construction of roads in every sub-county in the country to increase the road networks and promote the distribution of power. The studies above established that poor infrastructure is an imminent threat towards quality, affordable and equitable distribution of healthcare. Stable power supply, proper health facilities,

and appropriate communication equipment are among the infrastructural shortages reported in the health facilities studied.

2.3.3 Human Resource Capacity and Universal Health Coverage Implementation

The health interventions delivery needs skilled and sufficiently reinforced health staff (Scheffler, Bruckner& Spetz, 2012). According to (WHO, 2010), Health workers are those people engaged in actions whose primary intent is to protect and improve health and consist of broadly health service providers and health management and support workers. The health providers like clinical officers, doctors, pharmacists, nurses, etc.) to technicians of the laboratory, management staff as well as other support staff like cleaners, medical records officers, health economists who don't give any service directly to the patients but are vet significant in functioning of the health system. In addition, WHO made it clear that there exists a strong coloration amongst the density of the health staff and coverage of the services as well as its results. The HRH significance is founded on the premise that health services delivery is supported by strong correlation evidence between the HRH density and quality in the nation as well as results of population health (KPMG Africa, 2014).

WHO (2016) conducted a study on the effect of strategies on human resource for health. The study was conducted in Nigeria. The study identified that strategies such as UHC, ending HIV and malaria, and reduction of maternal mortality rate will remain just an aspiration unless accompanied by strategies involving transformational efforts on health workers. Globally investment in health workers is lower than it's often assumed. There is chronic under-investment in education and training of health workers and a mismatch between the training and the strategies in relation to health systems and populations needs which continue to cause shortages in some countries (Hanandez, 2013).

According to Nzuve and Mwaura (2012) research on HR in faith-based hospitals in Kenya, the results shows that in a bid of addressing the health staff gaps and the current shortages in staff in the health sector, it is essential for deliberate focus on the sound HR practices as medical staff are significant in saving lives. With no appropriate HR planning, the system of the health care will depreciate and this might lead great losses to the economy of Kenyan as health care quality is a crucial objective in the Kenya

Vision 2030, MDGs and other priorities of the nation. Therefore, the study suggested the necessity of continuous to improve HR planning practices.

The study by Kumar and Khan (2013) purposed to understand the various restrictions as well as challenges of HRM in the public health sector. The study used descriptive study in assessing the opinions of the Mission Director-NRHM, Directors Health Services, Director Family Welfare, Chief District Medical Officers (CDMO) and primary health care (PHC). The study found that present central civil services rules, methods of recruitment, system of appraisal, reward and punishment, etc. are not sufficient in handling the issues of management linked to the HR. Management of the human resource needs imperative attention of the policy makers helping the firm culture for potentials of the HR optimal use. The adoption of good human resource management practices motivates health staff in delivering efficient health care. The study recommended a differential human resource policy for managing the discontentment challenges and low regular and contractual staff's motivation.

Akacho (2014) explored the factors affecting the healthcare service delivery provision in Kenya based on a case of UasinGishu District Hospital in Eldoret. The quality healthcare availability of to the public unswervingly assists in bettering lives better in future by increasing their productivity in the society, it as well minimises the people number who die on daily basis as a result of the poor healthcare in public hospitals provision for all the citizens including adults and adults in the public maternity wards. Healthcare provision in public hospitals is attained through the enough staff availability, resources and facilities of the hospitals as well as good process of communication which facilitates the hospital to run efficiently. It was revealed that inadequate personnel were a key challenge facing hospitals as there are less staffs in comparison to the patient's number, resulting to staff overloads as they struggle to serve the present patients. It is recommended in this study that there is a need for adequate health personnel who are competent to serve the patient. This may be adequately attended to by Ministry of Health by putting more emphasis on the people being employed and reduce corruption incidences in recruitment.

A research by Mutua, Kinyili and Arasa (2017) explored how performance of employees on selected hospitals in Machakos Town is influenced by manpower planning, recruitment and selection, training and development and reward and

compensation. Mixed research design was adopted in this study. The study targeted the employees grouped in 5 strata all level of management from top to low. It was asserted by the study that there is a significant positive relationship between the manpower planning recruitment and selection, training and development, reward and compensation and performance of the employees. It was recommended by the study that the hospital management needs to integrate planning of manpower and conduct activities of training and mentoring for their staff as well as rewarding them for better performance.

A study by Zaberio (2017) explored factors influencing the healthcare projects execution in Meru County, Kenya. Descriptive survey research design was adopted in this study which targeted 703 respondents. The study found that communities' collaboration, human resources distribution, funding and knowledge affected the health care projects execution under county government of Meru County, Kenya. Based on the study results the study suggested that Kenya's Health Policy 2014–2030 enforcement on the human resources distribution for public health facilities health, the county government needs to adopt an operational mobilization strategy for the stakeholders which will assist in building operational partnerships with other players in the health sector such as r like NGOs. For health systems to function, they depend on health workers, thus for improved health services coverage and realizing the right to highest attainable standard for health as per WHO recommendations it is dependent on the availability, acceptability and health workers. (Global healthworkers alliance, 2014). Availability alone is not sufficient but it's when those workers possess the right skills and competence, they are equitably distributed, are accessible to the population and are motivated and empowered that their impact can be significant in improving service delivery.

2.3.4 Technology and Universal Health Coverage Implementation

Modern healthcare heavily depends on every health technologies range which is required to be effective, harmless, cost-efficient as well as accessible to everyone with no cause of financial liability to the health care systems which may lead to them being unfeasible or unmaintainable. There is usual waste of resources on health technologies investments which don't meet priority needs or are incompatible with the current infrastructure and services, or too expensive to sustain. This waste might weaken the health services as a whole by exhausting off funds required for other indispensable

inputs of the system. The resources might also be wasted as a result of mismanagement which leads to irrational or incorrect technologies use, shortages in staff, training inadequately, or consumables lack, spare parts or maintenance plans (Nagel & Nagel, 2009).

A study by Wasonga (2015) investigated the relationship between ICT and the performance of the health care projects. The study found that inadequate ICT infrastructure in the organization hinders service delivery to the healthcare subscribers and that inadequate ICT infrastructure among the subscribers hinders their access to the healthcare services. Other challenges included: lack of technical know-how, ineffective government policies and limited allocation of funds. The findings from the regression analysis revealed that the use of electronic health records, telemedicine, health information systems, the internet and mobile health influences the performance of healthcare projects.

A study by Omondi (2016) analysed factors influencing service delivery in public hospitals. The researcher asked respondents whether they agree that the ICT application increased the efficiency of health care delivery, 29% (majority) of the respondents strongly agreed while only 12% strongly disagreed with benefits of ICT in their facilities. The study further enquired on the Departments in the hospitals using ICT applications and tools, 81% believed that billing and payment services were most utilizers of ICT, followed by pharmacy and management at 6.5% each while treatment accounted for the least users of ICT services in these facilities. This shows that the uptake of ICT services in these hospitals is still very low, reducing efficiency and productivity of the hospitals.

A research by Musyoka, Ochieng and Nzioki (2016) sought to investigate factors affecting the provision of quality service in the public health sector in Kenya with specific reference to Nyahururu District Hospital. The study used the target population of 129 respondents who included Doctors, Nurses, Clinical Officers, Lab Technologists, and Pharmacists. Based on the study results, the study deduce that public health sectors need to enhance the technology adoption level and readiness of investing and advancing the modern technology so as to enable assessment of the services, enhancing the process and communication that is necessary for efficient quality service in public health sector in Kenya. Utilizing more than one means of communication to

notify, encourage and instruct the client is also compulsory. From the conclusion the study suggested that efficient recruitment needs to be adopted to enhance doctors and staff monitoring, achieving goals as well as practicing standards improves the service quality provision.

A study by Waithera, Muhia and Songole (2017) assessed the impact of Electronic Medical Records (EMR) on healthcare delivery in Kisii Teaching and Referral Hospital (KTRH). The findings showed that EMR systems resulted to healthcare delivery productivity increase, better clinical decisions making as well as association among providers of healthcare. The main barriers, a funding shortage for the adoption and EMR systems utilization, staff computer illiteracy as well as ICT staff shortage in the facility. The health care delivery system in KTRH have been greatly impacted by EMR systems by increasing collaboration between personnel, increased the health care providers productivity leading to satisfaction of both patient and provider. From the previous researches reviewed in the literature review, healthcare technology have a significant impact on the productivity of healthcare delivery as it improves healthcare assessment, patient monitoring and efficient communication and collaboration between healthcare providers. Some of the major challenges observed against the utilization of technology in healthcare delivery include a shortage of funding, lack of technology-literate staff and ineffective government policies.

2.4 Research Gap

This research study was informed by studies carried out by Kamau et al., (2017) on the influence of infrastructure, capacity of health care workers, health information systems and financial resources on implementation of health care referral system, Omondi (2016) on factors influencing service delivery in public hospitals, Wasonga (2015) on the relationship between ICT and performance of the health care projects, Mutua, Kinyili and Arasa (2017) on the influence of manpower planning, recruitment and selection, training and development and reward and compensation on the performance of employee on selected hospitals in Machakos Town and Otieno (2016) on the process of resource allocation to the health sector in Baringo County and its implication to equity. From the reviewed empirical literature, it is evident that factors affecting implementation of healthcare delivery are multifaceted. However, the studies has not effectively explained the determinants of Universal Health Coverage implementation in Kenya with a specific interest in Makueni County with the only one identified done by Wanjiri (2014) on challenges in the provision of universal health care by the National Hospital Insurance Fund, which only focused on the funding of the programme. Further, no known study has been conducted on the implementation of Universal Health Coverage with a focus on Makueni County. The studies have also been conducted in different institution with different case study, Hence the need to carry out this study to explore the Elements Influencing Implementation Of Universal Health Coverage Among Counties in Kenya with a specific interest in Makueni County.

Table 2.1: Research Gap

Author	Objective	Conceptual Gap	Contextual Gap
Funding and Universal Health Coverage Implementation			
Addae-Korankye (2013)	To examine challenges of financing health care in Ghana: the case of the National Health Insurance Scheme (NHIS).	Unlike Addae-Korankye (2013), this study has specific interest in UHC	Research was done in Ghana, this study will be conducted in Kenya
Muiya and Kamau (2013)	To analyze universal health care in Kenya focusing on opportunities and challenges for the informal sector workers	The researcher focused on opportunities and challenges of UHC while this study is interested in strategy implementation	The researcher conducted a broad study in the whole country. This research has particular interest in Makueni County
Mosquera (2014)	To assess the challenges of implementing a Primary Health Care (PHC) strategy in the context of a market-oriented health care system in Bangota	The research studied Primary Health Care (PHC) while this study is focusing on UHC	Research was done in Bangota, this study will be conducted in Kenya
Odiwuor and Macharia (2014)	To investigate factors that influence the utilization of health services in Homa Bay County, Kenya	The research studied utilization of health services while this study is focusing on UHC	Research was done in Homa Bay County. This research has particular interest in Makueni County
Oketch and Lelegwe (2015)	To critically review the various initiatives that the government of Kenya has over the years initiated towards the realization of Universal Health Coverage (UHC)	The researcher focused on financing aspect while this study will look at four perspectives; finances, human resource, infrastructure and technology	The researcher conducted a broad study in the whole country. This research has particular interest in Makueni County
Otieno (2016)	To evaluate the process of resource allocation to the health sector in Baringo	The researcher focused on resource allocation aspect	Research was done in Baringo, County. This research has

	County and its implication to equity	while this study will look at four perspectives; finances, human resource, infrastructure and technology	particular interest in Makueni County
Infrastructure and Universal Health Coverage Implementation			
Essendi, Johnson and Madise (2015)	To explore how community members and their health providers perceive the challenges faced in accessing and providing essential maternal and newborn care services,	The research studied maternity services while this study is focusing on UHC	Study was conducted in Eastern Kenya, this study will be done in Makueni County
Kaibung, Mavole, and Okuku (2017)	To establish the extent to which poor infrastructure affects healthcare service delivery in Baringo County	The researcher focused on infrastructure aspect while this study will look at four perspectives of UHC; finances, human resource, infrastructure and technology	Research was done in Baringo, County. This research has particular interest in Makueni County
Kamau, Osuga, and Njuguna (2017)	To investigate the influence of infrastructure, the capacity of health care workers, health information systems and financial resources on the implementation of health care referral system	The researcher was interested in health care referral system while this study is focusing on UHC	Research was done in Kiambu, County. This research has particular interest in Makueni County
Kaibung *et al.*, (2017)	To establish the extent to which poor infrastructure affects healthcare service delivery in Tiaty sub-County	The researcher focused on infrastructure and not UHC	Research was done in Tiaty sub-County. This research has particular

			interest in Makueni County
Human Resource Capacity and Universal Health Coverage Implementation			
Nzuve&Mwarey (2012)	Human resource planning in faith-based hospitals in Kenya.	The concept under study was human resource planning while this research will focus on UHC	The research was carried out on faith-based hospitals while this study will focus on public hospitals in Makueni County
Kumar and Khan (2013)	To understand the various constraints and difficulties of human resource management (HRM) in the public health sector	The concept under study was human resource management (HRM) while this research will focus on UHC	This study will be conducted in Makueni County
Akacho (2014)	To examine the factors that influence the provision of healthcare service delivery in Kenya a case of UasinGishu District Hospital in Eldoret	The researcher was interested in Healthcare Service Delivery as a whole. This research focuses on UHC	The research was carried in Gishu District Hospital in Eldoret, this study will take place in Makueni County
Mutua, Kinyili and Arasa (2017)	To explore the influence of manpower planning, recruitment and selection, training and development and reward and compensation on the performance of employees on selected hospitals in Machakos Town.	The researcher focused on human resource aspect while this study will look at four perspectives of UHC; finances, human resource, infrastructure and technology	The research was carried in Machakos Town, this study will take place in Makueni County
Zaberio (2017)	To examine the factors influencing the implementation of healthcare projects: the case of Meru County, Kenya	The research focused on the implementation of healthcare projects while this will focus on UHC	The research was carried in Meru County, this study will take place in Makueni County
Technology and Implementation of Universal Health Coverage Implementation			
Wasonga (2015)	To investigate the relationship between ICT and the	The researcher focused on ICT, this study will	This study will be conducted in Makueni County

	performance of the health care projects	examine UHC as a whole	
Omondi (2016)	To evaluate factors influencing service delivery in public hospitals.	The research focused service delivery while this will focus on UHC	This study will be conducted in Makueni County
Musyoka, Ochieng and Nzioki (2016)	To investigate factors affecting the provision of quality service in the public health sector in Kenya with specific reference to Nyahururu District Hospital	The research focused provision of quality service in the public health sector while this will focus on UHC in devolved units	The researcher carried out the study in Nyahururu District Hospital. This study will be conducted in Makueni County
Waithera, Muhia and Songole (2017)	To assess the impact of Electronic Medical Records (EMR) on healthcare delivery in Kisii Teaching and Referral Hospital (KTRH).	The concept under study Electronic Medical Records (EMR) while this research will focus on UHC	The researcher carried out the study in Kisii Teaching and Referral Hospital (KTRH). This study will be conducted in Makueni County

Source: Author (2019)

2.5 Conceptual Framework

A conceptual framework represents a group of concepts systematically organized to act as a tool for the integration and interpretation of information. The conceptual framework below illustrates the relationship between the determinants and Universal Health Coverage implementation among Counties in Kenya.

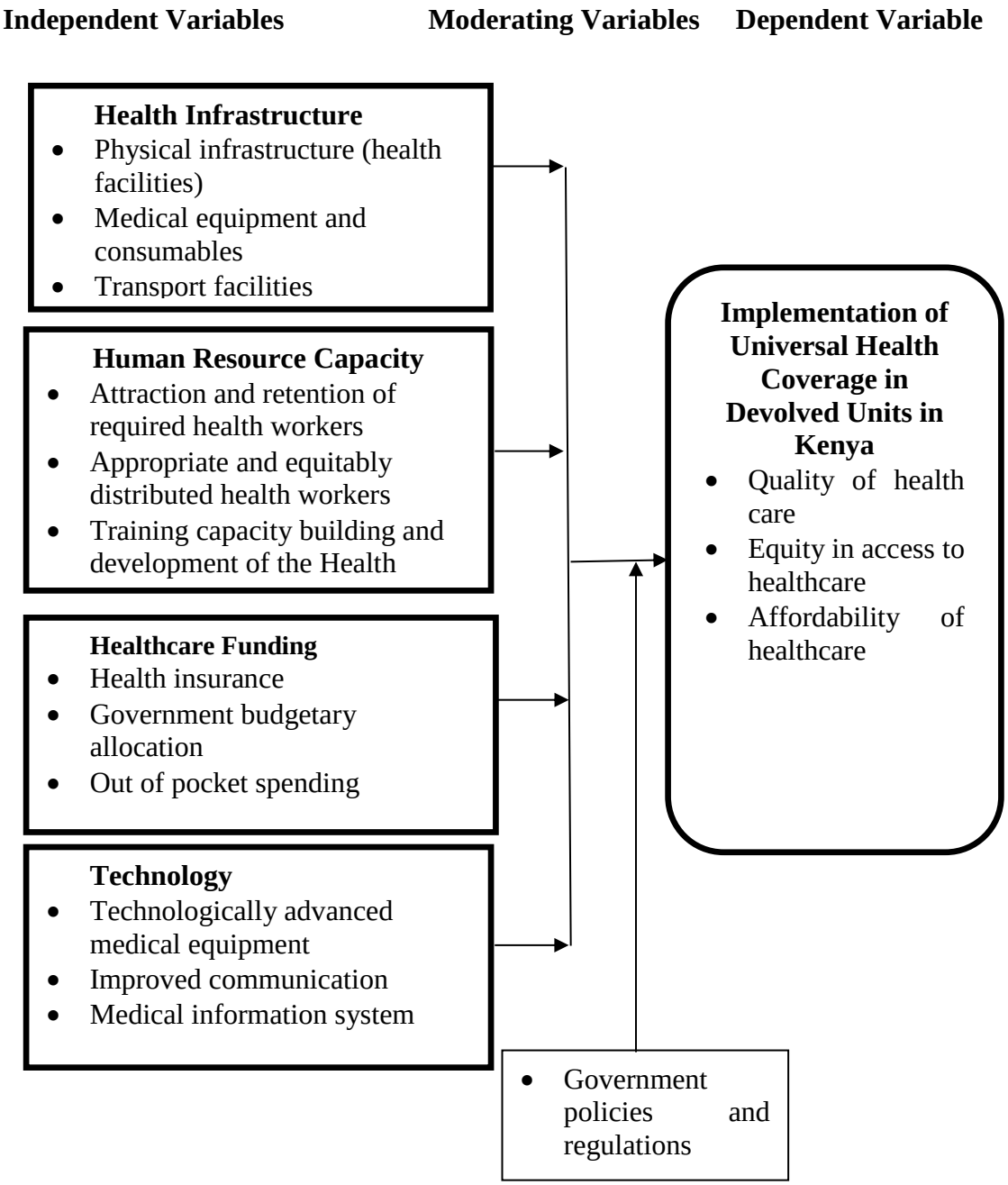


Figure 2.1: Conceptual Framework

Source: Author (2019)

2.6 Chapter Summary

The chapter focused on the views of other scholars on the factors that affect health care service delivery. The chapter looked at the effect of infrastructure, technology, human resource capacity and healthcare financing on healthcare delivery.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methodology to be adopted by, to study the determinants of UHC among Counties in Kenya. It also defines the target population, sampling techniques and sample size, data collection instruments and how the data was analyzed.

3.2 Research Design

The research design was typically concerned with producing a plan that guides the research process. This study adopts the descriptive research design. This design describes a phenomenon and its characteristics. It is appropriate for this particular research because it enables the researcher to answer the questions who, what, when, where and sometimes, how (Wilson, 2010).

3.3 Target Population

This is the specific population that possesses the desired characteristics and from which information was collected to understand a phenomenon (Nagel & Nagel, 2009). The target population for this research was the healthcare workers among Counties in Kenya with interest in healthcare workers practicing in health facilities in Makueni County. The study population was 291 health care workers consisting of specialist doctors, medical officers, nurses and clinical officers in county and sub-county hospitals in Makueni County.

Table 3.1: Target Population

Facility	Number of Specialist Doctors	Number of Medical Officers	Number of Nurses	Number of Clinical Officers	Total
Makueni County Referral Hospital	4	8	75	18	**105**
Mbooni District Hospital	0	1	16	7	**24**
Matiliku District Hospital	0	2	9	2	**13**
Sultan Hamud Sub-county Hospital	0	1	9	3	**13**
Kisau Sub-District Hospital	0	0	3	1	**4**
Kilungu Sub-District Hospital	0	0	7	2	**9**
Kibwezi Sub-District Hospital	0	2	13	14	**29**
Tawa Sub-District Hospital	0	1	7	2	**10**
Makindu Sub-District Hospital	3	7	62	12	**84**
Total	**7**	**22**	**201**	**61**	**291**

Source: Makueni County

3.4 Sampling Procedure and Sample Size

A sample is a representative of a population parameter which can take care of all salient features of the population, that is, all parts of the population were represented. Sampling, therefore, involves the selection of a number of study units from a define study population (Mugenda&Mugenda, 1999). This study used census technique taking into consideration responses of the entire population consisting of Medical doctors, administrators, nurses and clinical officers.

3.5 Data Collection Instruments

Data collection is the process of gathering evidence in order to gain new insights about a phenomenon and answer the question that necessitated the study (Kothari, 2004). The study used primary data to achieve the objective of the research. Primary data was collected using research questionnaires administered in a drop and pick method to give respondents sufficient time to deliberate on the questions. The questionnaires were administered to county healthcare workers in Makueni County in all levels including management and health professionals.

3.6 Data Analysis

Data collected was reviewed for accuracy, completeness and consistency before further analysis.

3.6.1 Qualitative Data Analysis

Qualitative data refers to non-numeric information such as interview transcripts, notes, video and audio recordings, images and text documents (Sunday, 2014). The primary data was categorized and coded based on themes. The qualitative data were analysed using content analysis. According to Kothari (2004), content analysis is efficient in analyzing content analysis.

3.6.2 Quantitative Data Analysis

The captured data from the quantitative research was arranged systematically for easy analysis and subjected to SPSS Version 25.0for. Tables and charts were used as appropriate to present the findings. The study carried out was a descriptive analysis to measure the effects of the independent variables on the dependent variables. Frequencies and percentage were applied for the quantitative variables (Kothari, 2004). Regression analysis was used to measure the relationship between the independent and dependent variables.

The models to be adopted by the study were;

$$UHC = \alpha+\beta_1 F+\beta_2 I+\beta_3 HR+\beta_4 T+\beta_5 MD+\varepsilon$$

Where:

UHC	=	Universal Health Coverage Implementation
α	=	Constant
$\beta_1, \beta_2, \beta_3, \beta_4$	=	Beta Coefficients
F	=	Funding
I	=	Infrastructure
HR	=	Human Resource
T	=	Technology
MD	=	Government Policies and Regulations

Moderating variable was measured using Kothari (2004) model of measuring the effect of moderating variable. From the model this can be done in two major steps. The first step is conducting the effect regression analysis without the moderating variable. There after combining the variable to once variable and regress with government policy. The model was as follows

$$UHC = \alpha+\beta_1 F+\beta_2 I+\beta_3 HR+\beta_4 T+\varepsilon \quad \text{..... (i)}$$

$$UHC = \alpha+\beta_1 UH+ +\beta 5MD+\varepsilon \text{.....(ii)}$$

Where: UH = element of Universal Health Coverage Implementation

MD= Government Policies

3.7 Validity and Reliability

Validity is the degree to which any measurement approach or instrument succeeds in explaining or enumerating what it is intended to measure while reliability is the degree to which a measurement technique can be depended upon to secure consistent results upon repeated application (Weiner, 2007). A pilot test was conducted to improve the questionnaires' reliability as a primary tool for collection of data for study purposes. The analysis of reliability was done by use of 29 administered questionnaires to the hospital staff selected randomly and who won't be allowed to participate in the final study. Testing the questionnaire reliability was done by use of Cronbach's alpha. The appropriate coefficient for testing the reliability is set at above 0.7 where any variable with an alpha above 0.7 was deemed reliable. . The study was tested by both face validity and content validity with the aid of the specialist supervisor to come up with valid research instrument and research questions.

Research instrument reliability coefficient was measured by use of Cronbach's alpha (α).

3.8 Ethical Considerations

Research ethics are the norms or standards that govern the standards of conduct for scientific researchers. Participation in this research was strictly voluntary and the subjects were allowed to stop cooperating at any point of the study. This research adhered to timely and honest communication with the respondents at all times. The researcher respected all participants' rights to privacy as well as to the people and organizations that were included in the information you collected. Information gathered through questionnaire and other data collection instruments was stored with utmost confidentiality with the information not being shared with any unauthorized parties. The information was not falsified or fabricated in any way to meet to manipulate the results to expectations of the researcher.

CHAPTER FOUR
DATA ANALYSIS, INTERPRETATION AND PRESENTATION

4.1 Introduction

The general objective of the study was to assess the elements influencing implementation of Universal Health Coverage implementation among Counties in Kenya.The study was based on the following specific objectives; To determine the influence of funding on the implementation of Universal Health Coverage among Counties in Kenya; To examine the influence of infrastructure on the implementation of Universal Health Coverage among Counties in Kenya; To determine the influence of technology on the implementation of Universal Health Coverage among Counties in Kenya; To establish the influence of human resource capacity on implementation of Universal Health Coverage among Counties in Kenya; To determine the moderating effect of government policies and regulations on implementation of universal health coverage.

The study had a sample size of 291 respondents to whom questionnaires were administered to and the outcomes are as indicated on Table 4.1 below.

Table 4.1: Response rate

Response	
Questionnaire administered	291
Questionnaire returned	250
Response rate (%)	**85.9%**

Source: Author (2019)

As indicated in Table 4.1 above, only 250 of the respondents returned the questionnaires duly filled in contributing to a response rate of 85.9%. This response rate was sufficient and representative and conforms to Mugenda&Mugenda, 1999stipulation that; a response rate of 50% is adequate; 60% is good while 70% and above, is excellent for analysis and statistical reporting.

The researcher carried out a reliability test by use of pilot test to test whether the study variables were reliable and consistent. A Cronbach alpha was computed to measure the reliability and consistent of the research instruments. Shown below are the findings in Table.

Table 4.2: Reliability Test

Variables	Number of Items	Cronbach Alpha
Funding	12	0.789
Infrastructure	10	0.733
Human Resource Capacity	9	0.816
Technology	9	0.709

Source: Author (2019)

The findings show that Funding had a Cronbach alpha of 0.789, Infrastructures had a Cronbach alpha of 0.733, and Human Resource capacity indicated 0.816and Technology had a Cronbach alpha of 0.709. The findings show that all of the variables had a Cronbach alpha of 0.7 and above which shows that the variables were consistent and reliable for further studies.

4.2 Descriptive Statistics of the Background Information

The first part of the analysis was concerned with the descriptive analysis/statistics of the background information. This was mainly to ascertain the suitability of the respondents in participating in this study.

4.2.1Age Distribution of the Respondents

The age was also investigated and the finding is as shown in Figure 4.1 below.

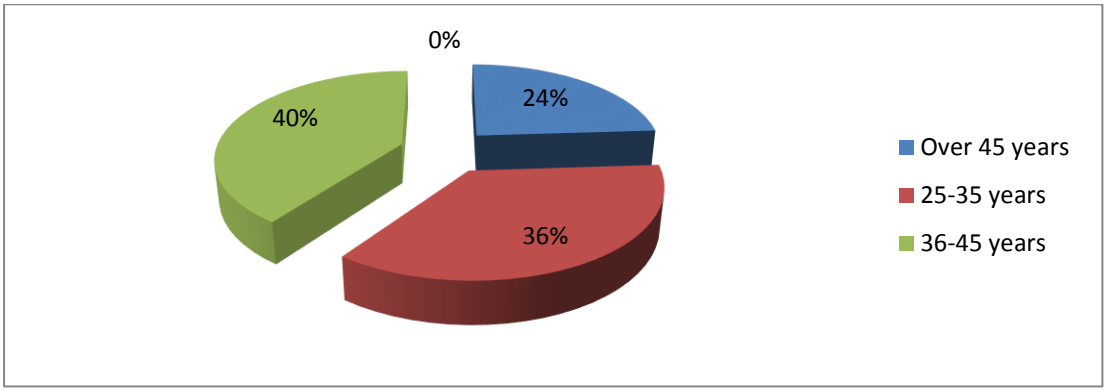


Figure 4.1: Age Distribution of the Respondents

Source: Author (2019)

The study established that,100 (40%) of the respondents ranged between 36-45 years, 90(36%) were aged between 25-35 years, while 60 (24%) were aged over 45 years. This depicts that majority of the respondents interviewed were aged between 25 to 45 years, and therefore the health sector labour-force is youthful and energetic in therefore easily integrated with new trend of UHC innovations. It further illustrates their high appreciation of the benefits of UHC and its key drivers in Kenya.

4.2.2 Gender distribution of respondents

The respondents' gender was to be established and the findings are as shown in Figure 4.2 below.

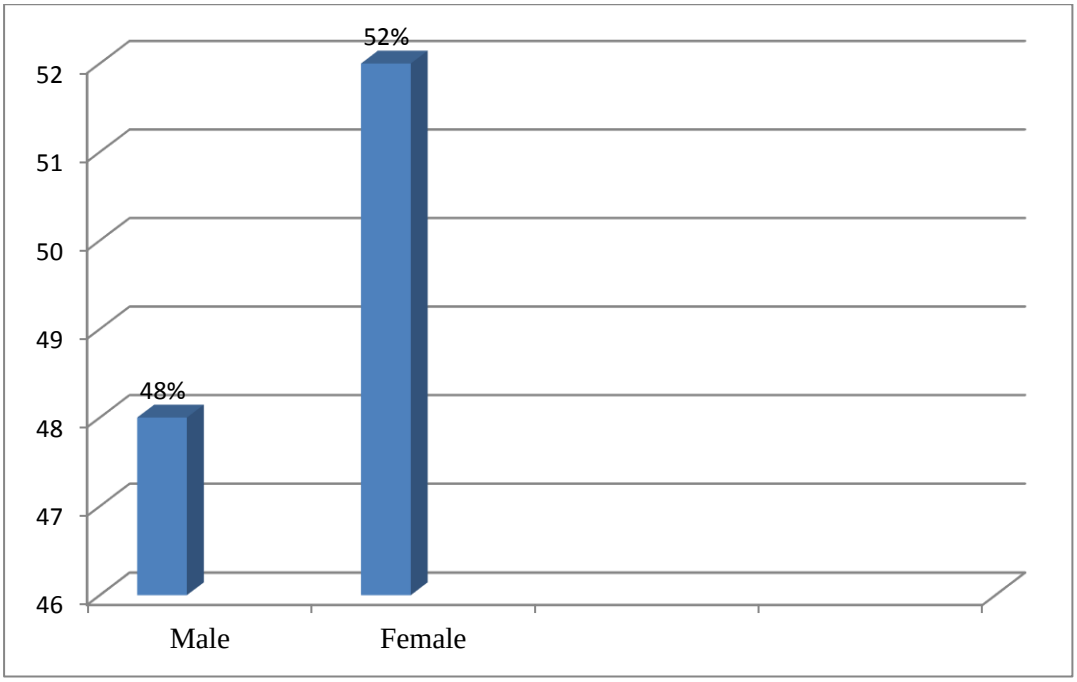


Figure 4.2: Gender distribution of respondents

Source: Author (2019)

From the findings, majority 130 (52%) of the respondents were female while 120 (48%) were male. This implied that the labour force of the health sector in Kenya is relatively similar in terms of gender representation and consequently the information collected was balanced in terms of gender balance.

4.2.3 Employment Position

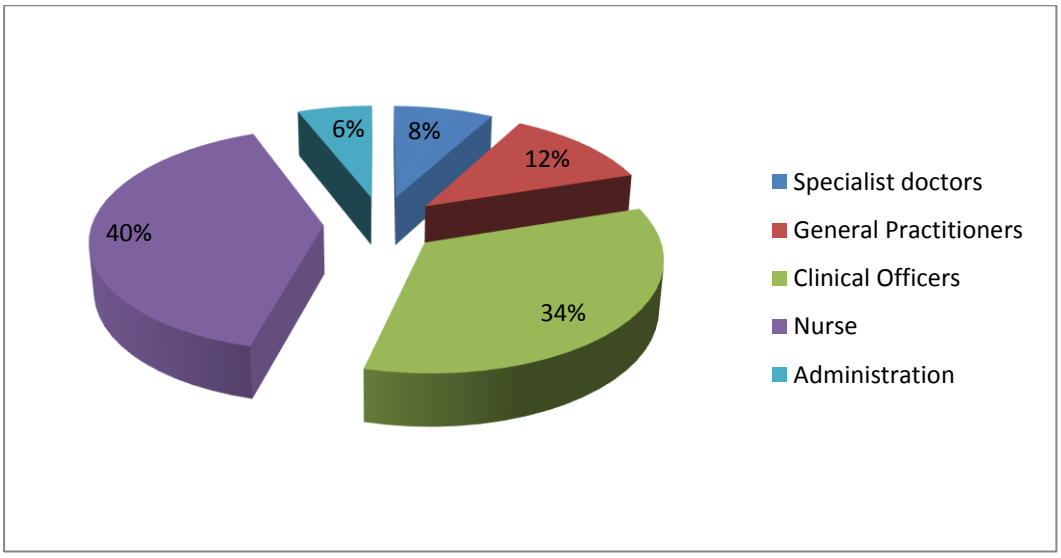


Figure 4.3: Employment Position

Source: Author (2019)

On the respondents' designation, 100 (40%) were nurses, 75 (34%) were clinical officers, 30 (12%) were General Practitioner, and 20 (8%) were Specialist doctors while 15 (6%) were administration officers. This reflects that Makueni County had diverse employees with diverse competences that made the implementation of UHC a reality and largely successful.

4.2.4 Years of experience

The study sought to establish the years of work experience of the respondents.

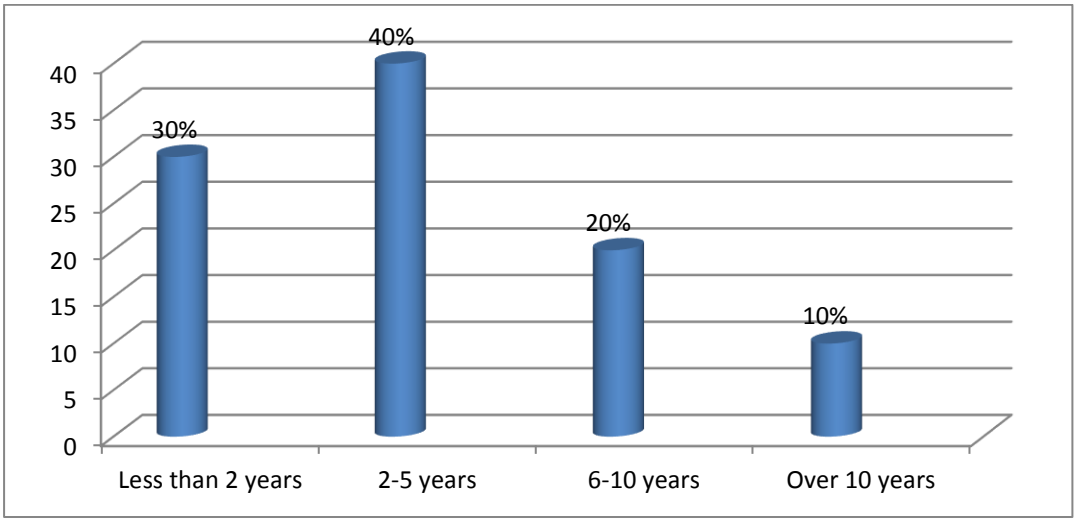


Figure 4.4: Years of experience

Source: Author (2019)

The study established that 100 (40%) of the respondents had worked for 1-5 years, 75 (30%) for less than one year, 50 (20%) for 6-10 years while 25 (10%) had worked for over 10 years. This implies that most of the health care workers had a work experience of between 1-5 years which was long enough to give reliable data on elements influencing implementation of Universal Health Coverage implementation having been employed within the period which healthcare was devolved. It further indicates majority of the workers were employed while the healthcare was devolved indicating that the workers can easily fuse with the strategy as that would be the only thing they know as opposed to those who were employed before the devolution hence might resist change or take long to adapt.

4.2.5 Highest level of education

The research sought to determine the highest level of education and the results are as tabulated in the Figure 4.5 below.

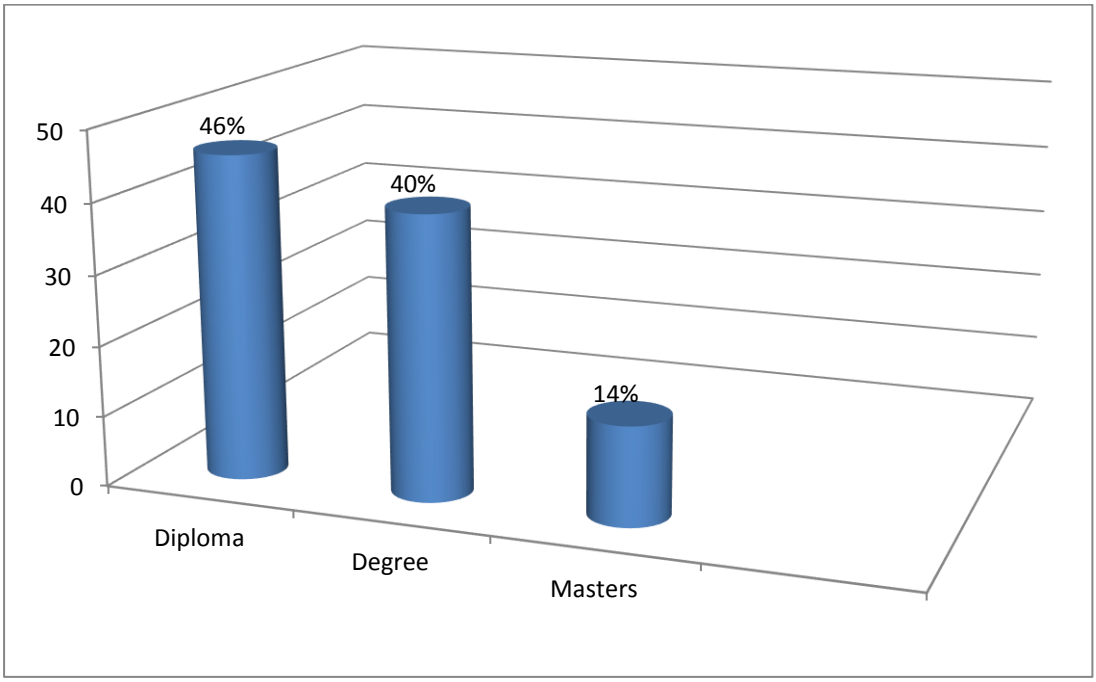


Figure 4.5: Highest level of education

Source: Author (2019)

From the findings, the most of the respondents 115 (46%) had a diploma and degree 100 (40%) as their highest level of education respectively. Only 35 (14%) had master degree. There was none with higher qualification that master degree and this could be a clear reflection of situation on the ground as this is a rural county which may not

attract very highly qualified personnel who prefer working in Nairobi. This also raises the need for equitable distribution of healthcare workers. However, going by the cadres of respondent it is indication that most of the respondents were well trained in their careers hence better understanding on elements influencing implementation of Universal Health Coverage implementation. From the findings most of the respondents were having between diplomas to masters. Therefore, the study identified that the respondents were diploma, degree and master's honours.

4.3 Universal Health Coverage

The study sought to establish the implementation of Universal Health Coverage in Makueni County asking the respondents to indicate their understanding of UHC and access to information on UHC.

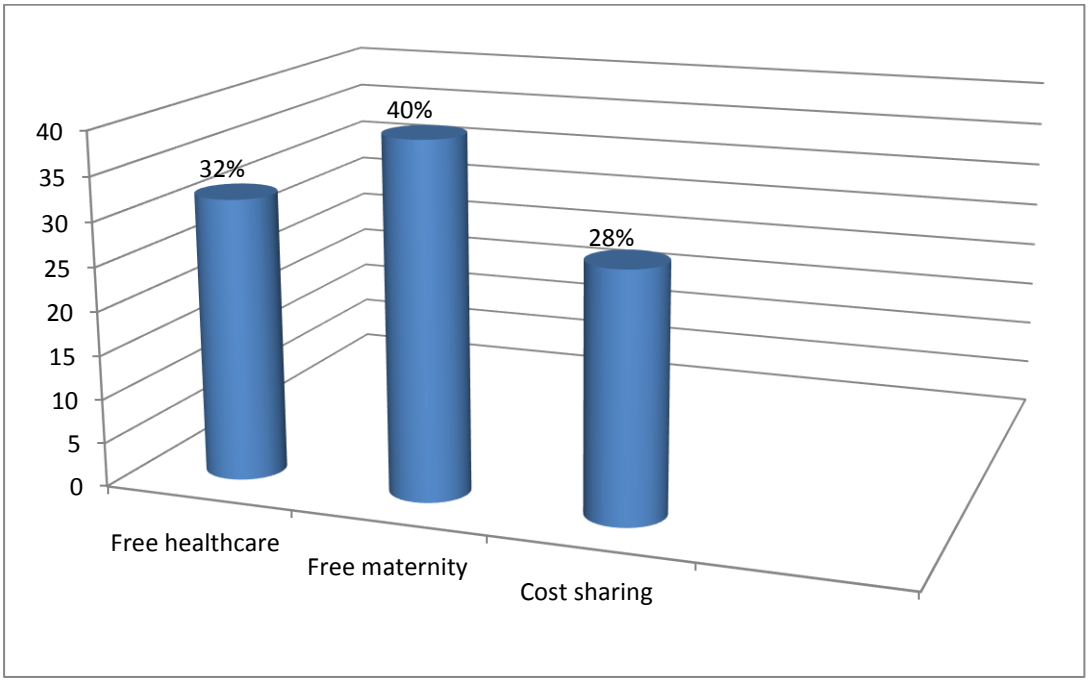


Figure 4.6: Respondents understanding of Universal Health Coverage

Source: Author (2019)

On the understanding of Universal Health Coverage, 100 (40%) of the respondents understood UHC to mean free maternity, 80 (32%) to mean free healthcare while 70(28%) understood it to include cost sharing. This implies that there was high appreciation about the goals and implementation of UHC among the majority of healthcare workers in Makueni County.

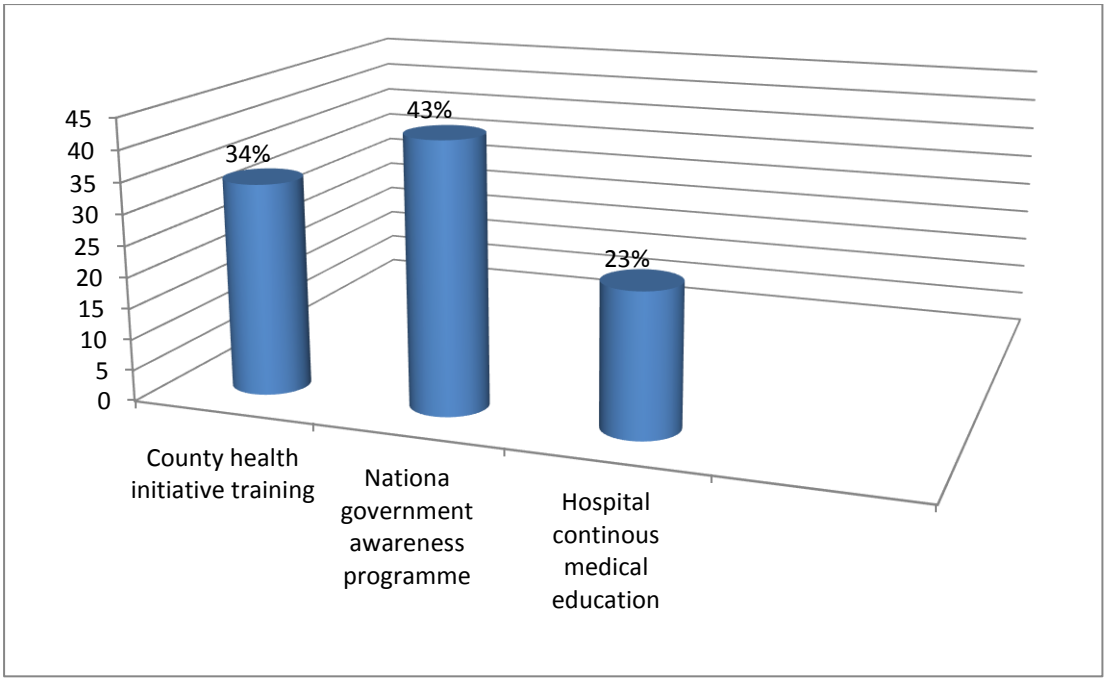


Figure 4.7: Knowledge on Universal Health Coverage

Source: Author (2019)

The sources of information about UHC that the healthcare workers had access to included; National Government Awareness Programmes 108(43%), County Heath Training Initiatives 85 (34%) and Hospital Continuous Medical Education 57 (23%). The findings point to availability of several sources of information about UHC among the health care workers which increased their application of this new concept in their county, hence the significant achievements made in the implementation of the UHC in Makueni County. It also points out the need to have integrated communication on UHC so as to have uniform understanding and harmony in the implementation. This finding is consistent with Kutzin, (2013) report that states that Financing enables the health system to maximize the attainment of goals and objectives. The objectives of financing policy are mainly to promote universal protection against financial risk, equitable distribution of funding burden, promote equitable use and provision of services relative to the need of those services, improve transparency of the system, promote quality in service delivery, and improving efficiency in organizations and delivery of health services.

4.4 Infrastructure and Universal Health Coverage Implementation

The first objective was to examine the influence of infrastructure on the implementation of Universal Health Coverage among Counties in Kenya. The findings are provided in the subsequent section.

4.4.1 Health Infrastructure

The study inquired from the respondents on the importance of the following health infrastructure. The study used the formulae IF (B142>=3,1,0) to calculate the percentage. The data was then coded on Excel spread sheet and percentage computed from the proposition compared to the sample size. The finding in table 4.3

Table 4.3: Importance of the Health Infrastructures

	Strongly disagree	Disagree	Moderately agree	Agree	Strongly agree	Percentage
Statement	**Frequencies**					
Physical infrastructure (health facilities)	0	7	6	158	79	96.86%
Medical equipment and consumables	0	0	27	148	75	100.00%
Transport facilities	0	0	156	156	68	100.00%
ICT infrastructure	0	0	30	159	61	100.00%
Drugs/medicines	0	0	30	159	61	100.00%
Composite percentage						**99.37%**

Source: Author (2019)

Based on the findings, the study established that the three elements under health infrastructure namely Medical equipment and consumables, ICT infrastructures, drugs and medicine were all very critical as all respondents (100%) were in agreement. Transport facilities also had a score of 96.86% meaning it was also critical element in implementation of UHC. The aggregate percentage was 99.37% indicating that most of the respondents agreed that infrastructure was very important. This implied that infrastructure was the key driver of success in the implementation of Universal Health Coverage in Makueni County in Kenya. These findings are in line with Essendi,

Johnson and Madise (2015) who established a need for enhancing the health facilities serving rural communities as well as infrastructure strengthening with the purpose of increasing the accessibility of basic routine and emergency obstetric and care services for infants.

4.4.2 Infrastructure and Universal Health Coverage Implementation

The respondents were asked to indicate their level of agreement with various statements relating to the influence of infrastructure on the implementation of Universal Health Coverage among Counties in Kenya. The responses were rated on a five-point Likert scale where: 1= strongly disagree, 2-disagree, 3-moderately agree, 4-agree and 5= strongly agree. The study used the formulae IF(B142>=3,1, 0) to calculate the percentage. The data was then coded on Excel spread sheet and percentage computed from the proposition compared to the sample size. The finding in table 4.4.

Table 4.4: Infrastructure and Universal Health Coverage Implementation

	Strongly disagree	Disagree	Moderately agree	Agree	Strongly agree	Percentage agreement
Statement	**Frequencies**					
Health infrastructure is critical for Universal Health Coverage	7	0	26	175	42	96.8%
Makueni County has invested in health infrastructure to facilitate Universal Health Coverage	0	7	39	150	54	97.6%
The infrastructure in hospitals in Makueni County are well maintained	7	0	53	128	62	97.2%
The availability of health infrastructure affects your service delivery to patients positively	0	7	54	141	48	97.2%
The county has well maintained modern buildings in the hospitals	0	0	67	136	47	100.00%
Medical equipment (hospital beds, delivery kits, surgical equipment) are in sufficient quantity and are well maintained	0	41	70	113	26	84.30%
The Health Management Information Systems if effective	0	0	73	144	33	100.00%
The health facilities are equipped with the sufficient laboratory equipment	7	7	50	138	48	94.62%
ICT infrastructure in hospitals within the county are available and well maintained	14	0	55	140	41	94.62%
The hospitals in the county have well stocked pharmacies	7	7	50	138	48	94.62%
Aggregate percentage						**95.74%**

Source: Author (2019)

From the findings as indicated in table 4.3, the majority of the respondents agreed to a great extent that infrastructure was a critical pillar that had a significant and positive influence on infrastructure on the implementation of Universal Health Coverage among Counties in Kenya as indicated by the overall percentage of 95.74; More specifically concerning the value of infrastructure as a catalyst for implementation of Universal Health Coverage among Counties in Kenya, the majority of the respondents agreed that the county had well maintained modern buildings in the hospitals ; medical equipment (hospital beds, delivery kits, surgical equipment) are in sufficient quantity and are well maintained ; the Health Management Information Systems is effective ; the health facilities are equipped with the sufficient laboratory equipment; Makueni County has invested in health infrastructure to facilitate Universal Health Coverage ; The infrastructure in hospitals in Makueni County are well maintained; the availability of health infrastructure affects your service delivery to patients positively; health infrastructure is critical for Universal Health Coverage; ICT infrastructure in hospitals within the county are available and well maintained ; and lastly the respondent agreed that the hospitals in the county have well stocked pharmacies.

The aggregate percentage indicated that majority of the respondent agreed that infrastructure was significant in Universal Health Coverage Implementation. This finding is in line with Kaibung, Mavole and Okuku (2017) who concluded that road networks, power coverage, healthcare facilities, and water and telecommunication, positively affect the healthcare service delivery in the county.

The findings may be interpreted to mean that the success realised in the implementation of Universal Health Coverage in Makueni County in Kenya was as a result of the county's investment in availing and maintaining infrastructure in health sector in terms of physical infrastructure, medical equipment, consumables and drugs, communication, ICT and transportation. Through the robust infrastructure in place, service delivery to patients in the County was significantly improved, contributing to great milestones in the Universal Health Coverage. It can also be noted that we had a significant number whose response was in moderate agreement and this can be deduced to mean that still there is a room for improvement on putting up of necessary infrastructure in the county hospitals.

This finding is concurrent with Kamau, Osuga and Njuguna (2017) who stated that that the implementation of Kiambu County health care referral system faces various challenges like in infrastructure, health information systems, health care staff capacity and financial resources and recommended improvement of infrastructure, implementation a standard referral system monitoring toolkit and provision of adequate funds for implementation monitoring and evaluation.

4.5 Human Resource Capacity and Universal Health Coverage Implementation

The second objective was to establish the influence of human resource capacity on implementation of Universal Health Coverage among Counties in Kenya. The findings are provided in the subsequent section.

4.5.1 Human Resource Capacity and Universal Health Coverage Implementation

The respondents were to indicate their level of agreement with various statements relating to the influence of human resource capacity on implementation of Universal Health Coverage among Counties in Kenya. The responses were rated on a five-point Likert scale where: 1= strongly disagree, 2-disagree, 3-moderately agree, 4-agree and 5= strongly agree. The study used the formulae IF(B142>=3,1, 0) to calculate the percentage. The data was then coded on Excel spread sheet and percentage computed from the proposition compared to the sample size. The finding in table 4.5.

Table 4.5: Human Resource Capacity and Universal Health Coverage Implementation

	Strongly Disagree	Disagree	Moderately agree	agree	Strongly agree	Percentage agreement
Statement	**Frequencies**					
Employees are qualified for their roles and responsibilities in healthcare delivery	7	7	40	164	32	94.62%
Employees possess the knowledge, skills, and abilities to implement universal health coverage	0	7	41	175	27	97.31%
The hospital has adequate medical doctors/physicians to implement universal health coverage	0	21	46	135	48	91.93%
The hospital has adequate nurse's/midwives to implement universal health coverage	7	0	43	180	20	97.31%
The hospital has adequate clinical officers to implement universal health coverage	0	7	68	142	33	97.76%
The hospital has adequate laboratory technologists to implement universal health coverage	0	6	54	170	20	97.31%
The hospital has adequate pharmacists and drug dispensers to implement universal health coverage	7	0	54	162	27	97.76%
The hospital has adequate ICT staff to implement universal health coverage	0	15	54	141	40	93.27%
The hospital has adequate support staff to implement universal health coverage	7	16	40	140	47	90.58%
Aggregate percentage						**95.32%**

Source: Author (2019)

From the findings in table 4.5above, it was evident that human resource capacity was one of the major determinants of success behind the implementation of Universal Health Coverage in Makueni County and to a larger extent among Counties in Kenya as indicated by the overall percentage of score of 95.32%. Concerning the role of human resource capacity on implementation of Universal Health Coverage, the majority of the

respondents agreed that; the hospital has adequate clinical officers to implement universal health coverage ; the hospital has adequate pharmacists and drug dispensers to implement universal health; employees possess the knowledge, skills, and abilities to implement universal health coverage; the hospital has adequate nurse's/midwives to implement universal health coverage; the hospital has adequate laboratory technologists to implement universal health coverage ; employees are qualified for their roles and responsibilities in healthcare delivery ; the hospital has adequate ICT staff to implement universal health coverage ; the hospital has adequate medical doctors/physicians to implement universal health coverage ; and the hospital has adequate support staff to implement universal health coverage respectively.

This finding is supported by (WHO, 2010) reports that stated that Health workers are those people engaged in actions whose primary intent is to protect and improve health and consist of broadly health service providers and health management and support workers. The health providers like clinical officers, doctors, pharmacists, nurses, etc.) to technicians of the laboratory, management staff as well as other support staff like cleaners, medical records officers, health economists who don't give any service directly to the patients but are vet significant in functioning of the health system.

Based on the findings, it is evident that human resource capacity was a key pillar that Makueni County leveraged on to step up the rate of implementation of Universal Health Coverage. The mix of different competences helped in the provision of quality healthcare to a large of population in the Makueni County hence making strides in the implementation of Universal Health Coverage. The county significantly invested in the human resource capacity to bridge any gap in their skills, competence and adequacy and diversity of staff employed. In addition, the county ensured that they had all the requisite specialities of health service providers and health management and support workers. This finding is in line with Nzuve and Mwarey (2012) who indicated that it is essential for deliberate focus on the sound HR practices as medical staff are significant in saving lives. With no appropriate HR planning, the system of the health care will depreciate and this might lead great losses to the economy of Kenyan as health care quality is a crucial objective in the Kenya Vision 2030, MDGs and other priorities of the nation.

4.5.2 Improving the healthcare staff capacity

The study sought to establish the initiatives that would help to improve the healthcare staff capacity to enhance Universal Health Coverage implementation in Makueni County. The study used the formulae IF(B142>=3,1, 0) to calculate the percentage. The study used the formulae IF(B142>=3,1, 0) to calculate the percentage. The data was then coded on Excel spread sheet and percentage computed from the proposition compared to the sample size. The finding in table 4.6

Table 4.6: Improving the healthcare staff capacity

	Strongly disagree	**Disagree**	**Moderately agree**	**agree**	**Strongly agree**	**Percentage Agreement**
Statement	**Frequencies**					
Rigorous training of staff	13	27	68	136	6	83.86%
recruitment of additional personnel	0	13	13	170	54	94.62%
proper compensation of healthcare workers	27	41	43	113	26	84.30%
equitable distribution of the staff	28	52	67	96	7	76.23%
Aggregate percentage						**84.75%**

Source: Author (2019)

According to the findings in table 4.6, majority of the respondent agreed that healthcare staff capacity improved their health care represented by overall percentage of 84.75%. The respondent agreed that Makueni County used rigorous training of staff 83.86%. The respondent disagreed that recruitment of additional personnel 94.62%; proper compensation of healthcare workers 84.30%; moderately agreed that equitable distribution of the staff 76.23% respectively.

Therefore, Makueni County can be said to be keen to continuously improve the capacity of its health care workers towards the successful implementation of the UHC. By increasing this capacity, the productivity and quality of services by the workers is likely to significantly improve. This finding is in line with Kumar and Khan (2013) who highlighted that that present central civil services rules, methods of recruitment, system of appraisal, reward and punishment, etc. are not sufficient in handling the issues of

management linked to the HR. Management of the human resource needs imperative attention of the policy makers helping the firm culture for potentials of the HR optimal use. The adoption of good human resource management practices motivates health staff in delivering efficient health care.

4.6 Funding and Universal Health Coverage Implementation

The third objective was to determine the influence of funding on the implementation of Universal Health Coverage among Counties in Kenya. The findings are provided in the subsequent section.

4.6.1 Funding and Universal Health Coverage Implementation

The respondents were to indicate their level of agreement with various statements relating to the influence of funding on the implementation of Universal Health Coverage among Counties in Kenya. The responses were rated on a five-point Likert scale where: 1= strongly disagree, 2-disagree, 3-moderately agree, 4-agree and 5= strongly agree. The study used the formulae IF (B142>=3,1,0) to calculate the percentage. The data was then coded on Excel spread sheet and percentage computed from the proposition compared to the sample size. The finding in table 4.7.

Table 4.7: Funding and Universal Health Coverage Implementation

	Strongly disagree	Disagree	Moderately Agree	agree	Strongly agree	Percentage Agreement
Statement	**Frequencies**					
Lack of funding is a challenge affecting the implementation of universal health coverage in Makueni County	0	7	75	135	33	97.31%
There are mechanisms in place to ensure efficiency in utilization of funds	0	12	67	144	27	94.62%
Healthcare has sufficient budgetary allocation by the county government of Makueni	0	13	67	149	21	94.62%
Patients in the county are bearing a heavy burden in out of pocket expenditure on healthcare	7	26	59	103	55	87.00%
NHIF is sufficiently covering the healthcare cost for patients thus reducing the out of pocket expenditure	0	13	80	131	26	94.62%
Makueni County receives sufficient donor support to enhance healthcare delivery	0		67	136	47	100.00%
Makueni County has adequate funds are available to hire qualified medical personnel	21	6	51	138	34	89.69%
Makueni County has adequate funds are available to maintain and upgrade medical infrastructure	9	7	75	146	13	93.27%
Makueni County has adequate funds are available to purchase and maintain medical equipment	7	20	60	149	14	95.07%
Makueni County has adequate funds are available to purchase and maintain transport facilities	0	0	13	81	156	95.07%
Makueni County has adequate funds are available to offer constant training on medical equipment	0	0	13	81	156	84.30%
Makueni County has adequate funds are available to support free services to patients e.g. maternity	7	34	81	94	34	
Composite percentage						**93.23%**

Source: Author (2019)

Findings in table 4.7 above indicates that the majority of the respondents agreed to a great extent that funding had a great and positive effect on implementation of Universal Health Coverage among Counties in Kenya as indicated by the overall mean score of 93.23%.More specifically concerning the role of funding in enhancing implementation of Universal Health Coverage among Counties in Kenya, the majority of the respondents agreed that; lack of funding is a challenge affecting the implementation of universal health coverage in Makueni County; there are mechanisms in place to ensure efficiency in utilization of funds; healthcare has sufficient budgetary allocation by the county government of Makueni; NHIF is sufficiently covering the healthcare cost for patients thus reducing the out of pocket expenditure; Makueni County receives sufficient donor support to enhance healthcare delivery; Makueni County has adequate funds are available to purchase and maintain medical equipment; Makueni County has adequate funds are available to purchase and maintain transport facilities; Makueni County has adequate funds are available to offer constant training on medical equipment; Makueni County has adequate funds are available to maintain and upgrade medical infrastructure; Makueni County has adequate funds are available to hire qualified medical personnel;patients in the county are bearing a heavy burden in out of pocket expenditure on healthcare; lastly the respondents moderately agreed that Makueni County has adequate funds are available to support free services to patients e.g. maternity respectively.

From the findings, it was deduced that Makueni County consistently improved the financial capability in the implementation of Universal Health Coverage in terms of adequacy of funds, prudent and efficient use of funds, timely disbursement of funds and accountability and prioritization in financial resource use. Through financing, the County was able to attain financial capability and universal health coverage implementation. However, the fact that 87% of respondents felt that the patients are still bearing a heavy burden on out of pocket expenditure , and 97% indicated lack of funding as a major issue affecting implementation of and also having had quite a big number who moderately agreed on funding aspects that were being examined, this could be a clear pointer that funding aspect of the UHC at Makueni needs to be improved so as to achieve the main objective of patients not bearing financial burden or being impoverished due to sickness.

This finding is supported with Akacho (2014) who noted that The quality healthcare availability of to the public unswervingly assists in bettering lives better in future by increasing their productivity in the society, it as well minimises the people number who die on daily basis as a result of the poor healthcare in public hospitals provision for all the citizens including adults and adults in the public maternity wards. Healthcare provision in public hospitals is attained through the enough staff availability, resources, facilities of the hospitals as well as good process of communication which facilitates the hospital to run efficiently. It was revealed that inadequate personnel were a key challenge facing hospitals as there are less staffs in comparison to the patient's number, resulting to staff overloads as they struggle to serve the present patients. It is recommended in this study that there is a need for adequate health personnel who are competent to serve the patient. This may be adequately attended to by Ministry of Health by putting more emphasis on the people being employed and reduce corruption incidences in recruitment.

4.7 Technology and Universal Health Coverage Implementation

The fourth objective was to determine the influence of technology on the implementation of Universal Health Coverage among Counties in Kenya. The findings are provided in the subsequent section.

4.7.1 Technology and Universal Health Coverage Implementation

The respondents were to indicate their level of agreement with various statements relating to the influence of technology on the implementation of Universal Health Coverage among Counties in Kenya. The responses were rated on a five-point Likert scale where: 1= strongly disagree, 2-disagree, 3-moderately agree, 4-agree and 5= strongly agree. The study used the formulae IF (B142>=3,1,0) to calculate the percentage. The data was then coded on Excel spread sheet and percentage computed from the proposition compared to the sample size. The finding in table 4.8

Table 4.8: Technology and Universal Health Coverage Implementation

	Strongly disagree	Disagree	Moderately agree	agree	Strongly agree	Percentage agreement
Statement	**Frequencies**					
There is adequate technological infrastructure in place	7	47	62	106	28	78.48%
Technology improves knowledge acquisition by healthcare personnel	13	27	68	136	6	83.86%
IT enhances collaboration and cooperation possibilities	7	41	67	121	14	81.17%
IT promotes efficiency in the implementation of Universal Health Coverage	7	33	92	105	13	83.86%
IT promotes innovation in the implementation of Universal Health Coverage	0	41	70	113	26	84.30%
Hospitals in Makueni County have technologically advanced medical equipment	10	40	96	95	9	74.89%
Hospitals in Makueni County have adequate communication equipment	7	49	40	96	58	94.62%
Hospitals in Makueni County have well-functioning Health information systems	9	65	94	68	14	69.96%
The County has sufficient ICT staff to support Universal health Coverage	7	33	13	105	92	100.00%
Composite percentage						**83.46%**

Source: Author (2019)

From the findings in Table 4.8 above, the majority of the respondents agreed to a great extent that technology was a major critical element explaining success of implementation of Universal Health Coverage among Counties in Kenya like Makueni County as indicated by the overall mean score of 83.46%. More specifically concerning the role of technology in enhancing implementation of Universal Health Coverage among Counties in Kenya, the majority of the respondents agreed that; the County has sufficient ICT staff to support Universal health Coverage 100.00%; hospitals in Makueni County have adequate communication equipment 94.62%;IT promotes innovation in the implementation of Universal Health Coverage 84.30%; The respondent agreed that technology improves knowledge acquisition by healthcare

personnel 83.86%; IT promotes efficiency in the implementation of Universal Health Coverage 83.86%; IT enhances collaboration and cooperation possibilities 81.17%. The respondent moderately agreed that there is adequate technological infrastructure in place 78.48%; hospitals in Makueni County have technologically advanced medical equipment 74.89%. The respondent moderately agreed that hospitals in Makueni County have well-functioning Health information systems 69.96%.

From the findings, it is evident that majority of healthcare workers believed in the value technology can bring in enhancing UHC in the county. It also shows Makueni County had leveraged on technology to enhance the implementation of universal health coverage. There is however a big room for improvement as many moderately agreed on various aspects of IT that were examined. This finding concurred with Wasonga (2015) who found that inadequate ICT infrastructure in the organization hinders service delivery to the healthcare subscribers and that inadequate ICT infrastructure among the subscribers hinders their access to the healthcare services. Other challenges included: lack of technical know-how, ineffective government policies and limited allocation of funds.

4.8 Government Policies and Regulations and Universal Health Coverage Implementation

The fifth objective was to determine the moderating effect of National government policies and regulations on implementation of universal health coverage. The findings are provided in the subsequent section.

4.8.1Government Policies and Regulations and Universal Health Coverage Implementation

The respondents were to indicate their level of agreement with various statements relating to the moderating effect of national government policies and regulations on implementation of universal health coverage. The responses were rated on a five-point Likert scale where: 1= strongly disagree, 2-disagree, 3-moderately agree, 4-agree and 5= strongly agree. The study used the formulae IF (B142>=3,1,0) to calculate the percentage. The data was then coded on Excel spread sheet and percentage computed from the proposition compared to the sample size. The finding in table 4.9

Table 4.9: Government Policies and Regulations and Universal Health Coverage Implementation

Statement	Strongly disagree	Disagree	Moderately agree	agree	Strongly agree	Percentage Agreement
	Frequencies					
Government policies and regulations affect service delivery in public hospitals	0	0	30	159	61	100.00%
Since health is a devolved function, County government is handling healthcare better	0	0	13	157	80	97.31%
Government support to County health programmes enhances their implementation	0	7	6	158	79	100.00%
The government plays a significant role in ensuring the availability of well-trained health personnel	0	0	14	169	67	100.00%
The government is actively seeking financial support from development partners to boost healthcare delivery	0	0	26	156	68	100.00%
National health programmes such as the medical equipment programme have improved healthcare delivery in the County	0	3	0	159	61	97.31%
Healthcare is a priority to both the national and county governments	0	0	12	198	40	100.00%
Composite percentage						**99.23%**

Source: Author (2019)

From the findings in table 4.9 above, it is evident that national government policies and regulations had a significant moderating effect on implementation of universal health

coverage as reflected by the high overall mean score of99.23%. More specifically concerning the value of national government policies and regulations as a catalyst for implementation of universal health coverage, the majority of the respondents agreed that; government policies and regulations affect service delivery in public hospitals ;That healthcare is a priority to both the national and county governments ; government support to County health programmes enhances their implementation ; the government plays a significant role in ensuring the availability of well-trained health personnel ; the government is actively seeking financial support from development partners to boost healthcare delivery ; national health programmes such as the medical equipment programme have improved healthcare delivery in the County ; since health is a devolved function, That the County government is handling healthcare better respectively.

Table 4.9 findings imply that government policies and regulations had a major bearing on the success of the implementation of universal health coverage in Makueni County. The County had made major milestones in institutionalizing policies and regulations which standardised the quality of healthcare provided in the different medical facilities across the County. Given that health in Kenya was a devolved function, the national government continues to influence implementation of universal health coverage through policy making which informed critical areas of the UHC including funding priorities, human resource matters, emerging technology use in Kenyan hospitals among others, hence the moderating effect on the universal health coverage at county levels. This finding is in line with Wasonga (2015) who noted that other challenges included that affect technological innovation is lack of technical know-how, ineffective government policies and limited allocation of funds.

4.9 Regression Analysis

4.9.1 Regression Analysis without Moderating Variable

To confirm relationship between the four elements and the implementation of Universal Health Coverage implementation among Counties in Kenya, the study used multiple regression analysis.

The following linear regression model was adopted to help determine the nature of this relationship: $UHC = \alpha+\beta_1F+\beta_2I+\beta_3HR+\beta_4T+\varepsilon$; Where Y is the dependent variable (Universal Health Coverage Implementation), α = Constant; β_1, β_2, β_3, β_4=Beta

Coefficients; F= Funding; I= Infrastructure; HR= Human Resource and T= Technology.

Table 4.10: Coefficient of Determination

	Unstandardized Coefficients		Standardized Coefficients		
	B	**Std. Error**	**Beta**	**T**	**Sig.**
Constant	3.312	.328		10.089	.000
Funding	0.752	0.1032	0.152	4.223	.0179
Infrastructure	0.545	0.2178	0.116	3.936	.0251
Human Resource	0.487	0.3425	0.054	3.724	.0269
Technology	0.439	0.1937	0.263	3.247	.0454

Source: Author (2019)

At 5% level of significance, all the four variables were statistically significant as their *p*-value were within the acceptable threshold of ($p < 0.05$). From the findings, positive effect on UHC implementation was found on all the four elements, that is, Funding; infrastructure; human resource and technology with regression coefficient values: $ß_0$=3.312, $ß_1$=0.752, $ß_2$=0.545, $ß_3$=0.487 and $ß_4$=0.439 respectively. The regression model can therefore be expressed as follows:

Y= 3.312+0.752(F)+ 0.545(I) I+ 0.487(HR)+ 0.439**(T)**+ **є**

From this regression equation, taking all factors constant at zero, the UHC implementation would be 3.312. These findings indicate that taking all other independent variables at zero, a unit increase in the Healthcare funding will lead to 0.752 increase in UHC implementation; a unit increase in the infrastructure will lead to 0.545 increase in UHC implementation; a unit increase in the human resource will lead to 0.487 increase in UHC implementation while a unit increase in the technology will lead to 0.487 increase in UHC implementation. The findings imply that funding contribute the most to UHC implementation followed by infrastructure; human resource and technology respectively. This finding is consistent with Kutzin, (2013) report that states that funding enables the health system to maximize the attainment of goals and objectives. The objectives of funding policy are mainly to promote universal protection against financial risk, equitable distribution of funding burden, promote equitable use and provision of services relative to the need of those services, improve transparency

of the system, promote quality in service delivery, and improving efficiency in organizations and delivery of health services.

At 5% level of significance and 95% level of confidence, funding had a 0.0179 level of significance, infrastructure had 0.0251 significance level, and human resource had a 0.0269 level of significance while technology had 0.0454 significance level. The significance values obtained indicate that the most significant element influencing UHC implementation is funding; followed by infrastructure; human resource and technology respectively. Funding can also be said to be the driver for all other variables since it's through funding that they are facilitated.

This finding is concurrent with Kamau, Osuga and Njuguna (2017) who stated that that the implementation of Kiambu County health care referral system faces various challenges like in infrastructure, health information systems, health care staff capacity and financial resources and recommended improvement of infrastructure, implementation a standard referral system monitoring toolkit and provision of adequate funds for implementation monitoring and evaluation.

4.9.2 Regression Analysis with Moderating Variable

To confirm relationship between government policy which is the moderating variable and the implementation of Universal Health Coverage implementation among Counties in Kenya, the study used multiple regression analysis.

The following linear regression model was adopted to help determine the nature of this relationship: $UHC = \alpha + \beta_1 UH_1 + \beta_2 G_2 + \varepsilon$; Where Y is the dependent variable (Universal Health Coverage Implementation), α = Constant; β_1=Beta Coefficients; UH= elements of universal health coverage implementation (F+I+HR+T) and MD=Moderating variable.

Table 4.11: Coefficient of Determination

	Unstandardized Coefficients		**Standardized Coefficients**		
	B	**Std. Error**	**Beta**	**T**	**Sig.**
Constant	4.422	.318		11.109	.000
UH	0.602	0.1386	0.252	4.341	.010
G	0.721	0.1626	0.216	4.432	.001

Source: Author (2019)

At 5% level of significance, elements of universal health coverage implementation were statistically significant as their p-value were within the acceptable threshold of ($p < 0.05$). The p-value of government policy was also less that ($p < 0.05$). From the findings, positive effect on UHC implementation was found on elements of universal health coverage implementation and government policies, that is, the regression model can therefore be expressed as follows:

UHC= 4.422+0.602 (UH) + 0.721(G) + ϵ

From this regression equation, taking all factors constant at zero, the UHC implementation would be 4.422. These findings indicate that taking all other independent variables at zero, a unit increase in elements of universal health coverage implementation will lead to 0.602 increase in UHC implementation while and a unit increase in the government policies will lead to 0.721. The findings imply that government policies contribute the most to UHC. This finding is consistent with Wasonga (2015) who indicated that that inadequate ICT infrastructure in the organization hinders service delivery to the healthcare subscribers and that inadequate ICT infrastructure among the subscribers hinders their access to the healthcare services. Other challenges included: lack of technical know-how, ineffective government policies and limited allocation of funds. The findings from the regression analysis revealed that the use of electronic health records, telemedicine, health information systems, the internet and mobile health influences the performance of healthcare projects

At 5% level of significance and 95% level of confidence, elements of universal health coverage implementation had a .010 level of significance level while government policy had .001 level of significance. The significance values obtained indicate that National government policies and regulations had a very big moderating influence on UHC implementation and that all other elements need to be aligned with it to function optimally. This finding is concurrent with Waithera, Muhia and Songole (2017) who noted that major challenges observed against the utilization of technology in healthcare delivery include a shortage of funding, lack of technology-literate staff and ineffective government policies.

4.9.3Model Summary

The model summary findings are as shown in Table 4.12 below.

Table 4.11: Model summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.855	0.731	0.642	0.6273

Source: Author (2019)

Table 4.12 indicates that the four elements explain 73.1% of the UHC implementation as represented by the R^2 while other elements not studied influence UHC implementation by 26.9%.

4.9.4 Analysis of Variance (ANOVA)

ANOVA was used to test the claim that there is no significant relationship between the independent variables (elements) and the dependent variable (UHC implementation). The study ANOVA results are as shown in Table 4.13 below.

Table 4.12: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	11.729	4	11.729	9.475	.0179[a]
Residual	15.418	245	.211		
Total	27.147	**249**			

Source: Author (2019)

The significance value is 0.0179which is less than p=0.05 thus the model is statistically significant in predicting how elements influence UHC implementation in Kenya. Hence, the null hypothesis is rejected. The F critical at 5% level of significance was 3.23. Since F calculated is greater than the F critical (value = 9.475), this shows that the overall model was significant in predicting the elements influencing implementation of Universal Health Coverage implementation among Counties in Kenya.

CHAPTER FIVE
SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The study was to assess the elements influencing implementation of Universal Health Coverage implementation among Counties in Kenya.The study was based on the following specific objectives; To determine the influence of infrastructure on the implementation of Universal Health Coverage among Counties in Kenya; To examine the influence of human resource capacity, on the implementation of Universal Health Coverage among Counties in Kenya; To determine the influence of healthcare funding on the implementation of Universal Health Coverage among Counties in Kenya; To establish the influence of technology on implementation of Universal Health Coverage among Counties in Kenya; To determine the moderating effect of national government policies and regulations on implementation of universal health coverage.

5.2 Summary

The key findings are disaggregated by the five specific objectives of the study.

5.2.1 Infrastructure and Universal Health Coverage Implementation

The study revealed that infrastructure was a critical pillar that had a significant and positive influence on infrastructure on the implementation of Universal Health Coverage among Counties in Kenya. More specifically concerning the value of infrastructure as a catalyst for implementation of Universal Health Coverage among Counties in Kenya, the majority of the respondents agreed that; health infrastructure is critical for Universal Health Coverage, Makueni County has invested in health infrastructure to facilitate Universal Health Coverage ; the infrastructure in hospitals in Makueni County are well maintained; the availability of health infrastructure affects your service delivery to patients positively; the county has well maintained modern buildings in the hospitals; medical equipment (hospital beds, delivery kits, surgical equipment) are in sufficient quantity and are well maintained; the Health Management Information Systems if effective; the health facilities are equipped with the sufficient laboratory equipment; ICT infrastructure in hospitals within the county are available

and well maintained; and the hospitals in the county have well stocked pharmacies respectively.

Therefore, the success realised in the implementation of Universal Health Coverage in Makueni County in Kenya was as a result of the county's investment in availing and maintaining a vigorous infrastructure in health sector in terms of physical infrastructure, medical equipment, consumables and drugs, communication and ICT, transportation (ambulance services). Through having infrastructure in place, service delivery to patients in the County was significantly improved, contributing to great milestones in the Universal Health Coverage.

5.2.2 Human Resource Capacity and Universal Health Coverage Implementation

From the findings, it was evident that human resource capacity was one of the major determinants of success behind the implementation of Universal Health Coverage among Counties in Makueni County in Kenya. More specifically concerning the role of human resource capacity on implementation of Universal Health Coverage, the majority of the respondents agreed that; employees are qualified for their roles and responsibilities in healthcare delivery; employees possess the knowledge, skills, and abilities to implement universal health coverage ; the hospital has adequate medical doctors/physicians to implement universal health coverage; the hospital has adequate nurse's/midwives to implement universal health coverage ; the hospital has adequate clinical officers to implement universal health coverage; the hospital has adequate laboratory technologists to implement universal health coverage ; the hospital has adequate pharmacists and drug dispensers to implement universal health coverage ; the hospital has adequate ICT staff to implement universal health coverage ; and the hospital has adequate support staff to implement universal health coverage respectively.

Based on the findings, it is evident that human resource capacity was a key pillar that Makueni County leveraged on to step up the rate of implementation of Universal Health Coverage. The county significantly invested in the human resource capacity to bridge any gap in their skills, competence and adequacy and diversity of staff employed. In addition, the county ensured that they had all the requisite specialities of health service providers and health management and support workers. The mix of different competence helped in provision of quality healthcare to a large of population in the

Makueni County hence making strides in the implementation of Universal Health Coverage.

The study established that Makueni County used a number of initiatives to improve the healthcare staff capacity among them, rigorous training of staff; recruitment of additional personnel; proper compensation of healthcare workers; equitable distribution of the staff respectively. Therefore, Makueni County was keen to continuously improve the capacity of its health care workers towards the successful implementation of the UHC. By increasing this capacity, the productivity and quality of services by the workers had improved.

5.2.3 Funding and Universal Health Coverage Implementation

From the findings, study revealed that funding had the greatest and positive effect on implementation of Universal Health Coverage among Counties in Kenya. More specifically concerning the role of funding in enhancing implementation of Universal Health Coverage among Counties in Kenya, the majority of the respondents agreed that; lack of funding is a challenge affecting the implementation of universal health coverage in Makueni County; other factors identified as key in funding were ,having mechanisms in place to ensure efficiency in utilization of funds ;sufficient budgetary allocation by the county government of Makueni; patients in the county bearing a heavy burden in out of pocket expenditure on healthcare; NHIF sufficiently covering the healthcare cost for patients thus reducing the out of pocket expenditure; Makueni County receives sufficient donor support to enhance healthcare delivery; Makueni County has adequate funds are available to hire qualified medical personnel; Makueni County has adequate funds are available to maintain and upgrade medical infrastructure; Makueni County has adequate funds are available to purchase and maintain medical equipment; Makueni County has adequate funds are available to purchase and maintain transport facilities; Makueni County has adequate funds are available to offer constant training on medical equipment; Makueni County has adequate funds available to support free services to patients e.g. maternity respectively.

Therefore, Makueni County consistently improved the financial capability in the implementation of Universal Health Coverage in terms of adequacy of funds, prudent and efficient use of funds, timely disbursement of funds and accountability and

prioritization in financial resource use. Through funding, the County was able to maximize the attainment of goals and objectives of Universal Health Coverage.

5.2.4 Technology and Universal Health Coverage Implementation

The study established that technology was a critical element explaining success of implementation of Universal Health Coverage among Counties in Kenya like Makueni County. More specifically concerning the role of technology in enhancing implementation of Universal Health Coverage among Counties in Kenya, the majority of the respondents agreed that; there is adequate technological infrastructure in place; the study also established that technology improves knowledge acquisition by healthcare personnel; It enhances collaboration and cooperation possibilities ;promotes efficiency in the implementation of Universal Health Coverage and that IT promotes innovation in the implementation of Universal Health Coverage. Further it was established that hospitals in Makueni County have technologically advanced medical equipment; have adequate communication equipment; have well-functioning Health information systems and that the County has sufficient ICT staff to support Universal Health Coverage respectively.

From the findings, it is evident that Makueni County leveraged on technology to enhance the implementation of universal health coverage. The acquisition of modern technology by the County increased the provision of quality healthcare to a higher size of population as opposed to using manual systems. Technology helped to improve the efficiency and productivity in the hospitals in the Makueni County.

5.2.5 Government Policies and Regulations and Universal Health Coverage Implementation

According to the findings, it is evident that government policies and regulations had a huge significant moderating effect on implementation of universal health coverage as reflected. More specifically concerning the value of government policies and regulations as a catalyst for implementation of universal health coverage, the majority of the respondents agreed that; government policies and regulations affect service delivery in public hospitals; since health is a devolved function, there was agreement that the County government is handling healthcare better; government support to County health programmes enhances their implementation; the government plays a

significant role in ensuring the availability of well-trained health personnel and that the government is actively seeking financial support from development partners to boost healthcare delivery. The finding was also positive on the national health programmes such as the medical equipment programme has improved healthcare delivery in the County. There was a feeling that national Government policies conflict with county government policies on healthcare and this could be attributed to the fact that the data was collected when there was a labour conflict between healthcare workers and county and national governments. However, the findings also established that healthcare is a priority to both the national and county governments.

Therefore, government policies and regulations had a major bearing on the success of the implementation of universal health coverage in Makueni County. The County had made major milestones in institutionalizing policies and regulations which standardised the quality of healthcare provided in the different medical facilities across the County. Given that health in Kenya was a devolved function, the national government continues to influence implementation of universal health coverage through policy making which informed critical areas of the UHC including funding priorities, human resource matters, emerging technology use in Kenyan hospitals among others, hence the moderating effect on the universal health coverage at county levels.

The study further established that at 5% level of significance, all the four variables were statistically significant as their *p*-value were within the acceptable threshold of ($p < 0.05$). From the findings, positive effect on UHC implementation was found on all the four elements that is, funding; infrastructure; human resource and technology with regression coefficient values. At 5% level of significance infrastructure, human resource and technology all the variable were significant. The significance values obtained indicate that the most significant element influencing UHC implementation is funding; followed by infrastructure; human resource and technology respectively.

5.3 Conclusions

The study was to assess the elements influencing implementation of Universal Health Coverage implementation among Counties in Kenya.The study was based on the following specific objectives; To determine the influence of infrastructure on the implementation of Universal Health Coverage among Counties in Kenya; To examine

the influence of Human resource capacity on the implementation of Universal Health Coverage among Counties in Kenya; To determine the influence of healthcare funding on the implementation of Universal Health Coverage among Counties in Kenya; To establish the influence of technology capacity on implementation of Universal Health Coverage among Counties in Kenya; To determine the moderating effect of government policies and regulations on implementation of universal health coverage.

5.3.1 Infrastructure and Universal Health Coverage Implementation

The success realised in the implementation of Universal Health Coverage in Makueni County in Kenya was as a result of the county's investment in availing and maintaining a vigorous infrastructure in health sector in terms of physical infrastructure, medical equipment, consumables and drugs, communication and ICT, transportation. Through the good infrastructure in place, service delivery to patients in the County was significantly improved, contributing to great milestones in the Universal Health Coverage. These findings are similar to those of Essendi, Johnson, Madise (2015), whereby he established infrastructure as a major challenge in provision of, maternal and new-born care services in eastern Kenya. The study concludes that infrastructure was the key driver of success in the implementation of Universal Health Coverage in Makueni County in Kenya.

5.3.2 Human Resource Capacity and Universal Health Coverage Implementation

The human resource capacity was a key pillar that Makueni County leveraged on to step up the rate of implementation of Universal Health Coverage. The county significantly invested in the human resource capacity to bridge any gap in their skills, competence and adequacy and diversity of staff employed. In addition, the county ensured that they had all the requisite specialities of health service providers and health management and support workers. The mix of different competence helped in provision of quality healthcare to a large of population in the Makueni County hence making strides in the implementation of Universal Health Coverage. The study concludes that human resource capacity was one of the major determinants of success behind the implementation of Universal Health Coverage among Counties in Makueni County in Kenya. The study further concludes that Makueni County was keen to continuously improve the capacity of its health care workers towards the successful implementation of the UHC. By increasing this capacity, the productivity and quality of services by the

workers was likely to significantly improve. Similar findings were advance by Akacho, (2014) who concluded that staffing was is a major factor influencing service delivery in public hospitals.

5.3.3 Funding and Universal Health Coverage Implementation

Through funding, Makueni County was able to maximize the attainment of goals and objectives of Universal Health Coverage. From the findings, study concludes that healthcare funding had the greatest and positive effect on implementation of Universal Health Coverage among Counties in Kenya compared to other three elements under the study. Makueni County consistently improved the financial capability in the implementation of Universal Health Coverage in terms of adequacy of funds, prudent and efficient use of funds, timely disbursement of funds and accountability and prioritization in financial resource use. These finding are confirming Mosquera (2014) on enablers and barrier to PHC implementation in Bogota and that concluded that lack of stable funding source was a major barrier to PHC implementation

5.3.4 Technology and Universal Health Coverage Implementation

The acquisition of modern technology by the County increased the provision of quality healthcare to a higher size of population as opposed to using manual systems. The study concludes that technology was a critical element explaining success of implementation of Universal Health Coverage among Counties in Kenya like Makueni County. From the findings, it is further concluded that Makueni County leveraged on technology to enhance the implementation of universal health coverage. Technology helped to improve the efficiency and productivity in the hospitals in the Makueni County. A study by Wasonga, (2015) found that inadequate ICT Infrastructures in organizations hinders service delivery to service providers.

5.3.5 Government Policies and Regulations and Universal Health Coverage Implementation

The study concludes that government policies and regulations had a huge and significant moderating effect on implementation of universal health coverage. The national government policies and regulations had a major bearing on the success of the implementation of universal health coverage in Makueni County. The County had made major milestones in institutionalizing policies and regulations which standardised the

quality of healthcare provided in the different medical facilities across the County. Given that health in Kenya was a devolved function, the national government continues to influence implementation of universal health coverage through policy making which informed critical areas of the UHC including funding priorities, human resource matters, emerging technology use in Kenyan hospitals among others, hence the moderating effect on the universal health coverage at county levels.

The study further concludes that funding contribute the most to UHC implementation followed by infrastructure; human resource and technology respectively. In addition, the most significant element influencing UHC implementation is funding; followed by infrastructure; human resource and technology respectively.

5.4 Recommendations

5.4.1 Infrastructure and Universal Health Coverage Implementation

The study established that infrastructure was the key driver of success in the implementation of Universal Health Coverage in Makueni County in Kenya. The success realised in the implementation of Universal Health Coverage in Makueni County in Kenya was as a result of the county's investment in availing and maintaining a vigorous infrastructure in health sector in terms of physical infrastructure, medical equipment, consumables and drugs, communication and ICT, transportation. The study recommends that the Makueni County management should continuously upgrade its infrastructure to meet the increasing and emerging needs of UHC implementation.

5.4.2 Human Resource Capacity and Universal Health Coverage Implementation

The study established that human resource capacity was one of the major determinants of success behind the implementation of Universal Health Coverage among Counties in Makueni County in Kenya. The Makueni County management should ensure that all the human resources are retrained on UHC requirements to endure their competence is aligned with UHC components. The study further recommends that human resource for health should be equitably distributed in the country to ensure uniform access to quality healthcare in all counties. It also recommends an establishment of integrated curriculum on UHC so as to attain harmony among different sources of information regarding the same.

5.4.3 Funding and Universal Health Coverage Implementation

The study established that funding had a great and positive effect on implementation of Universal Health Coverage among Counties in Kenya. The study recommends that the county come up with sustainable strategy of funding for the universal health care so as to relief patients the heavy burden of out of pocket expenses. NHIF being one of the primary sources of Healthcare financing should work closely with counties so as to attain operation efficiency that can ensure that there is adequate funding that meets all the patients' needs in attaining quality, accessible and equitable healthcare as per WHO recommendations. The management of Makueni County should institute stringent measures to curb pilferage and ensure that UHC implementation funds are utilised efficiently.

5.4.4 Technology and Universal Health Coverage Implementation

The study concludes that technology was a major critical element explaining success of implementation of Universal Health Coverage among Counties in Kenya like Makueni County. The study recommends that the management of Makueni County should continue to invest in emerging medical technology to enhance the UHC implementation. In particular the study recommends that the county should strive to have an integrated Healthcare information system (HIS) where Knowledge, records as well as critical cases can be shared among healthcare professionals so as to ensure patients regardless of their location can attain quality services through Remote assistance by qualified healthcare workers especially doctors.

5.4.5 Government Policies and Regulations and Universal Health Coverage Implementation

The study established that besides the four elements identified by WHO, government policies and regulations had a significant moderating effect on implementation of universal health coverage. The study recommends that National governments and county government should have policies that are well aligned since they are both interdependent on each other in attainment of universal healthcare. In particular since the national government is the one responsible for national budget and financing, it should come up with budgetary allocations that ensure sustainability of universal healthcare in counties. Further, study recommends that the management of Makueni

County should continuously seek to comply with the government policies and regulations on UHC to achieve the best standards and quality in provision of healthcare.

5.5 Areas for further research

Given that four elements explain 73.1% of the UHC implementation of as represented by the R^2, further studies should be conducted to establish these elements influencing UHC implementation by 26.9%. Similar studies can be done in other counties in Kenya implementing the UHC on pilot phase such as Kisumu, Isiolo and Nyeri County for comparison and generalization of findings.

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APPENDICES

Appendix I: Questionnaire

I am MBA student at St Paul's University carrying out a research on strategic implementation of Universal Health Coverage Devolved Units in Kenya. I have chosen Makueni County as a case study.

You are requested to be a respondent in this study which is aimed at gaining insight that will assist assessing the implementation of Universal Health Coverage in Makueni County. Kindly read the instructions and respond to of the questions. Note that your response will be treated is highly confidential.

This questionnaire is for academic research purpose only and the information gathered will be treated anonymously. Please answer all the questions provided as honestly as possible and to the best of your knowledge.

Name: Benjamin Njeru

Reg No. MBA/NRB/5709/17

Signature: ..... Date:.....

SECTION A: HEALTHCARE PRACTITIONER DETAILS

Please tick in the appropriate box

1. Age: Below 24 □
   25 - 35 □
   36 - 45 □
   46-55 □
   56 and above □
2. Sex: Male □
   Female □
3. Employment Position
   Specialist doctor □
   General Practitioner □
   Nurse □
   Clinical Officers □
   Administration □
   Other (Specify)_____
4. Years of experience in current professional capacity
   Less than 2 years □
   2-5 years □
   5-10 years □
   More than 10 years □
5. Education Level
   Certificate □
   Diploma □
   Degree □
   Masters □
   PHD □
   Other (Specify) _____

SECTION B: UNIVERSAL HEALTH COVERAGE

1. Are you aware of the concept of Universal Health Coverage (UHC)?

   Yes □ No □

2. If yes, what is the extent of your knowledge on Universal Health Coverage (UHC)?

   Little extent □Moderate extent □Great extent□ Very great extent□

3. What is your understanding of Universal Health Coverage?

   Free healthcare □

   Free maternity □

   Cost sharing □

   Other (Specify) _____

4. Where did you obtain the knowledge on Universal Health Coverage?

   National Government Awareness Programmes □

   County Heath Training Initiatives □

   Hospital Continuous Medical Education □

   Other (Specify) _____

5. Are you aware of implementation of Universal Health Coverage (UHC) in Makueni County?

   Yes □ No □

6. Is Universal Health Coverage yielding results in Makueni County?

   Yes □ No □

SECTION C: INFRASTRUCTURE AND UNIVERSAL HEALTH COVERAGE IMPLEMENTATION

1. Are hospitals in Makueni County equipped with the necessary equipment to enhance Universal Health Coverage?

   Yes □ No □

2. In order of importance, please rank the following health infrastructure (1-5; 1 being the lowest and 5 being the highest)

   Physical infrastructure (health facilities) □

   Medical equipment and consumables □

   Transport facilities □

   ICT infrastructure □

   Drugs/medicines □

3. What is your level of agreement with the following statements? Use a scale of 1-5 where 1= strongly disagree, 2-disagree, 3-moderately agree, 4-agree and 5= strongly agree.

	1	2	3	4	5
1.Health infrastructure is critical for Universal Health Coverage					
2.Makueni County has invested in health infrastructure to facilitate Universal Health Coverage					
3.The infrastructure in hospitals in Makueni County are well maintained					
4.The availability of health infrastructure affects your service delivery to patients positively					
5.The county has well maintained modern buildings in the hospitals					
6.Medical equipment (hospital beds, delivery kits, surgical equipment) are in sufficient quantity and are well maintained					
7.The Health Management Information Systems if effective					
8.The health facilities are equipped with the sufficient laboratory equipment					
9.ICT infrastructure in hospitals within the county are available and well maintained					
10. The hospitals in the county have well stocked pharmacies					

SECTION D: HUMAN RESOURCE CAPACITY AND UNIVERSAL HEALTH COVERAGE IMPLEMENTATION

1. Have you ever received any formal training on universal health coverage?

   Yes □ No □

2. In your opinion, are healthcare workers equitably distributed to meet the Universal Health Coverage needs in Makueni County?

   Yes □ No □

3. To what extent have you received specialized skills to enable you to be effective in implementing universal health coverage?

   Little extent □ Moderate extent □ Great extent □ Very great extent □

4. What is your level of agreement with the following statements? Use a scale of 1-5 where 1= strongly disagree, 2-disagree, 3-moderately agree, 4-agree and 5= strongly agree.

	1	2	3	4	5
1. Employees are qualified for their roles and responsibilities in healthcare delivery					
2. Employees possess the knowledge, skills, and abilities to implement universal health coverage					
3. The hospital has adequate medical doctors/physicians to implement universal health coverage					
4. The hospital has adequate nurse's/midwives to implement universal health coverage					
5. The hospital has adequate clinical officers to implement universal health coverage					
6. The hospital has adequate laboratory technologists to implement universal health coverage					
7. The hospital has adequate pharmacists and drug dispensers to implement universal health coverage					
8. The hospital has adequate ICT staff to implement universal health coverage					
9. The hospital has adequate support staff to implement universal health coverage					

5. What can be done to improve the healthcare staff capacity to enhance Universal Health Coverage implementation in Makueni County?

   Rigorous training of staff □

   Recruitment of additional personnel □

   Proper compensation of healthcare workers □

   Equitable distribution of the staff □

   Other (Specify) _____

SECTION E: FUNDING AND UNIVERSAL HEALTH COVERAGE IMPLEMENTATION

1. Does Makueni County have sufficient funds to finance Universal Health Coverage (UHC) programme?

   Yes □ No □

2. What is your level of agreement with the following statements? Use a scale of 1-5 where 1- Strongly disagree, 2-Disagree, 3-moderatly agree, 4-Agree and 5 - Strongly agree

	1	2	3	4	5
1. Lack of funding is a challenge affecting the implementation of universal health coverage in Makueni County					
2. There are mechanisms in place to ensure efficiency in utilization of funds					
3. Healthcare has sufficient budgetary allocation by the county government of Makueni					
4. Patients in the county are bearing a heavy burden in out of pocket expenditure on healthcare					
5. NHIF is sufficiently covering the healthcare cost for patients thus reducing the out of pocket expenditure					
6. Makueni County receives sufficient donor support to enhance healthcare delivery					
7. Makueni County has a adequate funds are available to hire qualified medical personnel					
8. Makueni County has a adequate funds are available to maintain and upgrade medical infrastructure					
9. Makueni County has a adequate funds are available to purchase and maintain medical equipment					
10. Makueni County has a adequate funds are available to purchase and maintain transport facilities					
11. Makueni County has a adequate funds are available to offer constant training on medical equipment					
12. Makueni County has a adequate funds are available to support free services to patients e.g. maternity					

SECTION F: TECHNOLOGY AND UNIVERSAL HEALTH COVERAGE IMPLEMENTATION

1. What is the level of Information Technology literacy?

   Low □

   Medium □

   High □

2. To what extent do you utilize technology in your day to day healthcare delivery role?

   Little extent □ Moderate extent □ Great extent □ Very great extent □

3. Is Makueni County effective in promoting the utilization of health technology?

   Yes □ No □

4. What is your level of agreement with the following statements? Use a scale of 1-5 where 1= strongly disagree, 2-disagree, 3-moderately agree, 4-agree and 5= strongly agree.

	1	2	3	4	5
1. There is adequate technological infrastructure in place					
2. Technology improves knowledge acquisition by healthcare personnel					
3. IT enhances collaboration and cooperation possibilities					
4. IT promotes efficiency in the implementation of Universal Health Coverage					
5. IT promotes innovation in the implementation of Universal Health Coverage					
6. Hospitals in Makueni County have technologically advanced medical equipment					
7. Hospitals in Makueni County have adequate communication equipment					
8. Hospitals in Makueni County have well-functioning Health information systems					
9. The County has sufficient ICT staff to support Universal health Coverage					

SECTION G: GOVERNMENT POLICIES AND REGULATIONS AND UNIVERSAL HEALTH COVERAGE IMPLEMENTATION

To what extent to you agree/disagree with the following statements? Use a scale of 1-5 where 1= strongly disagree, 2-disagree, 3-moderately agree, 4-agree and 5= strongly agree

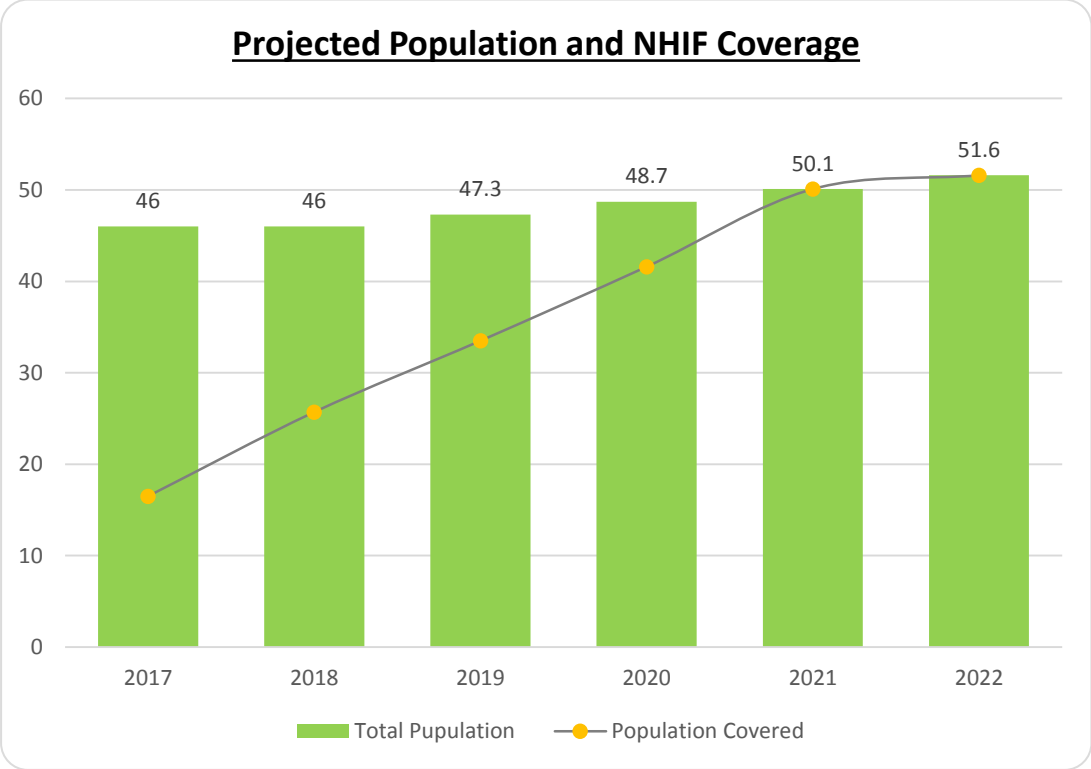
	1	2	3	4	5
1. Government policies and regulations affect service delivery in public hospitals					
2. Since health is a devolved function, I find that the County government is handling healthcare better					
3. Government support to County health programmes enhances their implementation					
4. The government plays a significant role in ensuring the availability of well-trained health personnel					
5. The government is actively seeking financial support from development partners to boost healthcare delivery					
6. National health programmes such as the medical equipment programme have improved healthcare delivery in the County					
7. National Government policies conflict with county government policies on healthcare					
8. Healthcare is a priority to both the national and county governments					

THANK YOU FOR YOUR TIME

Appendix II: Projected Growth of Population under NHIF Coverage in Kenya

The National Hospital Insurance Fund (NHIF) is mandated by the Ministry of Health (MoH) of Kenya to implement UHC (Mwaura, Barasa, Romana, & Rogo, 2015).f Below is a chart illustrating the projected growth of population under NHIF coverage in Kenya.

Figure 1: Projected Population and NHIF Coverage



Source:(National Health Insurance Fund, 2018)

Appendix III: National and Devolved Healthcare Functions

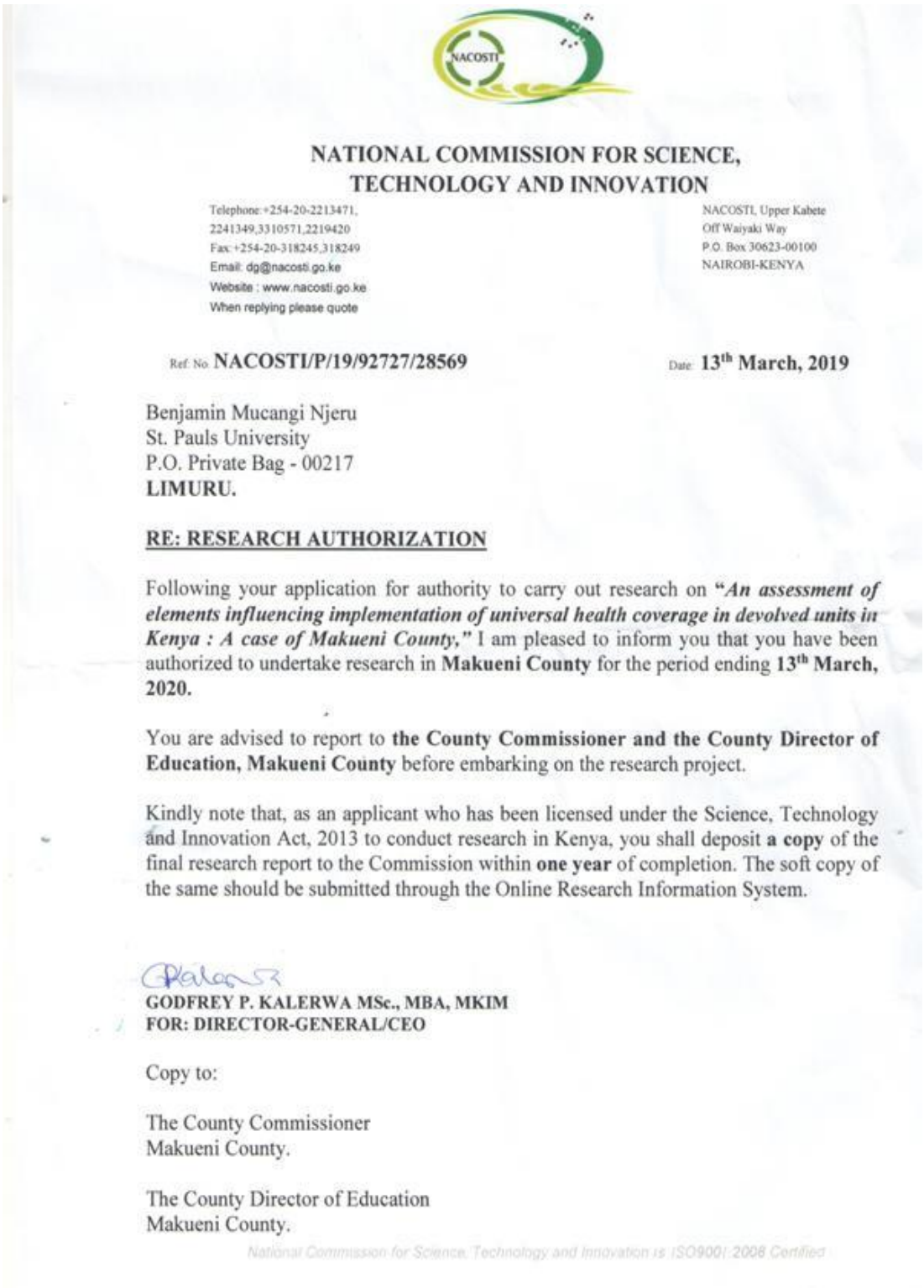
The two levels of governments have specific functions assigned to them which are as follows:

Table 5: National and Devolved Healthcare Functions

National Government	County Governments
The leadership of health policy development	County health facilities and pharmacies
Management of national referral health facilities	Ambulance services
Capacity building and technical assistance to counties	Promotion of primary healthcare
Consumer protection, including the development of norms, standards, and guidelines	Licensing and control of undertakings that sell food to the public; cemeteries, funeral parlours and crematoria; and refuse removal, refuse dumps, and solid waste disposal

Source: (Government of Kenya, 2010).

Appendix IV: Authorization Letter



NATIONAL COMMISSION FOR SCIENCE,
TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,
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Website : www.nacosti.go.ke
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NAIROBI-KENYA

Ref: No. **NACOSTI/P/19/92727/28569**

Date: **13th March, 2019**

Benjamin Mucangi Njeru
St. Pauls University
P.O. Private Bag - 00217
LIMURU.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"An assessment of elements influencing implementation of universal health coverage in devolved units in Kenya : A case of Makueni County,"*** I am pleased to inform you that you have been authorized to undertake research in **Makueni County** for the period ending **13th March, 2020.**

You are advised to report to **the County Commissioner and the County Director of Education, Makueni County** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

GODFREY P. KALERWA MSc., MBA, MKIM
FOR: DIRECTOR-GENERAL/CEO

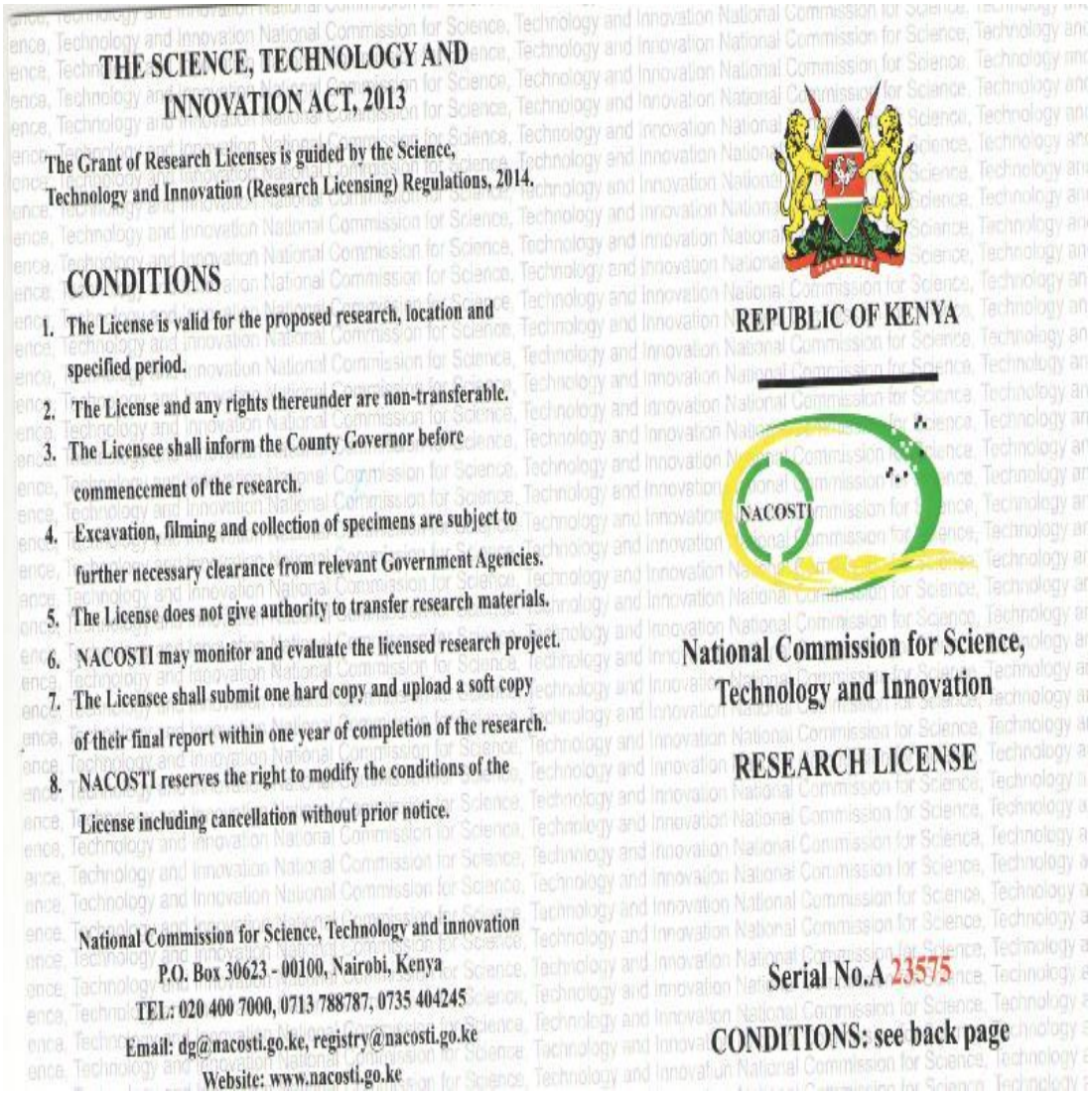
Copy to:

The County Commissioner
Makueni County.

The County Director of Education
Makueni County.

National Commission for Science, Technology and Innovation is ISO9001: 2008 Certified

Appendix V: Permit



THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013

The Grant of Research Licenses is guided by the Science, Technology and Innovation (Research Licensing) Regulations, 2014.

CONDITIONS

1. The License is valid for the proposed research, location and specified period.
2. The License and any rights thereunder are non-transferable.
3. The Licensee shall inform the County Governor before commencement of the research.
4. Excavation, filming and collection of specimens are subject to further necessary clearance from relevant Government Agencies.
5. The License does not give authority to transfer research materials.
6. NACOSTI may monitor and evaluate the licensed research project.
7. The Licensee shall submit one hard copy and upload a soft copy of their final report within one year of completion of the research.
8. NACOSTI reserves the right to modify the conditions of the License including cancellation without prior notice.

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REPUBLIC OF KENYA

NACOSTI

National Commission for Science, Technology and Innovation

RESEARCH LICENSE

Serial No.A 23575

CONDITIONS: see back page

THIS IS TO CERTIFY THAT:
MR. BENJAMIN MUCANGI NJERU
of ST PAULS UNIVERSITY, 0-202
NAIROBI,has been permitted to conduct
research in *Makueni County*

on the topic: *AN ASSESSMENT OF ELEMENTS INFLUENCING IMPLEMEMNTATUION OF UNIVERSAL HEALTH COVERAGE IN DEVOLVED UNITS IN KENYA : A CASE OF MAKUENI COUNTY*

for the period ending:
13th March,2020

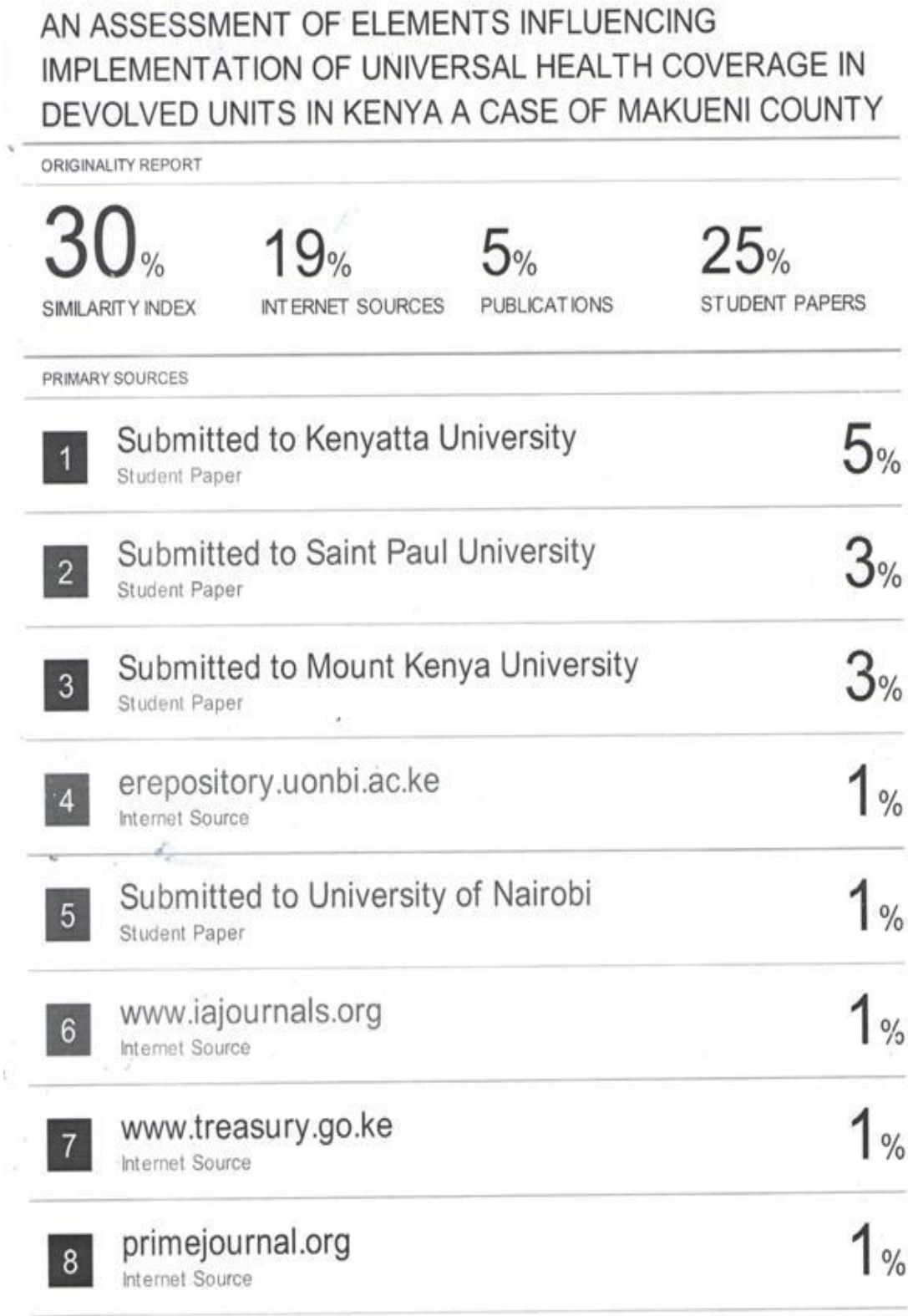
Permit No : NACOSTI/P/19/92727/28569
Date Of Issue : 13th March,2019
Fee Recieved :Ksh 1000



.....
Applicant's Signature

.....
Director General
National Commission for Science, Technology & Innovation

TURNTIN REPORT



AN ASSESSMENT OF ELEMENTS INFLUENCING IMPLEMENTATION OF UNIVERSAL HEALTH COVERAGE IN DEVOLVED UNITS IN KENYA A CASE OF MAKUENI COUNTY

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